

UNITED STATES TARIFF COMMISSION

SUMMARIES OF TRADE AND TARIFF INFORMATION

**Prepared in Terms of the Tariff Schedules
of the United States (TSUS)**

Schedule 3

**Textile Fibers and Textile Products
(In 6 volumes)**

VOLUME 2

**FIBERS, YARNS, WASTE, AND INTERMEDIATE PRODUCTS OF
SILK, MANMADE FIBER, METALIZED, PAPER, CERTAIN HAIR,
AND YARNS, N.S.P.F.**



**TC Publication 311
Second Printing
Washington, D. C.
1970**

UNITED STATES TARIFF COMMISSION

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Yarns, n. s. p. f.
- 3 - Fabrics, Woven, Knit, Pile, Tufted, and Narrow
- 4 - Felts, Batting, Nonwoven Fabrics, Fish Nets, Machinery
Belts and Clothing, Hose, Coated Fabrics, and
Other Fabrics for Special Purposes
- 5 - Textile Furnishings and Apparel
- 6 - Cordage, Braids, Elastic Yarns and Fabrics, Lace,
Ornamented Fabrics, Trimmings, Packing, Polishing
Cloths, Sacks, Labels, Lacings, Rags, and Other
Miscellaneous Textile Products

FOREWORD

In an address delivered in Boston on May 18, 1917, Frank W. Taussig, distinguished first chairman of the Tariff Commission, delineated the responsibility of the newly established Commission to operate as a source of objective, factual information on tariffs and trade. He stated that the Commission was already preparing a catalog of tariff information--

designed to have on hand, in compact and simple form, all available data on the growth, development and location of industries affected by the tariff, on the extent of domestic production, on the extent of imports, on the conditions of competition between domestic and foreign products.

The first such report was issued in 1920. Subsequently three series of summaries of tariff information on commodities were published--in 1921, 1929, and 1948-50. The current series, entitled Summaries of Trade and Tariff Information, presents the information in terms of the tariff items provided for in the eight tariff schedules of the Tariff Schedules of the United States (abbreviated to TSUS in these volumes), which on August 31, 1963, replaced the 16 schedules of the Tariff Act of 1930.

Through its professional staff of commodity specialists, economists, lawyers, statisticians, and accountants, the Commission follows the movement of thousands of articles in international commodity trade, and during the years of its existence, has built up a reservoir of knowledge and understanding, not only with respect to imports but also regarding products and their uses, techniques of manufacturing and processing, commercial practices, and markets. Accordingly, the Commission believes that, when completed, the current series of summaries will be the most comprehensive publication of its kind and will present benchmark information that will serve many interests. This project, although encyclopedic, attempts to conform with Chairman Taussig's admonition to be "exhaustive in inquiry, and at the same time brief and discriminating in statement."

This series is being published in 62 volumes of summaries, each volume to be issued as soon as completed. Although the order of publication may not follow the numerical sequence of the items in the TSUS, all items are to be covered. As far as practicable, each volume reflects the most recent developments affecting U.S. foreign trade in the commodities included.

SUMMARIES OF TRADE AND TARIFF INFORMATION

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INTRODUCTION

This volume, identified as volume 3:2, covers fibers, yarns, threads, wastes, and intermediate products of silk, manmade, and miscellaneous fibers and yarns classifiable under subparts 1D, 1E, or 1F of part 1 of schedule 3 of the Tariff Schedules of the United States (TSUS). Generally, the 18 summaries in this volume appear in the numerical order of the TSUS item numbers. Whenever a summary contains more than one TSUS item, the first number of the summary controls the sequence of that summary in the volume.

The first six summaries cover the TSUS items of subpart 1D, Silk; the next 11 summaries, those of subpart 1E, Manmade Fibers; and the last summary, that of subpart 1F, Miscellaneous Textile Materials. Summaries on cotton, other vegetable fibers, and wool and related animal hair are contained in volume 1 of the TSUS schedule 3.

The products in this volume account for almost half of the mill consumption of textile fibers in the United States in 1968. Products of manmade fibers constitute practically the entire consumption covered in the volume; those of silk and miscellaneous fibers comprised less than one-half of 1 percent.

The U.S. mill consumption of manmade fibers exceeded the total mill consumption of cotton, wool, and silk fibers for the first time in 1968. Comparisons of mill consumption in 1960, 1965, and 1968, of the four fibers named, as reported by the Textile Economics Bureau,

Inc., in its publication Textile Organon, may be made from the following data:

Fiber	1960		1965		1968	
	Quantity	Share of total	Quantity	Share of total	Quantity	Share of total
	Million		Million		Million	
	pounds	Percent	pounds	Percent	pounds	Percent
Manmade--	1,877.8	29.0	3,624.1	42.7	5,301.4	54.2
Cotton---	4,190.9	64.6	4,477.5	52.7	4,146.5	42.4
Wool-----	411.0	6.3	387.0	4.5	329.8	3.4
Silk-----	6.9	0.1	5.8	0.1	4.0	1/
Total--	6,486.6	100.0	8,494.4	100.0	9,781.7	100.0

1/ Less than 0.05 percent.

The values of U.S. shipments for cellulosic manmade fibers (industry 2823); synthetic organic fibers (industry 2824); and glass fiber, textile type (product code 32293), as reported in the Census of Manufactures for 1958, 1963, and 1967 and in the Survey of Manufactures for 1964, 1965, and 1966, by the Bureau of the Census, U.S. Department of Commerce, were as follows (in millions of dollars):

Year	Cellulosic (industry 2823)	Noncellulosic (organic) (industry 2824)	Glass textile fiber (product code 32293)
1958-----	583	1/	2/
1963-----	649	1,368	92
1964-----	711	1,573	109
1965-----	741	1,833	128
1966-----	721	1,939	150
1967 3/-----	681	1,962	138

1/ Withheld to avoid disclosing figures for individual companies.

2/ Not separately reported.

3/ Preliminary.

Shipments of spun yarn of manmade fibers are not included in the data tabulated above.

World production in 1960 and 1968 of the manmade fibers and related products covered in the 11 pertinent summaries and world productive capacity as of March 1969, as reported by the Textile Economics Bureau, Inc., were as follows:

Type of fiber	Production			Capacity March 1969
	1960	1968	Change 1960-1968	
	Million pounds	Million pounds	Percent	Million pounds
Rayon and acetate:				
Yarn + monofilaments----	2,494	3,122	+25.2	3,590
Staple + tow-----	3,255	4,654	+43.0	5,494
Total-----	5,749	7,776	+35.3	9,084
Noncellulosic:				
Yarn + monofilaments----	919	4,322	+370.3	5,704
Staple + tow-----	629	3,968	+530.8	5,370
Total-----	1,548	8,290	+435.2	11,074
Total: <u>1/</u>				
Yarn + monofilaments----	3,413	7,444	+118.1	9,294
Staple + tow-----	3,884	8,622	+122.0	10,864
World total manmade---	7,297	16,066	+120.2	20,158
Glass <u>2/</u> -----	231.0	621.9	+169.2	892.9

1/ Does not include textile glass fiber.

2/ Based on data available; does not include Czechoslovakia, East Germany, Mainland China, India, Poland, South Africa, Spain, Switzerland, the United Kingdom, and the U.S.S.R.

Appendix A to this volume contains reproductions of segments of the Tariff Schedules of the United States Annotated (TSUSA-1969) pertinent to the items covered by this volume; it includes the general headnotes to the TSUS and rules of interpretation.

Appendix B shows the value of U.S. imports for consumption in 1968, total and from the three principal suppliers, by the TSUS items included in the individual summaries of this volume.

Appendix C shows the value of U.S. imports for consumption in 1969, total and from the three principal suppliers, by the TSUS items included in the individual summaries of this volume.

<u>Commodity</u>	<u>TSUS item</u>
Silk cocoons suitable for reeling-----	308.02
Raw silk, in skeins-----	308.04
Other raw silk and processed raw silk-----	308.06

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. consumption of raw silk consists entirely of imported merchandise. Imports in 1968 had an aggregate value of \$17.7 million. Imports of silk processed beyond the raw state but not made into yarns are small.

Description and uses

Silk cocoons are the shells silkworms construct to protect themselves during their transition to chrysalises and moths. A single cocoon is made of a continuous filament of silk which the worm extrudes from its body and throws about itself, layer on layer, making a thick, smooth symmetrical wall. Along with the silk filament, the worm emits a gummy substance called sericin, which cements the silk filaments into a firm cocoon. Live cocoons, those containing the chrysalises, are known as green (also fresh or raw) cocoons. Small amounts of the annual world output of green cocoons are used for breeding and commercial egg production; the remainder that is intended for reeling is subjected to a steam or heat treatment to stifle the chrysalises. Cocoons so treated are called dry cocoons. Only a negligible quantity of cocoons (both green and dry) enter international trade. U.S. imports consist chiefly of dried reelable cocoons for museum and school displays and for experimental reeling; it is possible that some inferior grades of reelable dry cocoons better adapted for carding are also imported.

Raw silk is generally imported in skeins--as reeled from the cocoon or as rereeled into skeins--because it is duty free in this form under item 308.04. Some raw silk, however, is imported wound on cones, spools, cops, tubes, or beams, and is dutiable under item 308.06. Only a fifth of a cocoon contains reelable silk filament (sometimes 4,000 yards in length); the tough outer husk and soft inner portions of the cocoon, which are unreelable but can be combed and spun, are generally considered silk waste, which also includes.

filature and mill waste. ^{1/} Raw silk that has been advanced in condition by such processes as degumming, dyeing, bleaching, and weighting is classified under item 308.06. There is little commercial trade in such silk, however, because these processes are generally performed by domestic manufacturers or converters in their own plants or on contract in connection with other operations, such as throwing, weaving, knitting, or finishing.

The most important commercial cultivated silk is produced by the species of silkworm, the caterpillar of the moth Bombyx mori, which feeds on the leaves of white mulberry trees usually planted and tended by farmers. Uncultivated silk is reeled from cocoons formed by silkworms feeding on leaves from trees or vegetation growing in a wild or semiwild state. Almost all silk in commerce is cultivated.

Two variations of cultivated silk are doupion and hand-reeled silk. Doupion, which usually comes from Japan or Italy, consists of two entangled silk filaments reeled from a double cocoon formed by two silkworms spinning together; however, in recent years the term has been used in the trade to denote rough silk reeled from single cocoons. Hand-reeled silk, most of which comes from the hinterlands of mainland China, has filaments of uneven texture.

Silk has more tensile strength than a drawn wire of soft steel, but slightly less than that of nylon. Because of its ability to withstand tension, shearing, and twisting, silk is more durable than almost any other natural fiber and most of the manmade fibers. Silk also feels warmer than many other fibers.

Silk is used in fabrics for women's and men's wear, including suits, dresses, undergarments, veils, scarfs, neckties, hats, and nightwear. It is also used in making hosiery, lace, and gloves and in the manufacture of home furnishings, such as draperies, bedding, and napery. Other consumer types of silk products are ribbons, nettings, handbags and purses, cigarette cases, and shoes and slippers. For industrial and other purposes, silk is made into bolting cloth, sewing thread, surgical sutures, fishing lines and nets, electrical insulation, and casket linings.

Notwithstanding the many desirable characteristics of silk, this fiber has been displaced to a considerable extent by manmade fibers. The displacement is attributable to the following factors: (1) The older manmade fibers (such as acetate and rayon) are much cheaper

^{1/} See separate summary on silk waste (items 308.10, 308.12, 308.16, 308.18, and 308.20).

than silk; (2) those developed since 1939 (principally acrylic, nylon, and polyester fibers) have physical characteristics that appeal to manufacturers and customers; and (3) manmade fibers have much greater price stability than raw silk mainly because the raw materials of the former are more abundant and less subject to changes in natural conditions.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows:

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)		
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972	
308.02:	Silk cocoons suitable for reeling.	Free	<u>1/</u>	<u>1/</u>	
	Raw silk, and such silk processed but not made into yarns:				
308.04:	Raw silk, in skeins, as reeled from the cocoon, or as re- reeled, but not processed.	Free	<u>1/</u>	<u>1/</u>	
308.06:	Other-----	14% ad val.	11% ad val.	7% ad val.	

1/ Duty-free status was not affected by the trade conference.

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications in the rate on item 308.06 as a result of the concession granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concession).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. A concession amounting to a reduction of 50 percent in the duty on item 308.06 was granted by the United States in the Kennedy Round.

"Silk, tussah, muga, and eri" cannot be imported without a certificate of origin satisfactory to the Office of Foreign Assets Control of the U.S. Treasury Department. 1/

U.S. consumption

U.S. consumption of raw silk, a luxury or semiluxury fiber, is only slightly influenced by fluctuations in disposable personal income. Rather, consumption is greatly influenced by changes in the prices of raw silk relative to the prices of other fibers, by exclusive fashion design and style changes, and by the availability of supplies from the producing countries.

As there is no commercial production of raw silk in the United States, apparent consumption of raw silk and processed raw silk is equivalent to imports of such silk (items 308.04 and 308.06) minus reexports. Reexports were equivalent to 1 to 2 percent of imports in 1961-68. In that period, the quantity consumed showed a downward trend; it reached its maximum in 1961, when almost 6 million pounds was consumed, and its minimum in 1968, when about 2.2 million pounds was consumed. Rising prices of silk--resulting primarily from speculative activity and limited world supplies--were the principal cause of the downward trend.

U.S. producers and production

Sericulture (rearing of silkworms) and silk reeling have never been commercially successful in the United States. These occupations require great care and labor. Fewer than 10 firms in the United States are known to be engaged, on contract, in modifying the form of imported raw silk before it is made into yarn for textile purposes. None process raw silk exclusively. The majority of these companies dye or bleach raw silk in its imported condition; about three or four degum or weight raw silk. All but two are located in or near the cities of Philadelphia and New York.

1/ The control formalities are designed to prevent the importation of products originating in Communist China, North Korea, or North Vietnam. The appendix to section 500.204 (21) of the Code of Federal Regulations, title 31 chapter V, states that "'Silk, tussah, muga, and eri" includes raw silk, silk waste, silk noils, and continuous filament silk yarn and thread, but does not include other silk yarn or thread of tussah, muga, or eri silk."

U.S. imports

The United States has generally been the world's largest importer of raw silk for many decades. For reasons cited elsewhere in this summary, U.S. imports have been experiencing a long downward trend. This trend continued in 1961-68, when the quantity of imports declined from a peak in 1961 to a low in 1968 (table 1). Imports have been almost entirely of skeined raw silk; small amounts of reelable cocoons and processed raw silk also were imported in 1961-68.

From the 1950's to the middle 1960's, Japan was by far the largest supplier of raw silk imports. Since 1964, however, the Republic of Korea also has become an important source; in 1966 and 1968 it was the leading supplier. Italy became a significant supplier beginning in 1964 and was the principal supplier in 1967 (table 2). In 1968 Japan furnished 22 percent of the quantity of the imported raw silk; the Republic of Korea, 38 percent; and Italy, 36 percent.

There are fewer than 15 importers of raw silk, all of which are diversified trading companies with offices in New York City. The majority of these importers are affiliated with foreign companies.

Foreign production and trade

In most countries, production of cultivated silk begins with silkworm egg raisers. The raisers select the moths for breeding, arrange areas for egg laying, and place the eggs in containers for sale to farmers that grow mulberry trees. The farmers hatch the silkworm eggs to coincide with the growth of mulberry leaves. The leaves are fed to the silkworms for a period of about 25 days, after which the silkworms begin to spin their cocoons. The farmers sell the cocoons to the reeling mills, usually large organizations which unreel the filaments of the cocoons into the raw silk of commerce. In many countries, some silk is still hand reeled, but for many years almost all cultivated silk in international trade has been machine reeled by big companies with modern automatic reeling machines.

Considerable influence on production and trade is exerted by the governments of many silk-producing countries. Silkworm eggs have to pass certain inspection tests, public cocoon-testing stations examine and grade the cocoons sold by the farmers to reeling mills, and the reeled silk must meet a minimum standard or grade before it can be sold. Additional government controls are administered when the silk is exported.

RAW SILK AND PROCESSED RAW SILK

The International Silk Association estimated annual world production of raw silk in 1961-67 as follows:

<u>Year</u>	<u>Million pounds</u>
1961-----	69.1
1962-----	72.8
1963-----	68.3
1964-----	72.4
1965-----	73.3
1966-----	72.9
1967-----	75.5

Japan was the world's largest producer of raw silk in 1967, accounting for about 55 percent of the supply in that year, and Communist China was second. Other important producers of raw silk in 1967 were the U.S.S.R., India, the Republic of Korea, and Italy. The Republic of Korea was the largest exporter in 1967, furnishing more than 48 percent of the raw silk in international trade in that year. Japan was second, accounting for almost 30 percent of the world trade in raw silk in 1967. Principal markets for raw silk from the Republic of Korea in 1967 were Japan and the United States. Japan's principal markets in 1968 were the United States, Italy, Switzerland, France, and West Germany.

Because world production and consumption of raw silk and world trade in it are dominated by Japan, the natural, economic and social conditions in that country, including speculative activity on the raw silk exchanges, have an important influence on the price structure of raw silk in world markets. World consumption and the price structure of raw silk in addition to being influenced by Japan's domestic silk difficulties, are influenced by fashion, the replacement by manmade fibers for some uses, and levels of economic activity. As the supplies of raw silk cannot be readily adjusted to changing world conditions, the prices of raw silk fluctuate considerably. Price stabilization efforts in Japan and other producing countries have met with little success.

Table 1.--Raw silk and processed raw silk: U.S. imports for consumption, by kinds, 1961-68

Year	: Reelable : : cocoons :	Skeined : raw silk :	Processed : raw silk :	Total
Quantity (1,000 pounds)				
1961-----	15 :	5,867 :	- :	5,882
1962-----	<u>1/</u> :	5,277 :	1 :	5,278
1963-----	1 :	4,404 :	3 :	4,408
1964-----	<u>1/</u> :	4,400 :	23 :	4,423
1965-----	4 :	3,638 :	1 :	3,643
1966-----	7 :	3,504 :	6 :	3,517
1967-----	<u>1/</u> :	2,507 :	<u>1/</u> :	2,507
1968-----	- :	2,189 :	17 :	2,206
Value (1,000 dollars)				
1961-----	3 :	27,105 :	- :	27,108
1962-----	<u>2/</u> :	26,810 :	6 :	26,816
1963-----	2 :	27,212 :	7 :	27,221
1964-----	1 :	22,456 :	23 :	22,480
1965-----	16 :	19,996 :	1 :	20,013
1966-----	3 :	22,830 :	9 :	22,842
1967-----	1 :	18,263 :	4 :	18,268
1968-----	- :	17,726 :	15 :	17,741
<u>1/</u> Less than 500 pounds. <u>2/</u> Less than \$500.				

Source: Compiled from official statistics of the U.S. Department of Commerce.

RAW SILK AND PROCESSED RAW SILK

Table 2.--Raw silk and processed raw silk: U.S. imports for consumption, by principal sources, 1961-68

Year	Japan	Republic of Korea	Italy	All other	Total
Quantity (1,000 pounds)					
1961-----	5,318	458	106	-	5,882
1962-----	4,783	336	159	-	5,278
1963-----	3,905	344	156	3	4,408
1964-----	2,927	1,017	453	26	4,423
1965-----	1,855	1,059	727	2	3,643
1966-----	1,103	1,365	1,004	45	3,517
1967-----	235	1,086	1,117	69	2,507
1968-----	492	848	797	69	2,206
Value (1,000 dollars)					
1961-----	24,686	1,999	423	-	27,108
1962-----	24,403	1,648	765	-	26,816
1963-----	24,263	2,104	847	7	27,221
1964-----	15,493	4,970	1,980	37	22,480
1965-----	10,508	5,793	3,707	5	20,013
1966-----	7,813	8,823	5,963	243	22,842
1967-----	1,801	7,668	8,316	483	18,268
1968-----	4,270	6,800	6,242	429	17,741

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS item</u>
Waste, not advanced:	
Long noils-----	308.10
Other-----	308.12
Roving-----	308.16, -.18
Other fibers of silk, processed but not spun-----	308.20

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States is the world's third largest consumer of silk waste. Imports supply 80 to 90 percent of U.S. consumption and consist mainly of unadvanced silk waste. The articles other than waste discussed herein are of minor significance both in domestic and international commerce.

Description and uses

This summary covers silk waste, not advanced (items 308.10 and 308.12), which consists largely of thread waste derived from domestic processing of imported raw silk, and long and short noils obtained from the processing of silk waste; silk waste which has been advanced by degumming, cleaning, opening, lapping, filling (picking), dressing (combing), or drawing to the stage of sliver (item 308.20); and fibers of silk which have been attenuated or drawn into roving (items 308.16 and 308.18). The term "waste," as defined in headnote 1(a) to part I of schedule 3 of the TSUS, is limited to fiber, yarn, and thread wastes and does not include silk rags or other silk scrap material. Silk rags are covered in the summary on item 390.60.

Silk waste, not advanced, includes (1) unreelable cocoons and other sericultural waste, (2) cocoon strippings, cocoon refuse, and reel waste discarded in silk filatures (reeling establishments), and (3) certain types of mill waste derived in processing raw silk and silk waste into yarn and fabrics.

Unreelable cocoons consist of (1) pierced cocoons from which the moth has emerged, breaking the continuity of the filaments, (2) damaged, malformed, and underdeveloped cocoons having filaments which

do not satisfy reeling standards, and (3) doupions ^{1/} and cocoons of certain species of wild (undomesticated) silkworms from which the filaments cannot be profitably worked by reeling. Sericultural waste also includes an inferior, excessively gummy waste called blaze which is the gauzy network of fibers spun by the silkworm as guy lines for the support of its cocoon.

Filature waste comprises (1) frisons (floss or knubs), the outer layers of filaments brushed off the cocoons preliminary to reeling; (2) reel waste, the weak or irregular filaments broken or discarded in the reeling or rereeling operations; (3) pelettes, the innermost layers of silk fiber next to the chrysalis which remain after the reelable silk has been removed; and (4) bassines, the shells of the dead pupae, from which the attached silk fibers are recovered by boiling.

Mill waste includes (1) soft, untwisted types of silk thread waste obtained in throwing, weaving, or knitting operations, (2) short (exhausted) silk noils, and (3) long silk noils. Exhausted noils are the short fibers, not more than 2 inches in length, removed in the last combing (dressing) operation to which silk waste is subjected before its manufacture into spun-silk yarn. Noils longer than 2 inches in length are byproducts of intermediate dressing processes and have to be carded or combed before they are spun into yarn.

Unreelable cocoons, silk filature waste, and mill waste (excluding the short noils) are processed into standard spun-silk yarn. Silk noils not more than 2 inches in length, which are too short to be of further use in manufacturing standard spun-silk yarn, are utilized in the production of silk noil yarn or for blending with other fibers on the woolen spinning system. Because silk resists the corrosive effects of nitrates, is strong, and leaves no slow-burning residue which causes "hang fire," yarn spun from silk waste is preferred by the military over other fibers for weaving "cartridge cloth" for powder bags and igniter pads.

The processes employed to reach successive stages or forms of advanced silk waste are degumming, cleaning, opening, lapping, filling, dressing, drawing (to the stage of sliver), and roving. The principal form of advanced silk waste entering commerce is dressed or combed silk called peignee. Peignee consists of long clean fibers combed parallel which are ready for drawing and roving processes. Roving is completely prepared silk fibers ready for attenuation into spun-silk yarn.

^{1/} Doupion here refers to double-sized cocoons formed by two silkworms spinning a cocoon together.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows:

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)	
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Waste and advanced waste, of silk, and fibers of silk processed but not spun:			
	Waste, not advanced:			
308.10:	Noils containing over 50 percent by weight of fibers over 2 inches in length.	:14% ad val.	: 11% ad val.	: 7% ad val.
308.12:	Other waste-----	: Free	: 1/	: 1/
	Roving:			
308.16:	Not bleached and not colored.	:17% ad val.	: 13.5% ad val.	: 8.5% ad val.
308.18:	Bleached or colored.	:20% ad val.	: 16% ad val.	: 10% ad val.
308.20:	Other-----	:14% ad val.	: 11% ad val.	: 7% ad val.

1/ Duty-free status was not affected by the trade conference.

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade (GATT) concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Item 308.12 continues to be duty free, as originally provided in the Tariff Act of 1930; the duty-free status was bound against increase by a U.S. concession in the GATT effective September 10, 1955. Concessions amounting to reductions of 50 percent in the duties were granted by the United States in the Kennedy Round on all the other items listed above.

U.S. consumption

Advanced silk waste and roving are generally intermediate products in the manufacture of spun-silk yarn. No data on their production and consumption are available.

Excluding Government disposals of unadvanced silk waste from the strategic materials stockpile during 1961-68, apparent U.S. consumption of such waste ranged from 362,000 pounds in 1967 to 2.9 million pounds in 1965 (table 1). Imports furnished the bulk of domestic consumption in each year of the period; exports were negligible. Government disposals no doubt had some effect on consumption in certain years during 1961-68. Generally, however, the increases in consumption which occurred during the period were attributable mainly to the substitution of waste silk for raw silk in several uses, especially when the prices of raw silk reached unprofitable levels for industrial consumers. In 1961-65, the share of U.S. consumption of silk waste accounted for by imports rose from 77 to 90 percent. In 1966-67--when there was a sharp decline in consumption, resulting in large part from price uncertainties--the share accounted for by imports decreased to 77 percent. In 1968, however, it increased to about 94 percent, the highest point in the 1961-68 period.

U.S. producers

Because sericulture (rearing of silkworms) and silk reeling have never been commercially successful in the United States, domestic production of silk waste is confined almost entirely to mill wastes, by-products of silk-yarn processing and silk fabric manufacture. Many firms consume the silk waste they recover in manufacturing. Some companies--particularly those that have throwing, weaving, and knitting operations--sell their silk waste to specialized dealers that convert it into usable form for resale. The number of firms that produce silk waste in their own operations is not available; likewise, the number of firms that process silk waste for sale is not known. It is believed, however, that the former are more numerous than the latter.

U.S. production

U.S. output of silk thread waste probably averages about 3 percent of the imported raw silk processed in this country. Short-silk-noil production averages approximately 3 percent of total imported silk waste processed preparatory to spinning. Long-noil production averages almost 4 percent of the silk waste that is domestically processed. Silk waste output of these three combined is estimated to have ranged in 1961-68 from 84,000 pounds in 1967 to 290,000 pounds in 1965 (table 1).

U.S. imports

In 1961-68, U.S. imports of unadvanced silk waste fluctuated widely, from 278,000 pounds in 1967 to 2,633,000 pounds in 1965 (table 1). In each year imports greatly exceeded domestic production. Imports consist mainly of noils under 2 inches in length, but they also include the other types of waste considered herein. Imported silk mill waste is similar to the silk mill waste produced domestically, but imported filature waste and damaged cocoons have no domestic counterparts. Italy and Japan are the principal suppliers of unadvanced silk waste (table 2). These two countries together furnish almost 90 percent of U.S. imports of such waste.

U.S. imports of advanced silk waste (mostly peignee) and roving are usually small compared with imports of unadvanced silk waste. In 1964-68 they ranged from 5,000 pounds in 1964 to 22,000 pounds in 1966; they were 16,000 pounds in 1967 and 18,000 pounds in 1968. Italy and Japan are usually the principal suppliers, although Canada, with 11,000 pounds of bleached or colored roving, was the largest supplier in 1967.

Table 1.--Silk waste, not advanced: U.S. production, imports for consumption, and apparent consumption, 1961-68

Year	: Production <u>1/</u> :	Imports :	Apparent consumption :	Ratio of imports to consumption :
	: <u>1,000</u> :	: <u>1,000</u> :	: <u>1,000</u> :	: <u>Percent</u> :
	: <u>pounds</u> :	: <u>pounds</u> :	: <u>pounds</u> :	
1961-----	241 :	807 :	<u>2/</u> 1,048 :	77.0
1962-----	197 :	1,198 :	1,395 :	85.9
1963-----	265 :	1,984 :	2,249 :	88.2
1964-----	285 :	2,268 :	2,553 :	88.8
1965-----	290 :	2,633 :	<u>2/</u> 2,923 :	90.1
1966-----	177 :	1,073 :	<u>2/</u> 1,250 :	85.8
1967-----	84 :	278 :	362 :	76.8
1968-----	120 :	1,782 :	1,902 :	93.7

1/ Estimated by the U.S. Tariff Commission staff on the basis of average yield from imported materials.

2/ Understated; figure for 1961 does not include 1.8 million pounds released by the U.S. Government from its strategic materials stockpile during 1960 and 1961, and figures for 1965 and 1966 do not include 1.0 million pounds released during these years.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Note.--Exports were negligible in most years.

Table 2.--Silk waste, not advanced: U.S. imports for consumption, by principal sources, 1961-68

Year	Italy	Japan	All other	Total
Quantity (1,000 pounds)				
1961-----	232	503	72	807
1962-----	615	546	37	1,198
1963-----	1,639	182	163	1,984
1964-----	1,496	751	21	2,268
1965-----	934	1,436	263	2,633
1966-----	794	217	62	1,073
1967-----	168	110	-	278
1968-----	944	813	25	1,782
Value (1,000 dollars)				
1961-----	70	109	26	205
1962-----	176	152	10	338
1963-----	434	56	46	536
1964-----	425	263	12	700
1965-----	389	677	119	1,185
1966-----	446	126	37	609
1967-----	56	53	-	109
1968-----	252	243	7	502

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS item</u>
Thrown-silk yarns:	
Not more advanced than organzine, singles, or tram-----	308.30
Other-----	308.35

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. production of thrown-silk yarn has been declining; in 1968 it had an estimated value of \$11.0 million. Imports in recent years have ranged from 7 to 14 percent of U.S. consumption; exports are minor.

Description and uses

This summary covers yarns made from continuous silk filaments either by doubling and twisting or by twisting only. In the TSUS these yarns are separated into two categories: low-twist yarns (item 308.30) and high-twist yarns (item 308.35). Item 308.30 is restricted to those yarns wholly of continuous silk yarns not more advanced than organzine, singles, or tram. Item 308.35 covers all other yarns wholly of continuous silk fibers and pertains particularly to high-twist silk filament yarns. Related imported articles are covered in the summary "Certain Silk Yarns" and include combinations of spun- and thrown-silk yarns (item 308.55) and combinations of thrown-silk yarns with manmade fibers (item 308.75).

Yarn made from continuous silk filament is known as thrown silk. Low-twist thrown silk generally consists of yarns which have no more than 20 turns per inch. The more important low-twist yarns are singles, tram, and organzine. Singles consist of two or more silk filaments twisted together; tram is made by doubling two or more silk filaments and then twisting them, usually with a slack twist; and organzine is made by twisting separately two or more singles, doubling, and then retwisting in the reverse direction.

High-twist thrown silk usually refers to yarns which have more than 20 turns per inch. The more popular high-twist yarns are crepe and grenadine. In structure, crepe is a tram made with extra-hard twist and grenadine is a very-hard-twist organzine.

Thrown-silk singles, when loosely twisted, are ideal as filling in many fabrics and, when firmly twisted, are used in sheer fabrics, especially chiffons. Tram is utilized principally by silk weavers as filling for various kinds of woven fabrics; in addition, it is used by silk knitters for men's and women's hosiery. Organzine is utilized as the warp yarn in nearly all yarn-dyed silk fabrics and in many fabrics woven in the gray. Thrown-silk crepe enters into all kinds of crepe fabrics, either in the warp or filling, or in both. Grenadine silk yarn is especially popular for all kinds of sheer cloths including voile, organdy, and grenadine. Thrown-silk yarns are also used for stitching buttonholes and in the manufacture of passementerie (trimmings, edgings, and so forth), tassels, and fringe twists for ornament on dresses.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows:

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)	
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Yarns wholly of continuous fibers:			
308.30	Not more advanced than organzine, singles, or tram.	10% ad val.	<u>1/</u>	<u>1/</u>
308.35	Other-----	20% ad val.	16% ad val.	10% ad val.

1/ Prior rate was not affected by the trade conference.

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modification in the rate on item 308.35 as a result of a concession granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concession).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. A concession amounting to a reduction of 50 percent in the duty was granted by the United States on item 308.35.

U.S. consumption

Apparent U.S. consumption amounted to about 5.0 million pounds in 1961; since then it has declined in each succeeding year (table 1). The value of consumption was approximately \$30.4 million in 1961; it increased to \$30.8 million in 1962 but declined in every year thereafter. In 1968, apparent consumption amounted to about 1.2 million pounds, valued at \$12.2 million, less than in any other year since World War II.

The decline in consumption of thrown silk resulted from (1) the utilization of manmade fibers instead of thrown silk in many yarn-dyed fabrics, (2) the effective use of unthrown silk in piece-dyed fabrics, (3) the increasing prices of raw silk relative to stable-priced, less expensive yarns made from other fibers, and (4) the growing uncertainty of raw silk deliveries.

U.S. producers

Approximately 25 U.S. firms, almost all situated in the Susquehanna Valley of Pennsylvania, throw silk. Nearly all are medium-sized firms, each employing from 100 to 300 persons. About half of the firms account for 95 percent of the domestic output of thrown silk. Firms that account for the bulk of the U.S. production work on commission, charging a fee for throwing silk owned by their customers. For the dominating firms, the manufacture of thrown-silk yarn constitutes 70 to 80 percent of their operations. The remaining firms are principally those for which the manufacture of thrown-silk yarn is a minor operation; the processing of continuous filaments of manmade fibers is usually their main activity.

The firms that utilize the services of commission throwsters are mostly converters. The converters normally purchase the silk from importing establishments, then contact commission throwsters and have the silk thrown by them. The converters usually sell the thrown silk to fabric manufacturers. Some converters use the thrown silk themselves in their own fabric plants; others commission firms to make the fabric from the thrown silk. One U.S. converter accounts for more than half of the production of thrown silk; this converter and four other firms together account for more than 90 percent of the production of thrown silk.

U.S. production and exports

U.S. production of thrown-silk yarn declined from 4.7 million pounds, valued at \$28.5 million, in 1961 to 1.1 million pounds, valued at \$11.0 million, in 1968. In each of the years 1961-68,

production was smaller than in the preceding year (table 1). Because of a growing price-cost squeeze and other factors, production of thrown silk was smaller in 1968 than it had been in any other year since World War II. U.S. production has consisted mainly of low-twist thrown silk.

In 1961-68, U.S. exports of thrown silk were probably less than half of 1 percent of production.

U.S. imports

In 1961-68, U.S. imports of thrown-silk yarn ranged from 108,000 pounds, valued at \$954,000, in 1967 to 488,000 pounds, valued at \$3,049,000, in 1964 (table 1), when they were higher than they had been in any other year since the enactment of the Tariff Act of 1930. Imports in 1961-68 ranged from 7 to 14 percent of domestic consumption and consisted mainly of low-twist yarns, especially organzine. Small quantities of high-twist yarns also were imported. Almost all the types of thrown silk that were imported were similar to the corresponding types manufactured domestically, and were lower in price.

In 1961-68, imports of low-twist thrown silk were supplied principally by Japan and Italy (table 2). The bulk of the imports of low-twist thrown silk are supplied by trading companies affiliated or owned by large Japanese companies. Since 1964 the small imports of high-twist thrown silk have been furnished principally by Italy, although Japan was an important supplier in 1967.

Table 1.--Thrown-silk yarn: U.S. production, imports for consumption, and apparent consumption, 1961-68

(Quantity in thousands of pounds; value in thousands of dollars)

Year	Production ^{1/}	Imports	Apparent consumption	Ratio :(percent) of imports to consumption
Quantity				
1961-----	4,694	330	5,024	6.6
1962-----	4,221	419	4,640	9.0
1963-----	3,305	340	3,645	9.3
1964-----	3,096	488	3,584	13.6
1965-----	2,365	304	2,669	11.4
1966-----	2,106	194	2,300	8.4
1967-----	1,253	108	1,361	7.9
1968-----	1,106	127	1,233	10.3
Value				
1961-----	28,537	1,840	30,377	<u>2/</u>
1962-----	28,199	2,590	30,789	<u>2/</u>
1963-----	25,776	2,480	28,256	<u>2/</u>
1964-----	20,865	3,049	23,914	<u>2/</u>
1965-----	17,906	2,149	20,055	<u>2/</u>
1966-----	18,406	1,602	20,008	<u>2/</u>
1967-----	11,743	954	12,697	<u>2/</u>
1968-----	10,971	1,198	12,169	<u>2/</u>

^{1/} Quantity estimated by raw-silk converters on the basis of imports; value based on price of raw materials plus value added by manufacture.

^{2/} Not meaningful.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Note.--Exports of domestic merchandise are not separately recorded; however, they are estimated to be less than half of 1 percent of production.

THROWN-SILK YARN

Table 2.--Thrown-silk yarn: U.S. imports for consumption, by principal sources, 1961-68

Year	Japan	Italy	All other	Total
Quantity (1,000 pounds)				
1961-----	323 :	6 :	1 :	330
1962-----	416 :	3 :	- :	419
1963-----	339 :	<u>1/</u> :	1 :	340
1964-----	487 :	<u>1/</u> :	1 :	488
1965-----	302 :	2 :	<u>1/</u> :	304
1966-----	175 :	9 :	<u>2/</u> 10 :	194
1967-----	58 :	41 :	<u>3/</u> 9 :	108
1968-----	90 :	37 :	- :	127
Value (1,000 dollars)				
1961-----	1,811 :	29 :	- :	1,840
1962-----	2,578 :	12 :	- :	2,590
1963-----	2,476 :	1 :	3 :	2,480
1964-----	3,042 :	2 :	5 :	3,049
1965-----	2,137 :	11 :	1 :	2,149
1966-----	1,480 :	55 :	<u>2/</u> 67 :	1,602
1967-----	543 :	351 :	<u>3/</u> 60 :	954
1968-----	888 :	310 :	- :	1,198

1/ Less than 500 pounds.

2/ Includes 9,000 pounds, valued at \$63,000, imported from Switzerland.

3/ Includes 6,000 pounds, valued at \$45,000, imported from Switzerland.

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS</u> <u>item</u>
Spun-silk yarn:	
Wholly of silk:	
Singles-----	308.40, -.45, -.47
Plied-----	308.50, -.51
In chief value, but not wholly, of silk:	
Wholly of manmade fibers and noncontinuous silk fibers:	
Singles-----	308.60, -.65, -.66
Plied-----	308.70, -.71

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. imports in recent years have accounted for 11 to 55 percent of domestic consumption. Exports are negligible.

Description and uses

This summary covers spun yarn wholly of silk (items 308.40 to 308.51) and yarns in chief value of silk but also containing manmade fibers (items 308.60 to 308.71). Related articles covered in separate summaries are thrown-silk yarns, yarns wholly of silk but in part continuous and in part noncontinuous fibers, and yarns in chief value of silk but in part of fibers other than manmade.

There are two basic types of spun-silk yarn--standard, known as schappe in Europe, and silk-noil yarn, also known as bourette. Standard or schappe spun-silk yarn is manufactured on specialized preparatory and spinning machinery, while silk-noil yarn is made on woolen-system machinery. Plied spun-silk yarns are two or more single yarns which have been doubled or twisted together.

The silk fibers used in the manufacture of spun-silk yarns (both schappe and bourette) normally have a much longer staple length than cotton or wool fibers, and the strength of such yarns is correspondingly greater. The luster of spun-silk yarn is not as brilliant as that of thrown silk (made from continuous silk fiber); the twist has a tendency to diminish the luster, while adding to the strength. Silk-noil yarn (which is made from silk noils not more than 2 inches in length) has a high affinity for dyestuffs, but is weaker than standard

spun-silk yarn. Grades of spun silk are usually determined by the staple length of the fibers used, i.e., the longer the fibers, the better the grade of spun silk. In the United States spun-silk yarn is measured by the number of 840-yard hanks to the pound.

Standard spun-silk yarns are used for making sewing thread, decorative stripings for fine worsteds, necktie fabrics, dress and suiting fabrics, and upholstery and drapery materials. Silk-wool yarns are used in mixture fabrics containing yarns of other fibers and in the weaving of cartridge cloth. Plied spun-silk yarns are generally used as warp yarns in the manufacture of wholly spun-silk and silk-blend fabrics.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem):

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)	
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Yarns wholly of noncon-			
	tinuous silk fibers:			
	Singles:			
308.40:	Not bleached and not	17%	13.5%	8.5%
	colored.			
	Bleached or colored:			
308.45:	Not colored,	25.5%	20%	12.5%
	measuring over			
	58,800 yards per			
	pound.			
308.47:	Other-----	20%	16%	10%
	Plied:			
308.50:	Not colored, measur-	25.5%	20%	12.5%
	ing over 29,400			
	yards per pound.			
308.51:	Other-----	20%	16%	10%

TSUS item	Commodity	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)		
		Rate prior to Jan. 1, 1968	Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Yarns in chief value of			
	silk, consisting			
	only of noncontinuous silk fibers			
	and manmade fibers:			
	Singles:			
308.60:	Not bleached and not colored.	17%	13.5%	8.5%
	Bleached or colored:			
308.65:	Not colored, measuring over 58,800 yards per pound.	25.5%	20%	12.5%
308.66:	Other-----	20%	16%	10%
	Plied:			
308.70:	Not colored, measuring over 29,400 yards per pound.	25.5%	20%	12.5%
308.71:	Other-----	20%	16%	10%

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. U.S. concessions amounting to reductions of about 50 percent in the duties were granted in the Kennedy Round on all the items listed above.

Pursuant to Public Law 86-235, approved September 8, 1959, spun-silk or schappe-silk yarns, not dyed or colored, singles of more than 58,800 yards per pound, or plied of more than 29,400 yards per pound were accorded duty-free treatment during a 3-year period beginning

November 7, 1959. The duty-free treatment was continued to the close of November 7, 1965, by Public Law 87-602, approved August 24, 1962, to the close of November 7, 1968, by Public Law 89-228, approved October 1, 1965, and to the close of November 7, 1971, by Public Law 91-28, approved June 13, 1969.

U.S. consumption

U.S. consumption of spun-silk yarn fluctuated widely in 1961-68, ranging from 0.8 million pounds in 1967 to 3.1 million pounds in 1965 (see accompanying table). Consumption is highly unstable because it is influenced by price changes in raw materials, trends in style and exclusive fashion designs, competition from lower priced yarn of man-made fibers, the supply situation in foreign countries, and fluctuating imports of articles made of silk, such as fabrics and apparel.

U.S. producers

In 1968, standard spun-silk yarn was manufactured by one U.S. company operating a mill in New York State. The company used both unmanufactured and advanced silk waste. It generally purchased the former from an importer and obtained the latter from domestic sources, in addition to using some waste produced in its own operations. Spun-silk yarn was the company's only item of production for sale.

In 1968, silk-noil yarn was produced by about five medium-sized firms in New England and Pennsylvania. All of these firms also manufacture other products, and some spin yarn from manmade fibers and from wool. Silk-noil yarn is the principal product of one of the five firms.

U.S. production and exports

In recent years, U.S. output of spun silk has consisted predominantly of silk-noil yarns spun on the woolen system. In 1961-68, production of spun-silk yarns (standard and noil yarns combined) ranged from 0.3 million pounds in 1967 to 2.6 million pounds in 1965 (see accompanying table). Silk-noil yarn production usually exceeds imports, and standard spun-silk yarn output is less than imports.

U.S. exports are believed to be less than 1 percent of domestic production and are composed almost entirely of silk-noil yarn.

U.S. imports

In 1961-68, aggregate U.S. imports of spun-silk yarn ranged from 270,000 pounds in 1964 to 749,000 pounds in 1963 and constituted 11 to 55 percent of domestic consumption (see accompanying table). The bulk of the imports have been of the types that were eligible for duty-free treatment, mentioned earlier, in the section on U.S. tariff treatment. These types consist of fine standard spun-silk yarns, which are not produced in significant quantities in the United States. For some uses, however, the duty-free imports compete directly with domestic spun-silk yarns. The other types imported consist largely of coarser standard spun-silk yarns; these are similar to and compete with their domestic counterparts, particularly in the higher price ranges. In recent years there have been some imports of yarns in chief value of silk fibers but in part of manmade fibers. It is believed that U.S. production of such yarns is of minor importance and that the imports are not seriously competing with the domestic product.

Italy and Japan have alternated as the principal supplier of U.S. imports of spun-silk yarn for a number of years; each year, aggregate imports from these two countries account for more than 90 percent of the total of such imports.

SPUN-SILK YARN

Spun-silk yarn: U.S. production, imports for consumption, and
apparent consumption, 1961-68

Year	: : Production <u>1/</u> : :	: : Imports : :	: : Apparent : : consump- : : tion : :	: : Ratio of : : imports to : : consumption : :
	: : <u>1,000</u> : : <u>pounds</u> : :	: : <u>1,000</u> : : <u>pounds</u> : :	: : <u>1,000</u> : : <u>pounds</u> : :	: : <u>Percent</u> : :
1961-----	2,133 :	331 :	2,464 :	13.4
1962-----	1,302 :	383 :	1,685 :	22.7
1963-----	1,992 :	749 :	2,741 :	27.3
1964-----	2,264 :	270 :	2,534 :	10.7
1965-----	2,615 :	527 :	3,142 :	16.8
1966-----	1,134 :	366 :	1,500 :	24.4
1967-----	339 :	419 :	758 :	55.3
1968-----	1,752 :	525 :	2,277 :	23.1

1/ Estimated from the imports of silk materials used in the manufacture of spun-silk yarn and from the domestic supply of mill thread waste.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Note.--No U.S. export data are available. Exports are estimated to amount to less than 1 percent of production.

<u>Commodity</u>	<u>TSUS item</u>
Yarns wholly of silk, but in part continuous and in part noncontinuous fibers-----	308.55
Yarns in chief value, but not wholly, of silk, except yarns wholly of manmade fibers and noncontinuous silk fibers-----	308.75
Chenille yarns of silk-----	308.80

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

Yarns made from a combination of continuous and noncontinuous silk fibers (item 308.55) and chenille yarns of silk (item 308.80) are generally not important articles of commerce in the United States. However, yarns made from a combination of manmade fibers and continuous silk fibers (included in item 308.75) are becoming important in international trade. U.S. production and imports of these yarns, although small, are increasing somewhat. Exports are negligible.

Description and uses

The only yarns presently of commercial significance covered in item 308.55 are yarns made of a combination of thrown- and spun-silk yarns, usually plied together. 1/ The yarns of commercial significance covered by item 308.75 include combinations of manmade or other fiber yarns and thrown-silk yarns; the item also includes combinations of spun-silk and natural-fiber yarns, and yarns made of blends of such fibers. Item 308.80 covers chenille yarns of silk, a specialty product. 2/ All of the yarns considered here are generally used in the manufacture of wearing apparel, but some blended yarns also have industrial applications, such as covering for electrical wires, and some yarns are used for decorative purposes.

1/ See separate summaries for discussion of thrown-silk yarn (TSUS items 308.30 and 308.35) and spun-silk yarn (TSUS items 308.40 to 308.51 and 308.60 to 308.71).

2/ For definition of chenille yarns, see separate summary on yarns of manmade fibers, not specially provided for, and chenille yarns of manmade fibers (TSUS item 310.60).

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem):

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)	
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
308.55:	Yarns wholly of silk, but in part continuous and in part noncontinuous fibers.	20%	16%	10%
308.75:	Yarns in chief value, but not wholly, of silk, except yarns wholly of noncontinuous silk and manmade fibers.	27.5%	22%	13.5%
308.80:	Chenille yarns of silk.	27.5%	22%	13.5%

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. U.S. concessions amounting to reductions of about 50 percent in the duties were granted in the Kennedy Round on all the items listed above.

U.S. consumption

Of the articles covered by this summary, plied yarns made from thrown-silk yarns and yarns of manmade fibers, plied yarns made from spun-silk yarns and natural-fiber yarns, and yarns made of blends of noncontinuous silk and natural fibers are the principal ones consumed in the United States. U.S. consumption of these yarns in 1967 was

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3:2

estimated to be more than 110,000 pounds, valued at about \$675,000. In recent years, consumption of such yarns has generally been increasing because (1) the high price of silk has induced a partial substitution of blended yarns (containing silk) for all-silk yarns, particularly for some industrial uses, and (2) clothing manufacturers have stimulated consumer demand for fashion apparel of silk blends, thereby increasing the utilization of blended yarns containing silk.

U.S. production and exports

There is little or no U.S. production of yarns made from a combination of continuous and noncontinuous silk. It is believed that chenille yarns of silk are not now being produced in the United States. However, approximately 10 firms, the largest number in Pennsylvania, manufacture one or more of the three principal yarns described in the preceding paragraph, as important parts of their operations. Although a number of additional firms manufacture spun yarns made of blends of silk and wool, these yarns are generally not in chief value of silk.

U.S. output of the three principal yarns is estimated to have been about 80,000 pounds, valued at about \$500,000, in 1967. Exports are negligible.

U.S. imports

Chenille yarns of silk generally are not imported into the United States. Since 1963 when yarns made from a combination of continuous and noncontinuous silk were separately classified in official import statistics (item 308.55), imports have been reported only in 1966 and 1967, as follows:

<u>Year</u>	<u>Quantity</u> <u>(pounds)</u>	<u>Value</u>
1966-----	357	\$2,128
1967-----	33	270

In 1964-68, annual U.S. imports of the three principal yarns ranged from 25,000 pounds, valued at \$132,000; in 1965 to 36,000 pounds, valued at \$182,000, in 1966. From 1961 through 1963, annual imports of such yarns are estimated to have ranged from 13,000 pounds, valued at about \$80,000; in 1963 to 22,000 pounds, valued at \$104,000; in 1961 (table 1).

U.S. imports of the silk yarns covered in this summary have been mainly of plied silk-and-wool yarns from Switzerland and France (table 2). These yarns have been in chief value of silk, and such

yarns are not presently produced in large quantities in the United States; domestic production is principally of plied silk-and-wool yarns in chief value of wool. Imports have been used chiefly in fabrics for ladies' and men's suits. Imports of yarns made from a combination of continuous and noncontinuous silk came from Thailand in 1966 and from the United Kingdom in 1967. These yarns also have been used in apparel fabrics.

Table 1.--Certain silk yarns: U.S. imports for consumption, 1961-68

Year	Quantity		Value	
	1,000 pounds		1,000 dollars	
1961-----	1/	22	1/	104
1962-----	1/	20	1/	107
1963:				
January-August-----	1/	10	1/	60
September-December-----		3		20
Total, 1963-----		13		80
1964-----		30		151
1965-----		25		132
1966-----		36		182
1967-----		30		119
1968-----		31		172

1/ Estimated by U.S. Tariff Commission staff. Data not separately recorded in official statistics.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Note.--For comment concerning U.S. production and exports, see text.

CERTAIN SILK YARNS

Table 2.--Certain silk yarns: U.S. imports for consumption, by sources, 1964-68

Source	1964	1965	1966	1967	1968
	Quantity (1,000 pounds)				
Switzerland-----	21	6	29	19	30
France-----	7	12	3	-	-
United Kingdom-----	-	3	2	<u>1/</u>	-
Italy-----	<u>1/</u>	2	1	<u>1/</u>	<u>1/</u>
Japan-----	1	1	<u>1/</u>	1	1
West Germany-----	-	1	-	10	<u>1/</u>
Thailand-----	-	-	1	-	-
Total, all countries <u>2/</u> -----	30	25	36	30	31
	Value (1,000 dollars)				
Switzerland-----	110	32	146	98	167
France-----	34	66	21	-	-
United Kingdom-----	-	15	9	<u>1/</u>	-
Italy-----	1	7	3	1	<u>3/</u>
Japan-----	7	4	1	4	5
West Germany-----	-	8	-	15	<u>3/</u>
Thailand-----	-	-	2	-	-
Total, all countries <u>2/</u> -----	151	132	182	119	172

1/ Less than 500 pounds.2/ Because of rounding, figures may not add to the totals shown.3/ Less than \$500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS item</u>
Yarns put up for handwork, and sewing threads, of silk-----	308.90

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. consumption and production of silk sewing thread have been declining in recent years, and imports have been unimportant. U.S. consumption of silk handwork yarns is negligible.

Description and uses

Silk sewing threads are made from either thrown- or spun-silk yarns. ^{1/} Those made of thrown-silk yarns are stronger and more elastic, while those of spun-silk yarns are more supple and have less tendency to slide. Thrown-silk sewing threads are used mainly for industrial purposes; spun-silk sewing threads are used principally in dress goods.

Thrown- and spun-silk sewing threads are manufactured in three principal types: Machine twist, a 3-cord sewing thread twisted in the left-hand direction for use on sewing machines; buttonhole twist, also a 3-cord sewing thread but more tightly twisted than machine twist; and sewing silk, usually a 2-cord sewing thread twisted in the right-hand direction.

Machine-twist silk sewing thread is normally used on sewing machines for seaming or stitching operations in manufacturing various articles. Buttonhole-twist silk sewing thread is used for stitching and supporting buttonholes on apparel. Sewing silk is used by custom tailors for careful hand sewing of suits and coats. Silk sewing thread is also used for fastening uppers of boots or shoes, sewing luggage, binding books, and stringing beads; in making orthopedic supplies, electrical insulation, and fishlines; and in dental and surgical applications.

Silk sewing thread has some advantages over thread manufactured from other fibers. It withstands abrasion, usually lasts as long as

^{1/} See separate summaries on thrown-silk yarn (items 308.30 and 308.35) and on spun-silk yarn (items 308.40 to 308.51 and 308.60 to 308.71).

the article on which it is used, has excellent recovery from momentary strain, has good color affinity, and (because of its smooth surface and suppleness) does not cut the material being sewn.

Silk handwork yarns are loosely twisted yarns for hand needlework. They are generally manufactured from spun-silk yarns; however, they are made from softly twisted raw-silk yarns also. ^{1/} Silk handwork yarns are used mainly for darning, knitting, and crocheting.

Special types of sewing and handwork yarns are floss and embroidery silk. Floss silk is a very slackly twisted thread of silk, used principally for decorative purposes. Embroidery silk is a group of slackly twisted singles, doubled and then twisted in the reverse direction, used for embroidery work.

Silk sewing thread is sold mainly to industrial users, especially in the clothing trades, but a small portion enters retail channels for purchase for home sewing. Silk handwork yarn is normally sold to retail outlets for use in the home.

U.S. tariff treatment

The column 1 (trade-agreement) rate of duty applicable to imports (see general headnote 3 in the TSUSA-1969) is as follows (in percent ad valorem):

TSUS item	Commodity	Rate pursuant to		
		Rate : U.S. concessions granted	prior : in 1964-67 trade confer-	
		to : ence (Kennedy Round)	Jan. 1, : Second stage, : Final stage,	
		1968 : effective : effective	Jan. 1, 1969 : Jan. 1, 1972	
308.90:	Yarns put up for handwork,	20%	16%	10%
	and sewing threads, of			
	silk.			

The tabulation above shows the column 1 rate of duty in effect prior to January 1, 1968, and modifications therein as a result of a concession granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade

^{1/} See separate summary on raw silk (items 308.02 to 308.06).

concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rate shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. A concession amounting to a reduction of 50 percent in the duty was granted in the Kennedy Round on the item listed above.

U.S. consumption

U.S. consumption of silk sewing thread, supplied almost entirely by domestic production, declined in each of the years 1962-68 (see accompanying table). In the last few years, because of changes in the relative prices and profit margins of silk products, much of the silk formerly used in the manufacture of sewing thread has been diverted to more profitable uses. Consequently, there has been increased substitution of sewing thread of manmade fibers for silk sewing thread. The substitution has been especially pronounced in the use of nylon sewing thread instead of silk in many industrial applications.

In the United States, silk handwork yarns have been almost entirely replaced by lower priced yarns of natural and of manmade fibers.

U.S. producers

Silk sewing threads are manufactured in the United States by about 12 firms operating 15 establishments, the largest number of them in Pennsylvania and Connecticut. Most firms have from 100 to 500 employees each. The majority of the producers make sewing threads as their only product; generally their output of sewing threads of other fibers, notably manmade, greatly exceeds their output of silk sewing threads. Usually a firm which produces machine-twist sewing thread also produces buttonhole twist. The third type of thread, sewing silk, is usually manufactured with other silk products and not with other types of silk sewing thread.

Fewer than 10 firms in the Middle Atlantic States manufacture silk handwork yarns. Production of these yarns is usually of minor importance to these firms; generally such yarns are produced only on special order.

U.S. production and exports

U.S. production of silk sewing thread and handwork yarns declined from an estimated 352,000 pounds, valued at \$3,840,000, in 1961 to 110,000 pounds, valued at \$1,278,000, in 1968 (see accompanying table). Production of silk sewing thread consists predominantly of machine twist, with buttonhole twist secondary in importance. Production of sewing silk is based primarily on the demand for it by custom tailoring establishments. Domestic output of silk handwork yarns is small and sporadic; it depends mainly on the popularity of home dressmaking.

U.S. exports of silk sewing thread, consisting mostly of machine-twist types, are believed to average from 1 to 3 percent of the domestic output. Exports of silk handwork yarns are negligible or nil.

U.S. imports

Annual U.S. imports of silk sewing thread and silk handwork yarns are very small, and they fluctuate substantially. During 1961-68, such imports reached their peak in 1962, when an estimated 7,000 pounds, valued at \$41,000, was imported. They declined to less than 1,000 pounds, valued at \$2,000, in 1968 (see accompanying table). Imports rarely exceed 3 percent (in some years they have amounted to less than 1 percent) of U.S. consumption of such articles. Imported silk sewing threads are generally of the same type and quality as those produced domestically; normally the imports are lower priced. Imported silk handwork yarns are usually similar to and lower priced than U.S. types. Since 1962, imports have consisted mainly of silk sewing thread, especially the machine- and buttonhole-twist types. They have come principally from Japan, Italy, Switzerland, and Spain.

Yarns put up for handwork, and sewing threads, of silk: U.S. production, imports for consumption, and apparent consumption, 1961-68

(Quantity in thousands of pounds; value in thousands of dollars)

Year	Production <u>1/</u>	Imports	Apparent consump- tion <u>2/</u>	Ratio (percent) of imports to consumption
Quantity				
1961-----	352	<u>3/</u> 1	353	0.3
1962-----	290	<u>3/</u> 7	297	2.4
1963-----	236	<u>3/</u> 5	241	2.1
1964-----	220	1	221	.5
1965-----	182	2	184	1.1
1966-----	175	3	178	1.7
1967-----	125	1	126	.8
1968-----	110	<u>4/</u>	110	.1
Value				
1961-----	3,840	6	3,846	<u>5/</u>
1962-----	3,320	41	3,361	<u>5/</u>
1963-----	2,893	41	2,934	<u>5/</u>
1964-----	2,517	10	2,527	<u>5/</u>
1965-----	2,049	10	2,059	<u>5/</u>
1966-----	2,032	9	2,041	<u>5/</u>
1967-----	1,429	3	1,432	<u>5/</u>
1968-----	1,278	2	1,280	<u>5/</u>

1/ Figures for 1963, from the Census of Manufactures for that year; those for other years estimated from data reported in the Census of Manufactures for 1958 and 1963.

2/ Overstated; does not allow for exports.

3/ Not separately reported in official statistics; estimated by U.S. Tariff Commission staff.

4/ Less than 500 pounds.

5/ Not meaningful.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Note.--U.S. exports are not separately classified in official statistics; however, they are estimated to average from 1 to 3 percent of domestic production.

<u>Commodity</u>	<u>TSUS item</u>
Manmade monofilaments (continuous fibers)-----	309.02, -.03, -.05, -.06

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States is the world's largest producer and consumer of manmade monofilaments. Domestic production has been increasing steadily. Imports usually supplement U.S. output; in 1968, they accounted for 1.0 percent of the quantity of apparent U.S. consumption. Exports are small.

Description and uses

The monofilaments covered in this summary are defined by the TSUS as single filaments (including single filaments of laminated construction or produced from two or more filaments fused or bonded together), whether solid or hollow, whether flat, oval, round, or of any other cross-sectional configuration, which are not over 0.06 inch in maximum cross-sectional dimension (see headnote 3(b) of subpart E of schedule 3).

Monofilaments are extruded individually from spinnerets. The shapes of the holes in the spinnerets from which filaments are extruded generally determine the cross sections. Monofilaments can be modified by controlling the flow of the polymer during extrusion to form specialized types such as slub, crepe, crimp, and thick-and-thin.

Monofilaments can be extruded in very fine deniers 1/ for manufacture into exceptionally sheer fabrics. They can also be stiff (especially in the heavy deniers) when cut to short lengths, a desirable property for making bristles. Monofilaments also have toughness, a property necessary when abrasion is severe. Other properties some monofilaments may have are elasticity (for stretch fabrics) and pliability (for knitting purposes).

1/ Denier is the weight in grams for a length of 9,000 meters.

Virtually all manmade fibers can be made in the form of monofilaments. In 1968, U.S. commercial production of monofilaments consisted of nylon, olefin, spandex, saran, rayon, polyester, vinyon, and fluorocarbon fibers. ^{1/} The weights of monofilaments range from 7 deniers to more than 20,000 deniers. For some purposes, monofilaments are measured by their cross-sectional dimensions, which generally range from 4 mils (.004 inch) to 60 mils (.06 inch). This measurement is particularly useful for selecting monofilaments that are to be cut into bristles, in which weight is unimportant and degree of thickness is important. Most monofilaments are manufactured in first or standard grades; however, some are also made as seconds or sub-standard grades.

Monofilaments may be shipped on beams or beamettes, bobbins, cones, pirns, spools or warp spools, and tubes. In general, monofilaments in the finer deniers are shipped on bobbins, pirns, or spools, and those in the heavier deniers, on spools or disposable paper tubes. The price per pound is higher for rayon monofilaments if shipped on spools or tubes than if shipped on cones, for nylon monofilaments if shipped on beams than on bobbins and on spools than on pirns, and for spandex monofilaments if shipped on warp spools than on tubes.

^{1/} Except for fluorocarbon fibers, these fibers are defined and given generic recognition under the Textile Fiber Products Identification Act of 1960. Fluorocarbon fibers are manufactured from tetrafluoroethylene and hexafluoropropylene polymers.

Monofilaments are used in apparel, home furnishings, and other consumer types of products, and for industrial and military uses. The tabulation below outlines the principal uses of monofilaments when more than one type of fiber is utilized:

Principal use	Type of fiber <u>1/</u>								
	R	N	S	O	F	SP	P	V	
Apparel:	:	:	:	:	:	:	:	:	
Crinoline fabrics-----	X	X	:	:	:	:	:	:	
Hosiery-----	:	X	:	:	:	X	:	:	
Home furnishings:	:	:	:	:	:	:	:	:	
Decorative fabrics-----	X	:	X	X	:	:	:	:	
Upholstery-----	X	:	X	X	:	:	:	:	
Draperies-----	X	:	X	X	:	:	:	:	
Table and place mats-----	X	:	X	:	:	:	:	:	
Curtains-----	:	X	X	:	:	:	:	:	
Scouring pads-----	:	X	X	:	:	:	:	:	
Rugs-----	:	X	X	:	:	:	:	:	
Outdoor and indoor furniture-----	:	:	X	X	:	:	:	:	
Other consumer types of products:	:	:	:	:	:	:	:	:	
Braids-----	X	X	:	X	:	:	:	:	
Shoe fabrics-----	X	X	X	X	:	X	:	:	
Brushes-----	:	X	:	:	X	:	X	:	
Narrow fabrics-----	:	:	:	X	:	X	:	:	
Luggage and handbags-----	X	:	X	X	:	:	:	:	
Industrial uses:	:	:	:	:	:	:	:	:	
Filter cloths-----	:	X	X	X	:	:	:	X	
Paintbrushes-----	:	X	:	:	X	:	X	:	
Surgical sutures-----	:	X	:	:	X	:	:	:	
Automobile seat covers-----	:	:	X	X	:	:	:	:	
Commercial transportation	:	:	:	:	:	:	:	:	
upholstery-----	:	:	X	X	:	:	:	:	
	:	:	:	:	:	:	:	:	

1/ R--rayon, N--nylon, S--saran, O--olefin, F--fluorocarbon, SP--spandex, P--polyester, V--vinyon.

The tabulation illustrates competition for certain products even among various manmade monofilaments.

Some manmade monofilaments, however, have specialized uses in which they generally do not compete with other manmade fibers but do often compete with other textile fibers. Rayon monofilaments are used in interlining cloth for clothing; nylon monofilaments, for lingerie, sleepwear, and bouffant petticoats; saran, for work clothing; olefin, for women's hats; and spandex, for foundation garments, swimwear, and

sportswear. In home furnishings, rayon monofilaments are utilized in casement cloths; nylon, in brooms and haircloth; saran, in insect and other screening, lamp shades, and grille cloth for television and high fidelity sets; and olefin, in carpet backing. Rayon monofilaments have specialized uses in millinery ribbon and wigs for dolls and mannequins; nylon, in racket strings, fishlines, leaders, lures, toys, and hat reeds; and olefin, in webbings. For industrial purposes, nylon monofilaments are used in tire chafer cloth, sewing thread, fish netting, musical instruments, and polishing and grinding pads and wheels. Saran monofilaments are utilized industrially for automobile upholstery, heavy open-mesh cloths, screening, shade cloth, wall coverings, hospital crucible cloths, and outdoor carpets. Olefin monofilaments have special cordage and rope applications. Fluorocarbon monofilaments have their principal industrial use in chemical equipment where service life is important, such as diaphragms and vacuum filters, and in equipment for chemical distillation and gas demisting. The military services use olefin monofilaments in tow target fabrics and for various defense purposes; they also use fluorocarbon monofilaments in making protective suits for use in missile operations.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate pursuant to U.S. concessions granted in 1964-67 trade confer- ence (Kennedy Round)		
		Rate prior to Jan. 1, 1968	Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Monofilaments (in continuous form):			
	Not over 150 denier:			
309.02:	Valued not over 80 cents per pound.	40¢	32¢	20¢
309.03:	Valued over 80 cents per pound.	50%	40%	25%
	Over 150 denier:			
309.05:	Valued not over 85 cents per pound.	30¢	24¢	15¢
309.06:	Valued over 85 cents per pound.	35%	28%	17.5%

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Concessions amounting to reductions of 50 percent in the duties were granted by the United States on all the items covered here.

The average ad valorem equivalents of the specific rates of duty in effect prior to January 1, 1968, and on January 1, 1972, based on the value of dutiable imports in 1968, were as follows (in percent):

TSUS item	Average ad valorem equivalent of--	
	Rate prior to Jan. 1, 1968	Final stage of Kennedy Round, Jan. 1, 1972
309.02-----	81.6	40.8
309.05-----	39.0	19.5

A monofilament having a slight twist of about one turn per inch is known commercially as a filament yarn. Because of this commercial designation, the U.S. Bureau of Customs has classified such twisted filament as a yarn. However, in 1959 the Bureau of Customs ascertained that it was not the congressional intent to so classify such monofilament and changed its practice by reclassifying such merchandise as filaments. 1/

U.S. consumption

U.S. consumption of manmade monofilaments increased steadily from 26 million pounds, valued at \$101 million, in 1961 to 144 million pounds, valued at \$302 million, in 1968 (table 1). Such consumption consists mainly of nylon, olefin, and spandex monofilaments. U.S. production furnishes almost all the consumption of olefin and spandex monofilaments, but imports supply a small part of the consumption of nylon monofilaments. Consumption consists principally of nylon

1/ Customs Information Exchange 1649/59, dated Dec. 14, 1959.

monofilaments used in women's hosiery, nylon and olefin monofilaments used as brush bristles, and spandex monofilaments used in stretch fabrics.

U.S. consumption of manmade monofilaments has expanded because of new applications, increasing acceptability, decreasing prices, and effective substitution for other fibers. Rayon monofilaments were introduced into wigs, which have recently become fashionable. Nylon monofilaments became commercially significant when artificial grafts became practical with advanced medical technology. The exceptional heat resistance of fluorocarbon monofilaments make them suitable as protective devices for space exploration where extreme heat and electricity are encountered. Manmade monofilaments gained acceptance when it was found that articles made from them last longer, look better, and perform more efficiently than similar articles from other fibers. Consumption of manmade monofilaments was encouraged when prices continued to decline, as shown in the following tabulation for selected important types:

Type of monofilament	: Year and price : Current (1969)	
	: per pound 1/	: price per pound 1/
15 denier nylon semidull-----	1958 - \$5.25 :	\$2.74
30 denier nylon semidull-----	1960 - 4.13 :	2.86
375 denier polypropylene-----	1961 - .90 :	.69
1100 denier flat saran, white----	1961 - .95 :	.83
:	:	:

1/ List prices from Modern Textiles Magazine.

Consumption of manmade monofilaments was also stimulated when such monofilaments were effectively substituted for other materials in certain articles. Examples include nylon for silk in hosiery; nylon and rayon for horsehair; spandex for natural rubber in stretch fabrics; rayon, nylon, and oléfin for leather in luggage and handbags; and nylon, fluorocarbon, and polyester for pig bristles in brushes.

U.S. producers

Manmade monofilaments are manufactured in the United States by 36 firms operating 52 plants. Almost half of the plants are situated in the South Atlantic States, especially South Carolina and Virginia. More than a fourth of the plants are in the Middle Atlantic States, the largest number in New Jersey.

The majority of the firms are large corporations or subsidiaries thereof. Some of the leading firms have subsidiaries and interests in manmade fibers in 15 foreign countries; most of these foreign

affiliates also manufacture monofilaments. Foreign corporations have two subsidiaries producing monofilaments in the United States. Of the large U.S. corporations extruding monofilaments, five firms are known primarily as chemical and five as textile companies, four are diversified with no particular product identification, three are noted for cordage, and two for the manufacture of rubber products. Other large domestic corporations are known for the production of petroleum products, jute rug backing, sporting goods, rocket engines, and automotive parts.

Most of the plants producing monofilaments also manufacture other textile articles. For many of these plants, monofilaments are an important source of income, but for the few plants producing articles completely unrelated to monofilaments the articles other than monofilaments are more important sources of income. Four plants are believed to manufacture only monofilaments.

Four-fifths of the plants produce only one type of manmade monofilament. Many of these plants may also produce yarns made from fibers of the same material as the monofilaments; however, only a few plants make two or more types of manmade monofilaments. The yarns are usually a more important source of income for a plant than the monofilaments. Plants making olefin monofilaments are situated principally in New York and South Carolina; plants making nylon, in the South Atlantic States; those making spandex, in Rhode Island, North Carolina, and Virginia; and those making saran, in the South Atlantic States. Rayon, polyester, and vinyon monofilaments are manufactured in six Eastern States, and fluorocarbon monofilaments, in one plant in Virginia.

U.S. production

U.S. production of manmade monofilaments increased steadily from 26 million pounds, valued at \$104 million, in 1961 to 145 million pounds, valued at \$307 million, in 1968 (table 1). Very little of the production is used internally by a producing company; almost all is sold directly to the processors of the monofilaments. The composition of U.S. production in 1961, by type of monofilament, is estimated as follows: Nylon, 73 percent; olefin, 15 percent; saran, 7 percent; others, 5 percent. The estimated percentages for 1968 are as follows: Nylon, 37 percent; olefin, 33 percent; polyester, 12 percent; saran, 10 percent; spandex, 7 percent; others, 1 percent. Nylon monofilament production accounted for a decreasing share of the output even though it has consistently increased in quantity since 1961; olefin monofilament production has almost doubled since 1961, thereby increasing its share of the output; production of spandex and polyester monofilaments, very small in 1961, made up an important part of the total

in 1968; and saran monofilament production increased after 1962, but its share of the domestic output did not expand as rapidly as the other types.

U.S. production of monofilaments may be grouped into four weight classes; 7 to 40 deniers, 60 to 100 deniers, 140 to 1,000 deniers, and over 1,000 deniers. The 7-to-40-denier class has the largest output; the over-1,000-denier class, the second largest; the 140-to-1,000-denier, the third largest; and the 60-to-100-denier, the smallest production.

U.S. exports

U.S. exports of manmade monofilaments were estimated to total 1.1 million pounds, valued at \$4.1 million, in 1961. They declined to approximately 700,000 pounds, valued at \$3.1 million, in 1962; after that year, however, they increased steadily until 1966, when they amounted to 2.9 million pounds, valued at almost \$7.8 million (table 1). In 1967, they declined to 2.7 million pounds, valued at almost \$5.8 million; in 1968 they declined further to 2.4 million pounds, valued at \$6.7 million. The exports consisted mainly of rayon monofilaments, shipped principally to Canada, the Netherlands, and Switzerland, and other noncellulosic monofilaments shipped to Switzerland, Canada, and Japan (table 2). U.S. exports generally exceeded imports except for a few years in the early 1960's when manmade monofilaments of the later developed materials had not yet reached consumer acceptance outside the United States. It is believed that the increase in U.S. exports since 1962 is attributable primarily to the new applications and uses of nylon, olefin, and spandex monofilaments.

U.S. imports

Since 1961, U.S. imports of manmade monofilaments have fluctuated considerably. They ranged from 647,000 pounds, valued at \$1.2 million, in 1964 to 2.1 million pounds, valued at \$3.5 million, in 1962 (table 1). Imports increased from 1961 to 1962, but had declined substantially by 1964. In 1965, however, they increased again. Imports of monofilaments provided their greatest share of the U.S. consumption in 1961, 1962, and 1963, when they accounted for 4.2 percent, 5.6 percent, and 3.4 percent, respectively. Since then, however, imports have not exceeded 2 percent of the U.S. consumption of monofilaments.

U.S. imports consist predominantly of 15-denier nylon monofilaments used in the manufacture of women's hosiery. They are generally priced lower than the competitive domestic article. Also imported are vinyl monofilaments for apparel uses, nylon monofilaments for fishing line

and tennis racquets, rayon monofilaments for use as artificial horse-hair, and polyester and nylon monofilaments for brush bristles.

In 1962-65, Italy supplied 80 to 90 percent of the total imports. Italy's exports consist mainly of nylon monofilaments for hosiery. The second largest supplier in 1962-65 was West Germany, but in 1966-68 it ranked first; its principal exports were nylon monofilaments used in fishing lines. In 1965 and 1966 Japan was the third ranking source, but in 1967 and 1968 it became a minor supplier; it furnished lighter denier monofilaments used mostly in apparel. Other important suppliers were Switzerland and France (table 3).

Foreign production and trade

Manmade monofilaments are produced in about 25 foreign countries, half of which have some facilities with active U.S. interests. Approximately 85 foreign firms--a third with functional U.S. participation--operate 100 plants making monofilaments in these countries. The largest number of plants are in Japan, Canada, the United Kingdom, and West Germany. More than half of the 100 plants also manufacture textile products other than monofilaments, and fewer than a sixth of them extrude more than one generic manmade monofilament. Outside the United States, olefin monofilaments are manufactured in more than 50 plants, the largest number in Japan and Canada; nylon monofilaments, in more than 25 plants, the largest number in Italy and West Germany; spandex, in about 20 plants, the largest number in the United Kingdom and Japan; and saran, in about 15 plants, the largest number in Japan and West Germany. Japan also has a number of plants manufacturing vinyon and vinal monofilaments; West Germany has a number producing polyester monofilaments; and Switzerland has a few producing rayon monofilaments.

The foreign firms are mainly large corporations that initially utilize raw materials available in their own countries and supplement these resources with imports, a significant part of which are supplied by the United States. The processes used by these companies for producing monofilaments are virtually the same as those used in the United States and, for the most part, are as efficient although sometimes less advanced technologically. The lower cost of labor in certain countries is relatively unimportant because the production of monofilaments is highly automated and labor costs are only a minor part of the total manufacturing expense.

World production of manmade monofilaments increased from an estimated 60 million pounds in 1961 to about 225 million pounds in 1967. The United States, the world's largest producer, normally accounts for about 40 percent of the output. Other important world

producers are Japan, Italy, West Germany, and the United Kingdom. World production consists mainly of nylon monofilaments; olefin monofilaments are believed to be second in importance. The output also includes significant quantities of saran, spandex, and vinyon monofilaments.

The leading world exporters of monofilaments are Italy, West Germany, the United States, the United Kingdom, and Japan. Exports from these countries are generally increasing, with Japan showing the greatest increase and West Germany and Italy not far behind. Italy exports principally the monofilaments for hosiery, West Germany, those for brush bristles; and Japan, those for fishing equipment. The leading world importers of monofilaments are West Germany, the United Kingdom, France, Sweden, South Africa, and India. Although the trend of imports of monofilaments into these countries is upward, the countries, except for the last three named, are on an export basis for monofilaments.

Table 1.--Manmade monofilaments: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1961-68

(Quantity in thousands of pounds; value in thousands of dollars)						
Year	Production ^{1/}	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption	
Quantity						
1961-----	26,362	^{2/} 1,102	^{3/} 1,054	26,410	4.2	
1962-----	35,516	^{2/} 2,051	^{3/} 710	36,857	5.6	
1963-----	41,769	^{2/} 1,422	^{3/} 835	42,356	3.4	
1964-----	52,425	647	^{3/} 1,048	52,024	1.2	
1965-----	67,489	^{2/} 1,134	2,620	66,003	1.7	
1966-----	81,425	^{2/} 1,597	2,854	80,168	2.0	
1967-----	96,223	1,158	2,665	94,716	1.2	
1968-----	144,523	1,457	2,422	143,558	1.0	
Value						
1961-----	103,612	^{2/} 1,797	^{3/} 4,144	101,265	^{4/}	
1962-----	153,111	^{2/} 3,518	^{3/} 3,062	153,567	^{4/}	
1963-----	173,940	^{2/} 2,531	^{3/} 3,479	172,992	^{4/}	
1964-----	210,400	1,203	^{3/} 4,208	207,395	^{4/}	
1965-----	203,304	^{2/} 1,727	6,966	198,065	^{4/}	
1966-----	221,108	^{2/} 2,340	7,771	215,677	^{4/}	
1967-----	241,006	1,547	5,787	236,766	^{4/}	
1968-----	307,350	1,775	6,686	302,439	^{4/}	

^{1/} Quantity estimated from Textile Organon figures; value estimated from list prices published in Modern Textiles Magazine for monofilaments.

^{2/} For 1961, includes 7 thousand pounds, valued at 17 thousand dollars, imported free for manufacture in bonded warehouse and export; for 1962, 47 thousand pounds, valued at 83 thousand dollars; for 1963, 40 thousand pounds, valued at 78 thousand dollars; for 1965, 15 thousand pounds, valued at 24 thousand dollars; and for 1966, 26 thousand pounds, valued at 30 thousand dollars.

^{3/} Estimated.

^{4/} Not meaningful.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

MANMADE MONOFILAMENTS (CONTINUOUS FIBERS)

Table 2.--Manmade monofilaments: U.S. exports of domestic merchandise, by principal markets, 1965-68

Market	1965	1966	1967	1968
Quantity (1,000 pounds)				
Canada-----	989	749	703	485
Netherlands-----	425	531	203	130
Japan-----	19	148	97	71
Venezuela-----	125	255	279	225
Switzerland-----	13	15	79	440
Mexico-----	151	153	56	90
Belgium and Luxembourg-----	13	18	251	243
France-----	77	55	212	25
United Kingdom-----	59	64	95	109
Spain-----	-	7	130	6
Australia-----	71	72	96	52
Republic of South Africa-----	9	22	74	32
Argentina-----	36	31	26	47
Brazil-----	2	39	72	83
West Germany-----	35	25	49	88
All other-----	1/ 596	2/ 670	243	296
Total-----	2,620	2,854	2,665	2,422
Value (1,000 dollars)				
Canada-----	2,008	1,506	1,327	1,187
Netherlands-----	2,025	2,442	833	458
Japan-----	63	768	514	352
Venezuela-----	128	255	381	228
Switzerland-----	36	15	335	1,823
Mexico-----	385	477	332	481
Belgium and Luxembourg-----	35	65	298	263
France-----	339	305	297	110
United Kingdom-----	208	229	247	296
Spain-----	-	14	156	32
Australia-----	170	136	128	75
Republic of South Africa-----	37	55	127	95
Argentina-----	120	92	121	231
Brazil-----	14	91	107	235
West Germany-----	140	84	90	186
All other-----	1/ 1,258	2/ 1,237	494	634
Total-----	6,966	7,771	5,787	6,686

1/ Includes 296 thousand pounds, valued at 555 thousand dollars, exported to South Viet-Nam.

2/ Includes 289 thousand pounds, valued at 526 thousand dollars, exported to South Viet-Nam.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 3.--Manmade monofilaments: U.S. imports for consumption, by principal sources, 1962-68

Source	1962	1963	1964	1965	1966	1967	1968
Quantity (1,000 pounds)							
West Germany--	94	176	85	271	704	732	1,052
Italy-----	1,882	1,189	553	587	420	379	328
Switzerland---	20	5	8	44	30	19	6
France-----	<u>1</u>	1	<u>1</u>	18	74	11	19
Japan-----	1	1	<u>1</u>	176	359	3	9
All other-----	54	50	1	38	10	14	43
Total-----	2,051	1,422	647	1,134	1,597	1,158	1,457
Value (1,000 dollars)							
West Germany--	155	309	183	396	1,120	989	1,210
Italy-----	3,249	2,151	1,003	965	544	468	385
Switzerland---	34	8	11	61	53	47	9
France-----	1	1	2	27	112	22	38
Japan-----	2	2	<u>2</u>	252	488	6	23
All other-----	77	60	4	26	23	15	110
Total-----	3,518	2,531	1,203	1,727	2,340	1,547	1,775
<u>1/</u> Less than 500 pounds.							
<u>2/</u> Less than \$500.							

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS item</u>
Plexiform filaments-----	309.10
Strips, except grouped-----	309.20, -.21, -.25
Grouped strips, grouped laminated filaments, and grouped plexiform filaments-----	309.35

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. consumption of the products covered by this summary had an estimated value of more than \$5 million in 1968. Consumption consisted mainly of domestically produced narrow slit types of strips which were not grouped. In 1968, U.S. imports accounted for less than 1 percent of consumption. U.S. exports, mostly narrow slit types of strips, are small. Plexiform filaments and grouped strips and laminated filaments are not commercially important.

Description and uses

This summary covers manmade plexiform filaments (item 309.10) and strips in continuous form suitable for the manufacture of textiles. The strips are limited to those over 0.06 inch but not over 1 inch in width and not over 0.01 inch in thickness. Strips may be laminated (item 309.25), not laminated (items 309.20 and 309.21), or grouped (item 309.35). Also included in item 309.35 are grouped laminated filaments and grouped plexiform filaments. 1/

Plexiform filaments embrace flexible filaments each of which consists of a network or plexus of fine fibers. These filaments are still under development and are currently being used only for experimental purposes.

Strips are of two distinct kinds: artificial straw and narrow slit types. Artificial straw is a flat, continuous, ribbonlike extrusion that in its finished form resembles straw. Narrow slit types are made by cutting wide sheets of extruded materials into strips 1 inch or less in width. Two or more extruded sheets or strips that have been fused or caused to adhere together by a bonding substance

1/ See separate summary for grouped manmade filaments, not laminated (items 309.28 to 309.31).

are considered laminated. Grouped strips are two or more strips substantially parallel and not twisted together. The materials used for extrusion into sheets or strips may be of any thermoplastic composition, but it is believed that the principal types consist of cellulose, vinyl, and olefin derivatives. Domestically produced artificial straw is of minor importance and appears to be mainly extruded polymers composed of rayon, vinyl, olefin, or some polyamide materials.

Artificial straw is used in the manufacture of millinery braids; in circular knit fabrics for women's dresses, skirts, and sportswear; in woven and knit shoe fabrics; in upholstery, curtain, and automotive fabrics; and in handbags, belts, hats, and lampshades.

Narrow slit strips are used in the manufacture of metallic yarns; for novel effects in woven and knitted fabrics; in work clothing; in drapery and upholstery fabrics; and in luggage, millinery, braids, gift-tying ribbons, place mats, and artificial Christmas trees. Narrow slit strips are utilized in tobacco shade cloth, interior automobile decorative trim, industrial hose, power transmission and conveyor belting, electrical insulation tapes, and pull tapes to open cigarette, cigar, cracker, gum, and other packages and wrappers.

Laminated strips are used in narrow slit tapes of all kinds, in electrical insulation, and in the manufacture of certain novelty items.

Grouped strips, grouped laminated filaments, and grouped plexiform filaments are not commercially important.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate pursuant to U.S. concessions granted in prior 1964-67 trade confer- to ence (Kennedy Round)		
		Jan. 1, 1968	Second stage, effective	Final stage, effective
		Jan. 1, 1969	Jan. 1, 1972	
309.10:	Plexiform filaments-----	25¢ + 30%	20¢ + 24%	12¢ + 15%
	Strips, except grouped:			
	Not laminated:			
309.20:	Valued not over \$1 per lb.	25¢	20¢	12.5¢
309.21:	Valued over \$1 per lb---	25%	20%	12.5%
309.25:	Laminated-----	25¢ + 30%	20¢ + 24%	12.5¢ + 15%
309.35:	Grouped strips, grouped	25¢ + 30%	20¢ + 24%	12¢ + 15%
	laminated filaments, and			
	grouped plexiform fila-			
	ments.			

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Concessions amounting to reductions of about 50 percent in the duties were granted by the United States in the Kennedy Round on all the items covered here.

The average ad valorem equivalents of the specific and compound rates of duty in effect prior to January 1, 1968, and on January 1, 1972, based on the value of dutiable imports in 1968, were as follows (in percent):

TSUS item	Average ad valorem equivalent of--	
	Rate prior to Jan. 1, 1968	Final stage of Kennedy Round, Jan. 1, 1972
309.10-----	32.4	16.2
309.20-----	38.0	19.0
309.25-----	<u>1/</u> 32.5	<u>1/</u> 16.2
309.35-----	<u>1/</u> 172.3	<u>1/</u> 83.3

1/ Based on imports in 1967; there were no imports in 1968.

U.S. consumption

U.S. consumption of merchandise covered by this summary consists almost entirely of ungrouped strips. Strips cut from large extruded sheets are obtained mainly from domestic sources, while artificial straw, consumption of which is small, is furnished primarily by imports. U.S. consumption of the strips considered here increased from 5.9 million pounds, valued at \$3.0 million, in 1961 to 10.9 million pounds, valued at \$5.3 million, in 1968 (see accompanying table). Narrow slit types accounted for most of the increase (from about 85 percent of the quantity consumed in 1961 to about 97 percent in 1968). U.S. consumption of artificial straw has declined because of changes in fashion and the growing availability of lower priced narrow slit strips. There is a residual demand for artificial straw, however, because it is preferred in certain applications. Domestic consumption of strips has expanded since 1961 mostly because of the many new uses being developed for them, such as pull tapes for packaged articles, apparel fabrics, electrical insulation, and artificial Christmas trees.

U.S. producers

Approximately 40 U.S. firms manufacture the strips considered herein. Their plants are situated mainly in Illinois, New Jersey, New York, Pennsylvania, and Massachusetts. Almost all the firms produce the strips by cutting large extruded sheets. About a third make the sheets and slit them for sale as strips. The rest purchase the sheets from extruders and either slit them for resale (custom slitters) or cut them for their own use. Strips are an important source of income for some of the firms that extrude sheets and slit them for sale; they are the principal source of income for most of the custom slitters.

U.S. production and exports

U.S. production of strips has increased irregularly from an estimated 5.9 million pounds, valued at \$3.0 million, in 1961 to 11.0 million pounds, valued at \$5.3 million, in 1968 (see accompanying table). U.S. exports--mostly narrow slit strips shipped on rolls--are relatively unimportant and have averaged about 2 percent of production since 1962.

U.S. imports

In 1961-68, U.S. imports ranged from 364,000 pounds, valued at \$303,000, in 1965 to 92,000 pounds, valued at \$96,000, in 1968 (see accompanying table). Imports reached 4.3 percent of the quantity consumed in 1965, but accounted for less than 1 percent in 1968. Prior to 1965, imports consisted mainly of artificial straw extruded from rayon and nylon polymers; but in 1966 and 1967, the imports were predominantly narrow slit types of strips. In 1968, however, they were again largely artificial straw. Imported artificial straw has an appreciable price advantage over its domestic counterpart, but imported narrow slit strips have little or no price advantage. Usually there are no imports of laminated strips, grouped laminated filaments, or grouped plexiform filaments, but in 1967 a small quantity of imported laminated strips and in 1968 some imported grouped laminated filaments appeared in the U.S. market. In addition, a small quantity of grouped strips from the United Kingdom entered in 1964, and a large amount (73,000 pounds, valued at \$12,000) from Austria was recorded in 1967.

Artificial straw has been imported principally from Switzerland and Canada, whereas narrow slit strips have been imported from Japan, India and the Netherlands.

MANMADE PLEXIFORM FILAMENTS AND STRIPS

Manmade plexiform filaments and strips: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1961-68

(Quantity in thousands of pounds; value in thousands of dollars)						
Year	Production <u>1/</u>	Imports	Exports <u>2/</u>	Apparent consumption	Ratio (percent) of imports to consumption	
Quantity						
1961-----	5,911	183	236	5,858	3.1	
1962-----	7,329	223	147	7,405	3.0	
1963-----	6,640	149	133	6,656	2.2	
1964-----	7,167	240	143	7,264	3.3	
1965-----	8,183	364	164	8,383	4.3	
1966-----	9,615	158	192	9,582	1.7	
1967-----	9,633	211	193	9,651	2.2	
1968-----	11,032	92	221	10,903	.8	
Value						
1961-----	2,971	193	120	3,044	<u>3/</u>	
1962-----	3,679	194	73	3,800	<u>3/</u>	
1963-----	3,172	164	63	3,273	<u>3/</u>	
1964-----	3,411	231	68	3,574	<u>3/</u>	
1965-----	3,871	303	78	4,096	<u>3/</u>	
1966-----	4,577	145	91	4,632	<u>3/</u>	
1967-----	4,450	134	89	4,495	<u>3/</u>	
1968-----	5,339	96	107	5,328	<u>3/</u>	

1/ Estimated from official statistics of the U.S. Department of Commerce.

2/ Estimated from production figures and based on export trend.

3/ Not meaningful.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

<u>Commodity</u>	<u>TSUS</u> <u>item</u>
Grouped glass filaments-----	309.28, -.29
Other grouped manmade filaments-----	309.30, -.31

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States is the world's largest producer and consumer of grouped manmade filaments. U.S. consumption, valued at about \$714 million in 1968, was supplied almost entirely by domestic production. U.S. exports, valued at about \$18 million in 1968, have been larger than imports for many years. Imports have accounted for less than 1 percent of consumption in every year since 1960.

Description and uses

The products covered by this summary consist of two or more continuous manmade filaments grouped together, with the filaments substantially parallel and untwisted. They do not include filaments that have been subjected to processes such as twisting and untwisting, false twisting, crimping, and curling and are usable as yarns, or filaments that have been subjected to chemical alteration and are usable as yarns. Grouped filaments may be extruded in bicomponent or tricomponent structures and in many other forms, depending on the shape and size of the holes of the spinnerets and the flow control exercised in extruding the polymer.

Grouped manmade filaments generally fall into three categories: Under 15,000 total denier, 1/ over 15,000 total denier, and glass. The first category is sometimes referred to in the trade as zero-twist yarns, the second is known as tow, and the third is called glass roving. 2/ Grouped filaments under 15,000 total denier can be twisted into yarns 3/ or used directly in manufacturing fabrics. Tow is

1/ Denier is the weight in grams for a length of 9,000 meters.

2/ The term "roving" as used here should not be confused with the same term that refers to an intermediate process in the manufacture of spun yarn.

3/ See separate summary on glass yarns, and other yarns wholly of continuous manmade fibers (items 309.98 to 310.21).

normally cut and processed into spun yarn, 1/ whereas glass roving can be converted into continuous or spun strand types of yarn.

Grouped filaments can be made of virtually all manmade fibers. Those commercially important in the United States in 1968 were manufactured from acetate, rayon, acrylic, nylon, olefin, polyester, and glass. 2/ Grouped filaments are extruded in sizes ranging from 30 denier to more than 900,000 total denier. Grouped filaments under 15,000 total denier are generally sold on the same denier basis as yarns or monofilaments, i.e., in total deniers; however, tow is marketed on the same basis as staple fiber, 3/ i.e., in deniers per filament. Size of glass roving is usually specified in yards per pound. All sizes of grouped filaments are produced in first or standard grade; however, some sizes are also made as seconds or substandard grades.

Grouped filaments enter into fabrics for a variety of apparel, home furnishings, and industrial uses.

The major applications of tow include cutting into staple fiber and flock and use in intermediate textile-processing methods referred to as tow-to-top and tow-to-sliver systems. 4/ A significant amount of acetate tow is used in cigarette filters.

1/ See separate summary on spun yarn of manmade fibers (items 310.40 and 310.50).

2/ All the fibers named here are defined and given generic recognition under the Textile Fiber Products Identification Act of 1960.

3/ See separate summary on staple and other cut filaments of manmade fibers (items 309.41 to 309.66).

4/ See separate summary on manmade fibers processed but not spun (items 309.80 and 309.90).

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate pursuant to U.S. concessions granted in prior to 1964-67 trade confer- ence (Kennedy Round)		
		Jan. 1, 1968	Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Grouped filaments of glass:			
309.28:	Not colored-----	21%	16.5%	10.5%
309.29:	Colored-----	30%	24%	15%
	Grouped filaments of other manmade fibers:			
309.30:	Valued not over 80¢ per lb.	17¢	13.5¢	8.5¢
309.31:	Valued over 80¢ per lb---	21%	16.5%	10.5%

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Concessions amounting to a reduction of 50 percent in duties were granted by the United States on all the items listed above.

The average ad valorem equivalent of the specific rate of duty in effect on item 309.30 prior to January 1, 1968, based on the value of dutiable imports in 1968, was 37.2 percent.

U.S. consumption

U.S. consumption of the grouped filaments discussed here (excluding captive production) increased from a little more than 126 million pounds, valued at about \$118 million, in 1961 to almost 617 million pounds, valued at about \$714 million, in 1968 (see table 1). The grouped filaments that enter trade channels consist almost equally of

those under 15,000 total denier and those of tow. The fibers that dominate the consumption of grouped filaments under 15,000 total denier are rayon, nylon, and polyester, whereas those that prevail in the consumption of tow are rayon, acetate, and polyester. U.S. production accounts for almost all of the consumption, but some imports furnish appreciable quantities of grouped filaments for tire cord and cigarette filters.

The increasing use of grouped filaments in direct spinning and in tow-conversion processes has been one of the major reasons for the expansion of U.S. consumption of grouped filaments. Another is the variety of uses being developed for glass roving. Also important are the continuing penetration of the tire cord market by nylon, rayon, and polyester grouped filaments and the development of the electrostatic process for utilizing flock cut from grouped filaments for napped surface effects on fabrics. Consumption has also been stimulated by domestic price reductions.

U.S. producers

The grouped filaments covered by this summary are produced in the United States by 23 firms operating 52 plants. More than three-fifths of the plants are situated in the South Atlantic States, the largest number in South Carolina and Virginia. Other States having a number of such plants are Tennessee, North Carolina, and West Virginia. The largest number of plants making nylon grouped filaments are situated in South Carolina and Virginia, and the largest number of those manufacturing polyester and rayon grouped filaments, in Tennessee. Acetate, acrylic, and olefin grouped filaments are produced principally in the Southern States. Glass roving is manufactured in nine States, most of which are east of the Mississippi River.

All the firms producing grouped filaments are large companies or subsidiaries thereof. About half of them have subsidiaries and interests in manmade fibers in 20 foreign countries. All of these foreign affiliates manufacture grouped filaments. A foreign corporation has a subsidiary producing grouped filaments in the United States. Of the domestic firms extruding grouped filaments, five are known primarily as chemical firms and four as glassmaking companies. Four are diversified, with no particular product identification; three are noted for textiles; and two, for the manufacture of rubber products. Other firms are known mainly for their manufacture of petroleum, photographic, ceramic, and asbestos products.

All but one of the plants producing grouped filaments also manufacture other textile articles. The other products are usually yarn or staple of manmade fibers. Only one plant depends on grouped filaments for the major share of its income, but some plants rely on such

filaments for an important part of their total sales. More than half of the plants manufacture grouped filaments of one generic type of manmade fiber; the rest produce grouped filaments of more than one generic type of manmade fiber. Most of the plants manufacture other textile products from the same generic fiber, and only a few make textile products from two or more generic fibers.

U.S. production

U.S. production of grouped filaments actually entering commerce increased from almost 130 million pounds, valued at \$121 million, in 1961 to more than 650 million pounds, valued at \$731 million, in 1968 (table 1). U.S. production of grouped filaments under 15,000 total denier approximately equals that of tow, and glass roving production is equivalent to about a fifth of either.

U.S. exports

U.S. exports of grouped manmade filaments increased from an estimated 3.6 million pounds, valued at \$2.9 million, in 1961 to 36.4 million pounds, valued at \$18.4 million, in 1968 (table 1). In 1965-67, exports were principally acrylic and modacrylic grouped filaments; next in importance were polyester and acetate grouped filaments. In 1968 the leading exports were acetate grouped filaments, followed by acrylic or modacrylic and polyester grouped filaments.

The principal foreign markets in 1965 were the Netherlands, Canada, Australia, the Republic of South Africa, Mexico, and the U.S.S.R., in that order (table 2). In 1968 the principal ones, in order of importance, were Switzerland, Belgium and Luxembourg, Canada, the United Kingdom, the Republic of Korea, and Australia.

Since 1965, acrylic and modacrylic grouped filaments have been shipped mainly to Spain, Mexico, the Netherlands, and Switzerland; acetate grouped filaments, to Australia, the Philippines, the Republic of Korea, the United Kingdom, Belgium and Luxembourg, and Argentina; nylon grouped filaments, to Canada; and viscose and cuprammonium grouped filaments, to Venezuela, New Zealand, and Iran.

U.S. imports

In 1961-68, annual U.S. imports of grouped manmade filaments fluctuated from 102,000 pounds, valued at \$102,000, in 1961 to 2.7 million pounds, valued at \$1.3 million, in 1968 (table 1). They were equivalent to less than 1 percent of annual U.S. production or consumption in that period.

Imports have been mainly rayon grouped filaments for use as tire cord, offgrade nylon grouped filaments for use in apparel, and acetate tow for use in cigarette filters. Imports of all three types are lower in price than the similar competitive domestic products. None of these imports have seriously penetrated the U.S. market for such articles as yet; however, their importation has aroused some concern in the domestic industry.

The imports are insignificant for the following reasons: (1) The imported grouped filaments under 15,000 total denier have yet to reach the quality demanded by domestic users; (2) the imported grouped filaments under 15,000 total denier are unable to compete successfully with similar domestic products because of servicing, availability, and delivery advantages enjoyed by the U.S. manufacturers; (3) the grouped filaments over 15,000 total denier (tow) can be shipped more cheaply if cut into staple fiber; and (4) the rate of duty on staple fiber is about half of that on tow.

West Germany, Japan, and Canada have been the principal suppliers of imported grouped filaments (table 3). West Germany generally exports offgrade nylon grouped filaments under 15,000 total denier to the United States, whereas Canada normally ships tire cord and acetate tow for cigarette filters. Japan usually exports acrylic tow, and the Netherlands exports glass roving to the United States.

Foreign production and trade

Grouped manmade filaments (exclusive of those cut into staple) are manufactured in about 375 plants in 45 foreign countries. There are U.S. operating interests in half of these countries but in only a seventh of the plants. There are approximately 300 foreign companies; about a fifth of them have functional U.S. participation. About a third of the plants produce more than one type of grouped filaments and also manufacture other textile products from more than one type of manmade fiber. In general, a foreign plant that manufactures grouped filaments under 15,000 total denier of one generic type of manmade fiber also makes yarns of the same generic fiber. Similarly, a plant that ships grouped filaments known as tow also ships staple made from the same generic fiber as the tow.

Italy, France, the U.S.S.R., Japan, and India have the largest number of plants manufacturing viscose grouped filaments under 15,000 total denier. The U.S.S.R., the United Kingdom, and Japan have the largest number of plants for making acetate grouped filaments in the same denier category; the U.S.S.R., Italy, West Germany, and India, for making nylon grouped filaments; Japan, for making olefin; and West Germany and Japan, for making polyester. Japan and Italy have the largest number of plants for producing viscose tow, and Japan,

for producing acetate tow. Half of the foreign plants manufacturing glass roving are in Japan, mainland China, East Germany, and Italy; moreover, almost a fifth of the foreign plants producing glass roving are functionally controlled by U.S. interests. The other foreign plants making grouped filaments have no particular concentration but are scattered in many countries throughout the world.

Foreign world production of grouped manmade filaments was estimated to be more than 1 billion pounds in 1967. The output was predominantly of grouped filaments under 15,000 total denier, especially those made of nylon and viscose. The leading foreign producing countries were Japan, West Germany, the United Kingdom, the U.S.S.R., and Italy. The principal importing countries in 1967, other than the United States, were believed to be mainland China, West Germany, the U.S.S.R., Belgium, the United Kingdom, and the Republic of South Africa. Leading foreign exporting countries in the same year were probably West Germany, Japan, Italy, the United Kingdom, France, and the Netherlands.

Table 1.--Grouped manmade filaments: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1961-68

Year	Production 1/	Imports	Exports	Apparent consumption
	Quantity (1,000 pounds)			
1961-----	129,800	102	2/ 3,634	126,268
1962-----	161,800	435	2/ 5,663	156,572
1963-----	212,300	347	2/ 5,095	207,552
1964-----	254,400	1,923	2/ 8,395	247,928
1965-----	333,500	1,308	16,807	318,001
1966-----	388,200	826	14,913	374,113
1967-----	453,600	1,063	27,739	426,924
1968-----	650,400	2,718	36,434	616,684
	Value (1,000 dollars)			
1961-----	121,042	102	2/ 2,925	118,219
1962-----	139,765	232	2/ 4,355	135,642
1963-----	184,418	314	2/ 3,933	180,799
1964-----	230,357	1,097	2/ 6,632	224,822
1965-----	290,688	642	12,983	278,347
1966-----	376,044	308	10,706	365,646
1967-----	521,252	505	16,994	504,763
1968-----	731,228	1,332	18,438	714,122

1/ Quantity is estimated partly from Textile Organon figures and partly from official statistics of the U.S. Department of Commerce; value is estimated partly from published list prices per pound for tow or grouped filaments in Modern Textiles Magazine and partly from official statistics of the U.S. Department of Commerce.

2/ Estimated from Textile Organon figures and official statistics of the U.S. Department of Commerce.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 2.--Grouped manmade filaments: U.S. exports of domestic merchandise, by principal markets, 1965-68

Market	1965	1966	1967	1968
	Quantity (1,000 pounds)			
Switzerland-----	474	92	901	9,305
Belgium and Luxembourg-----	1,445	541	1,024	4,693
Canada-----	2,061	1,989	1,273	2,108
United Kingdom-----	404	246	46	2,599
Republic of Korea-----	552	152	1,498	2,618
Australia-----	1,411	1,196	1,198	2,078
Philippines-----	209	850	1,333	1,894
Netherlands-----	5,021	2,163	2,763	2,303
Argentina-----	171	144	1,095	1,549
West Germany-----	1,164	205	338	900
Taiwan-----	128	123	855	968
Mexico-----	790	660	3,285	457
Republic of South Africa-----	673	327	367	782
Spain-----	-	1,454	2,353	435
U.S.S.R-----	877	1,074	6,613	-
All other-----	1,427	3,697	2,797	3,745
Total-----	16,807	14,913	27,739	36,434
	Value (1,000 dollars)			
Switzerland-----	172	52	612	5,169
Belgium and Luxembourg-----	506	164	330	1,770
Canada-----	2,104	1,986	1,240	1,528
United Kingdom-----	186	283	39	1,315
Republic of Korea-----	284	74	644	1,211
Australia-----	1,149	865	683	1,153
Philippines-----	87	371	674	981
Netherlands-----	4,718	1,971	2,145	882
Argentina-----	106	80	559	759
West Germany-----	457	72	221	508
Taiwan-----	65	61	435	473
Mexico-----	727	588	2,269	444
Republic of South Africa-----	921	327	239	343
Spain-----	-	1,427	2,118	239
U.S.S.R-----	680	677	3,486	-
All other-----	821	1,708	1,300	1,663
Total-----	12,983	10,706	16,994	18,438

Source: Compiled from official statistics of the U.S. Department of Commerce.

GROUPED MANMADE FILAMENTS

Table 3.--Grouped manmade filaments: U.S. imports for consumption, by principal sources, 1962-68

Source	1962	1963	1964	1965	1966	1967	1968
Quantity (1,000 pounds)							
West Germany--	39	288	699	93	105	488	955
Japan-----	23	1	18	181	12	198	1,075
Canada-----	10	6	1,048	860	6	119	524
France-----	23	1	1	9	17	56	122
United Kingdom-----	315	2	32	7	44	2	15
Netherlands---	1/	-	-	-	559	195	4
Switzerland---	2	49	118	97	18	-	-
All other-----	23	1/	7	2/ 61	3/ 65	5	23
Total-----	435	347	1,923	1,308	826	1,063	2,718
Value (1,000 dollars)							
West Germany--	45	280	588	74	53	278	533
Japan-----	14	1	12	112	13	97	453
Canada-----	11	6	417	319	5	46	222
France-----	12	1	4/	7	15	30	82
United Kingdom-----	130	2	20	5	18	1	4
Netherlands---	1	-	-	-	137	49	2
Switzerland---	2	23	54	66	18	-	-
All other-----	17	1	6	2/ 59	3/ 49	4	36
Total-----	232	314	1,097	642	308	505	1,332

1/ Less than 500 pounds.

2/ Includes 46 thousand pounds, valued at 39 thousand dollars, imported from Malta.

3/ Includes 53 thousand pounds, valued at 41 thousand dollars, imported from Mexico.

4/ Less than \$500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS item</u>
Noncontinuous manmade fibers, not carded, not combed, and not otherwise processed:	
Coarse nylon filaments-----	309.41
Staple, chopped glass strands, and other filaments of manmade fibers-----	309.43, -.50

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States is the world's leading producer and consumer of the staple and other noncontinuous manmade fibers covered herein. U.S. imports of such fibers fluctuate substantially and in 1961-68 ranged from 6 to 11 percent of annual U.S. consumption. During the same period, exports were equivalent to 2 to 6 percent of annual domestic consumption.

Description and uses

The products covered by this summary consist of noncontinuous manmade fibers, not carded, not combed, and not otherwise processed. The products are manufactured generally by cutting various forms of continuous manmade fibers (usually monofilaments, strips, or grouped filaments) into short lengths. The summary also includes plexiform and laminated filaments in noncontinuous form.

For customs purposes, manmade fibers in noncontinuous form are such fibers not over 30 inches in length. Among the noncontinuous fibers, coarse nylon filaments are covered by item 309.41; strips, plexiform filaments, and laminated filaments are covered by item 309.50; and all other manmade filaments in noncontinuous form are covered by item 309.43. The foregoing fibers may be derived from the initially extruded material or from waste.

Coarse nylon filaments.--The term "coarse nylon filaments" embraces nylon filaments over 2 but not over 8 inches in length, essentially round in cross section, over 0.008 but not over 0.020 inch in maximum cross-sectional measurement, not crimped, carded, combed, or otherwise processed. Since such filaments are produced commercially only by cutting, they are hereinafter referred to as cut filaments.

Certain coarse nylon cut filaments with tapered edges are not included here; they are classified as nylon brush bristles in item 773.15.

The coarse nylon cut filaments in item 309.41 which range in size from 300 to 2100 total denier, 1/ are sold according to cross-sectional measurement and length of filament. They are used mainly as bristles for brushes, especially toothbrushes, hairbrushes, household brushes, and industrial brushes. They are also used in making scouring pads, wigs, snelled hooks, shoe lasts, floor mats, and grinding wheels.

Staple fiber.--Virtually all the cut filaments covered by item 309.43 that enter trade consist of staple fiber. Staple can be made of any generic type of manmade fiber. In the United States the commercially important staple fibers are of rayon, acetate, nylon, acrylic, modacrylic, polyester, fluorocarbon, saran, olefin, and vinyon. 2/ Staple fiber, which is measured in deniers per filament, ranges in weight from 0.75 to 35 deniers for each filament. The fibers usually vary in length from a minimum of 1/4 inch to a maximum of 7 inches. Staple is made in two grades variously known as first, standard, or A grade and second, substandard, or B grade.

Staple is usually packaged in 400- to 600-pound shipping bales and is consumed primarily in the manufacture of fabrics, wearing apparel, rugs and other home furnishings, and many industrial products. Second-grade staple is generally used in products in which the grade of the fiber is of lesser importance.

Glass fiber.--Noncontinuous glass fibers, known in the trade as chopped strands, are the second most important type of fibers covered in item 309.43. Chopped glass strands are priced by length--which varies from 1/4 to 3-1/4 inches--without regard to the cross-sectional measurement; they are shipped in cartons weighing 25 to 40 pounds each. They are used principally in home furnishings and paper and plastic reinforcement.

Other noncontinuous fibers.--The other noncontinuous fibers covered here consist principally of cut laminated or plexiform filaments and are not commercially important.

1/ Denier is the weight in grams for a length of 9,000 meters.

2/ Except for fluorocarbon, all the fibers named here are defined and given generic recognition under the Textile Fiber Products Identification Act of 1960. Fluorocarbon fibers are manufactured from tetrafluoroethylene and hexafluoropropylene polymers.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)		
		Rate prior to Jan. 1, 1968	Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Fibers (in noncontinuous form), whether known as cut fiber, staple, or by any other name, not carded, not combed, and not otherwise processed:			
	Wholly of filaments (except laminated filaments and plexiform filaments):			
309.41:	Nylon, over 2 but not over 8 inches in length, essentially round in cross section and over 0.008 but not over 0.020 inch in maximum cross-sectional measurement, not crimped.	3¢	2¢	1¢
309.43:	Other-----	15%	12%	7.5%
309.50:	Other-----	25¢ + 30%	20¢ + 24%	12.5¢ + 15%

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. A concession amounting to a reduction of two-thirds of the duty was granted by the United States on item 309.41; concessions amounting to reductions of half of the duties were granted on items 309.43 and 309.50.

The average ad valorem equivalents of the specific and compound rates of duty in effect prior to January 1, 1968, and those to become effective on January 1, 1972, based on the value of dutiable imports in the specified year, were as follows (in percent):

TSUS item	Imports in year specified	Average ad valorem equivalent of--	
		Rate prior to Jan. 1, 1968	Final stage of Kennedy Round, Jan. 1, 1972
309.41-----	1968	1.9	0.6
309.50-----	1/ 1966	47.7	23.3

1/ There were no imports in 1968, and imports in 1967 were not representative.

U.S. consumption

U.S. consumption of the noncontinuous manmade fibers covered herein increased from about 681 million pounds, valued at \$403 million, in 1961 to about 2,266 million pounds, valued at about \$1,318 million, in 1968 (table 1). Almost 33 percent of the quantity consumed in 1968 consisted of polyester staple fiber; about 30 percent, of rayon staple; and about 21 percent, of acrylic staple. On a value basis, however, polyester staple accounted for 35 percent of the consumption; acrylic staple, for 30 percent; and rayon staple, for 19 percent. In 1968, U.S. production furnished almost all of the consumption of coarse nylon filaments, nylon staple, and polyester staple, but a little less than 90 percent of the acrylic and about 85 percent of the rayon staple.

Most noncontinuous fibers covered here are consumed in the Southeastern States; almost all those imported enter through ports in these States. Domestic and imported noncontinuous fibers can generally be processed on identical equipment; therefore, both the domestic and the imported fibers (especially rayon staple), are occasionally consumed in the same plants.

Consumption of noncontinuous manmade fibers has expanded since 1961 for the following reasons: (1) The development of staple lengths which permit blending with the natural fibers has encouraged the

utilization of manmade noncontinuous fibers because they add many desirable characteristics to products formerly manufactured entirely of natural fibers; (2) products using noncontinuous manmade fibers have continued to gain acceptance by the general public, e.g., polyester-cotton suits and shirts, easy-care clothing, and "permanent press" apparel; (3) the introduction of new types of staple, e.g., high wet strength modulus rayon staple, has permitted additional penetration of existing markets; (4) manmade fiber staple may be processed more smoothly and rapidly than natural staple on the new, highly automated machinery now in use; and (5) domestic price reductions on many types of manmade fiber staple have encouraged manufacturers to consume more. The following comparison of list prices (from Modern Textiles Magazine) for selected important types of manmade fiber staple graphically illustrates the price reductions:

Type of staple	: 1961 : price per : pound	: Current : (1969) : price per : pound
1.5 denier polyester, semidull, normal tenacity---	\$1.14	\$0.61
2.25 denier polyester, semidull-----	1.24	.61
3.0 denier acrylic, semidull-----	1.22	.89
3.0 denier nylon, semidull, normal tenacity, crimpset, 1st grade-----	1.24	.96
3.0 denier polypropylene, natural-----	.90	.55
3.0 denier polyester, semidull, normal tenacity---	1.24	.61
5.0 denier acrylic, semidull-----	1.22	.86
6.0 denier nylon, bright, normal tenacity, crimpset, 1st grade-----	1.20	.86
6.0 denier polypropylene, natural-----	.90	.55
15.0 denier nylon, bright, normal tenacity, crimpset, 1st grade-----	.95	.62
15.0 denier polypropylene, natural-----	.90	.55
15.0 denier acrylic, bright and semidull-----	.95	.78

U.S. producers

The noncontinuous manmade fibers covered by this summary are manufactured in the United States by establishments that can be separated into two categories, primary and secondary. The primary establishments extrude the manmade fibers and subsequently cut them into the forms herein considered. The secondary establishments purchase the original manmade fibers, i.e., monofilaments, grouped filaments, and so forth, from the extruder and cut them into such forms. The secondary establishments generally sell the noncontinuous manmade fibers to concerns that

process them further. Some secondary establishments also buy processed wastes from textile sources and convert them into the forms covered by this summary.

Many of the large firms operating the primary establishments have foreign subsidiaries and interests. They operate in almost 25 countries, and nearly all of their foreign affiliates manufacture the noncontinuous manmade fibers covered herein. In addition, one large foreign corporation has a subsidiary producing cut filaments in the United States. The firms with secondary establishments manufacturing noncontinuous manmade fibers have minor interests, if any, in foreign countries.

Coarse nylon cut filaments.--In the United States, coarse nylon cut filaments are manufactured in approximately 25 primary establishments operated by about 20 companies. No data are available on the number of secondary establishments producing such filaments. The primary establishments are owned mostly by large corporations, while the secondary plants are usually owned by small firms. More than half of the primary establishments are situated in the South Atlantic States, the largest number in South Carolina and Virginia, and more than a fourth are in the Middle Atlantic States of Pennsylvania, New York, and New Jersey. The secondary plants are believed to be mainly in the Middle Atlantic and South Atlantic States.

No plant manufactures coarse nylon cut filaments exclusively, but some primary plants manufacture nylon monofilaments as their only other product. More than a third of the primary establishments also manufacture other forms of noncontinuous manmade fibers, such as staple and cut monofilaments other than coarse nylon. Practically all of the secondary establishments that make coarse nylon cut filaments also manufacture other types of cut filaments.

Staple and other noncontinuous filaments.--In the United States, staple and other noncontinuous filaments are made in more than 40 primary establishments operated by about 20 large corporations. Chopped glass strands are manufactured by about 10 primary plants, all operated by large corporations. More than half of the primary staple plants are situated in the South Atlantic States, notably Virginia, South Carolina, and West Virginia. The primary establishments producing chopped glass strands are situated principally in South Carolina, Indiana, and Ohio. Only two primary plants manufacture staple exclusively, and three others sell tow ^{1/} as their only other product. In general, however, primary staple plants also manufacture grouped filaments (such as tow) and yarns for sale. Plants producing chopped glass strands usually manufacture other products from glass fibers. Five primary plants make staple from

^{1/} See separate summary on continuous grouped filaments of manmade fibers (items 309.28 to 309.31).

more than one generic manmade fiber. Rayon staple plants are situated notably in Tennessee, Alabama, and West Virginia; acetate staple plants, in Virginia and South Carolina; nylon staple plants, in South Carolina and Virginia; acrylic staple plants, in Virginia; modacrylic staple plants, in Tennessee and West Virginia; and polyester staple plants, in Tennessee and North Carolina.

Staple and other cut filaments are also produced in about 50 secondary establishments operated by about 40 companies. Almost half of the firms are medium sized, and about a third are large corporations. Approximately half of the secondary establishments are in New England, notably in Massachusetts, and not quite a third are in either the Middle or South Atlantic States, principally in New York, Pennsylvania, and North Carolina. A small percentage of the secondary establishments manufacture cut filaments exclusively; the great majority usually make other textile products in addition to cut filaments.

U.S. production

U.S. production of the noncontinuous manmade fibers covered by this summary increased from about 685 million pounds, valued at \$425 million, in 1961 to more than 2,117 million pounds, valued at \$1,299 million, in 1968 (table 1). Production consisted almost entirely of staple, chopped glass strands, and coarse nylon cut filaments. In 1968 all three types reached peak production as follows: Staple, 2,000 million pounds; coarse nylon cut filaments, 25 million pounds; and chopped glass strands, about 90 million pounds.

In 1961 rayon staple accounted for almost 57 percent of the domestic production of the noncontinuous manmade fibers covered herein. Acrylic staple was second, with 15 percent of the production; acetate, third, with 11 percent; and polyester staple, fourth, with 5 percent. Chopped glass strands and nylon staple each accounted for about 4 percent of the production in 1961. Comparable data for 1968 were polyester staple, 34 percent; rayon staple, 30 percent; acrylic staple, 21 percent; nylon staple, 6 percent; chopped glass strands, 4 percent; acetate staple, 2 percent; and other staple (mainly olefin), 2 percent. The percentage of the production accounted for by coarse nylon cut filaments was a little more than 1 percent in 1961 and 1968. Although production of rayon staple increased from 1961 to 1968, its share of total production decreased because of the rapidly expanding production of polyester and acrylic staple. Of the types of noncontinuous manmade fibers mentioned above, none declined in production from 1961 to 1968, but acetate staple increased only nominally (less than 2 percent).

U.S. exports

U.S. exports of the noncontinuous manmade fibers covered herein consist almost entirely of staple fiber. Exports of noncontinuous fibers other than staple (coarse nylon cut filaments, chopped glass strands, and so on) have always been minor, and most of the time, negligible. In 1961-68, exports reached a high of 67 million pounds, valued at \$42 million, in 1968 and a low of 29 million pounds, valued at \$22 million, in 1965 (table 1). In 1968 the composition and average value per pound of staple exports, according to official statistics of the U.S. Department of Commerce, were as follows:

Type of staple	Quantity	Value	Unit value <u>1/</u>	Percent of total quantity exported
	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>	<u>Per</u> <u>pound</u>	
Rayon-----	3,657	1,228	\$0.34	5
Acetate-----	2,421	1,038	.43	4
Nylon-----	18,401	11,312	.63	27
Polyester-----	14,020	8,913	.64	21
Acrylic and modacrylic-----	22,703	15,476	.68	34
Other noncellulosic staple--	5,753	4,104	.71	9
Total-----	66,955	42,071	.63	100

1/ Calculated from the unrounded figures.

Acrylic staple exports have gone mainly to foreign markets where acrylic plants do not exist or where existing plants are unable to furnish sufficient local production. Nylon staple and polyester staple have been exported to countries which require supplements to their domestic supplies. Exports of rayon staple have gone principally to underdeveloped countries lacking facilities for producing such staple. The remaining staple exports have been shipped to foreign markets where U.S. producers have created or stimulated demand.

In 1961-68 the ratio of annual U.S. exports to production averaged about 4 percent; it was highest in 1961 and lowest in 1965. In each of the years 1962-68, imports exceeded exports in quantity, but in 1961-64 the value of exports was higher than that of imports (table 1).

During 1962-68, Canada was the largest purchaser of U.S. staple fiber in each year except 1963, when Switzerland was the largest buyer (table 2). Other important buyers have been the Netherlands, Mexico, the U.S.S.R., the United Kingdom, Belgium and Luxembourg, West Germany, and Australia. Since 1962 the United States has shipped rayon and acetate staple fiber principally to Canada; nylon staple, to the

Netherlands, Canada, Belgium and Luxembourg, and Switzerland; polyester staple, to the Netherlands, the U.S.S.R., Venezuela, and Switzerland; acrylic and modacrylic staple, to Canada, Mexico, the Netherlands, the U.S.S.R., Australia, and Switzerland; and other noncellulosic staple, to the United Kingdom and Canada.

U.S. imports

In 1961-68, total U.S. imports of the staple and other noncontinuous manmade fibers considered here ranged from 38 million pounds, valued at \$10 million, in 1961 to 215 million pounds, valued at \$61 million, in 1968 (table 1). In that period the ratio of imports to domestic consumption ranged from 6 percent in 1961 to 11 percent in 1963, 1964, and 1966. In the same period, estimated U.S. imports of rayon staple, the predominant type, ranged from 34 million pounds, valued at \$7 million, in 1961 to 122 million pounds, valued at \$23 million, in 1968. Imports ranged from 8 to 16 percent of U.S. consumption of rayon staple during this period (table 3).

Imports of the noncontinuous manmade fibers covered here have consisted mainly of viscose staple fiber, notably 1.5 denier of bright luster for apparel and linings, 8 denier of bright luster for either carpets or upholstery, and 14 and 15 denier, usually crimped, of bright luster for carpets. Other leading types of imports are shown in the following tabulation:

<u>Type of staple</u>	<u>Description</u>	<u>Use</u>
Acrylic-----	3 denier, semidull luster	apparel
Acrylic-----	15 denier, crimped	carpets
Polyester-----	1.5 denier, semidull luster, crimped	apparel
Polyester-----	2.25 denier, semidull luster, crimped	apparel
Nylon-----	18 denier, crimpset	carpets
Nylon-----	3 denier, semidull luster, crimpset	apparel
Nylon-----	6 denier, semidull luster, crimpset	apparel

Each of the imported types mentioned above is either similar to or identical with a domestic product. The imports are generally capable of being utilized on the same types of machinery; in addition, their quality is equal to, and sometimes even better than, that of the competitive domestic product. Moreover, the imported products are almost always lower in price.

Since 1962 the principal sources of staple and other noncontinuous manmade fibers have been West Germany, Japan, France, Italy, the United Kingdom, and Austria (table 4). In 1966-68, West Germany and Japan together accounted for about half of the quantity imported and more than

half of the value. Table 5 shows the principal types of noncontinuous manmade fibers imported from these two countries and four others in those years. Not shown in the table are large quantities of imports of rayon staple fiber from Sweden, Finland, and Norway in 1966-68; polyester staple fiber from Canada and Mexico in 1966; acrylic staple fiber from Belgium and Luxembourg in 1967 and 1968; and other noncellulosic staple fiber from Taiwan in 1966-68.

Tariff Commission investigations.--In 1959 the U.S. Tariff Commission determined that an industry in the United States was not being, and was not likely to be, injured, or prevented from being established, as a result of the importation of rayon (viscose) staple from France at less than fair value within the meaning of the Antidumping Act of 1921, as amended. In 1961, in four separate investigations (one for each country of origin), the Commission made the same determination with respect to imports of rayon (viscose) staple from France, Belgium, Cuba, and West Germany at less than fair value.

Also in 1961 the U.S. Tariff Commission conducted an escape-clause investigation of rayon staple (investigation No. 7-95). The Commission found that rayon staple was not being imported into the United States in such increased quantities, either actual or relative to domestic production, as to cause or threaten serious injury to the domestic industry producing like or directly competitive products.

Foreign production and trade

Staple fiber predominates in the foreign production and trade of the noncontinuous manmade fibers covered herein. More than 90 percent of the foreign production of the noncontinuous manmade fibers included in this summary and 95 percent of the world trade in such fibers consists of staple manufactured in primary plants. ^{1/} More than 225 companies, operating 350 primary plants, produce staple in 42 foreign countries. Almost all of these companies are large corporations which may operate plants in more than one country. U.S. companies have functional interests in half of the staple-producing countries but in only a fifth of the plants. More than 90 percent of the foreign plants manufacture textile products in addition to staple, but the other products are generally made from the same generic fiber as the staple. A fifth of the plants produce staple from more than one generic fiber.

A third of the foreign primary plants manufacture viscose staple; Italy and France are the two foreign countries in which these plants are most numerous. A fifth of the foreign primary plants make polyester

^{1/} For definition of a primary plant, see the section on U.S. producers.

staple; a third of these are in West Germany, Italy, and Japan. About a seventh of the foreign plants make nylon staple, and almost the same proportion make chopped glass strands. There are more nylon staple plants in West Germany and Italy--and more chopped glass plants in Japan, the United Kingdom, and mainland China--than in any other foreign country. Acrylic staple is made in an eighth of the foreign plants; the largest number of these plants is in Japan. Although a substantial number of acetate staple plants are in operation abroad, no foreign country has a concentration of plants. The largest number of the foreign olefin (polypropylene) staple plants is in Japan. Other foreign plants manufacture cuprammonium (a type of rayon) staple, polyester-ether (a polyester derivative) staple, vinal staple, vinyon staple, azlon staple, modacrylic staple, saran staple, and vinal-vinyon (a polymeric blend of two generic manmade fibers) staple.

World production and trade data are not available on all of the noncontinuous manmade fibers covered here. However, data on world production of staple are published by Textile Organon. Based on that data, from which the estimated production of tow has been eliminated; world production in 1964-68 was as follows:

<u>Year</u>	<u>Million pounds</u>
1961-----	4,125
1962-----	4,598
1963-----	5,205
1964-----	5,839
1965-----	6,308
1966-----	6,762
1967-----	7,218
1968-----	8,450

These production figures are estimated to constitute more than 95 percent of world output of the noncontinuous manmade fibers included in this summary. Cellulosic staple fibers, especially viscose, are the leading types produced in the world, followed by acrylic and modacrylic staples, polyester staple, and nylon staple.

The United States was the world's leading producer of staple in 1968, accounting for 27 percent of the output; Japan was second, with 19 percent. Other important world producers in 1968 were West Germany, with 9 percent of the world output; the U.S.S.R., with 8 percent; the United Kingdom, with 7 percent; and Italy with 5 percent.

It is believed that West Germany was the foremost world exporter of staple in 1968, followed by Japan, the United Kingdom, and Italy. The leading world importer in 1968 was probably the U.S.S.R. The United States was second, and mainland China was probably third. The United States imported almost twice as much staple as the fourth leading importer, West Germany. Other important world importers in 1968 were the Republic of South Africa and the United Kingdom.

Table 1.--Staple and other noncontinuous manmade fibers: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1961-68

(Quantity in thousands of pounds; value in thousands of dollars)						
Year	Production ^{1/}	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption	
Quantity						
1961-----	684,939	37,944	^{2/} 42,146	680,737		6
1962-----	864,576	64,548	^{2/} 49,966	879,158		7
1963-----	1,025,346	124,974	^{2/} 48,350	1,101,970		11
1964-----	1,154,899	131,805	^{2/} 54,222	1,232,482		11
1965-----	1,394,298	128,876	29,316	1,493,858		9
1966-----	1,523,934	176,794	40,131	1,660,597		11
1967-----	1,636,335	148,856	46,212	1,738,979		9
1968-----	2,117,338	215,137	66,955	2,265,520		9
Value						
1961-----	425,334	10,263	^{2/} 32,836	402,761	^{3/}	
1962-----	506,051	19,763	^{2/} 33,652	492,162	^{3/}	
1963-----	592,058	29,003	^{2/} 31,664	589,397	^{3/}	
1964-----	754,273	35,852	^{2/} 42,577	747,548	^{3/}	
1965-----	924,914	48,113	22,073	950,954	^{3/}	
1966-----	1,015,474	58,744	29,289	1,044,929	^{3/}	
1967-----	1,078,874	45,038	30,283	1,093,629	^{3/}	
1968-----	1,299,003	61,242	42,071	1,318,174	^{3/}	

^{1/} Quantity estimated from data in Textile Organon and from official statistics of the U.S. Department of Commerce; value estimated from published list prices per pound for staple in Modern Textiles Magazine and from official statistics of the U.S. Department of Commerce.

^{2/} Includes small amounts of grouped filaments identified by the U.S. Department of Commerce as tow.

^{3/} Not meaningful.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 2.--Staple and other noncontinuous manmade fibers: U.S. exports of domestic merchandise, by principal markets, 1962-68

Market	1962 1/	1963 1/	1964 1/	1965	1966	1967	1968
	Quantity (1,000 pounds)						
Canada-----	7,772	5,994	8,196	6,127	8,863	10,084	15,138
Switzerland-----	5,115	9,935	5,406	340	800	5,030	16,968
Belgium and Luxembourg--	1,425	891	1,915	873	1,807	1,433	9,697
United Kingdom-----	2,110	1,928	3,138	2,293	1,824	1,406	2,962
Australia-----	4,387	3,035	4,863	232	1,407	764	1,900
West Germany-----	5,461	5,397	2,460	1,691	1,435	1,226	1,939
U.S.S.R-----	1,284	551	2,078	628	2,290	3,422	1,434
Israel-----	276	896	1,602	104	745	947	1,240
Colombia-----	518	842	1,622	1,195	1,283	517	1,087
Ecuador-----	98	33	126	-	118	602	1,189
Netherlands-----	6,083	2,616	6,605	4,881	5,437	7,358	989
Venezuela-----	1,209	554	892	713	421	4,038	987
Mexico-----	1,162	1,773	3,071	2,820	2,991	2,739	488
Peru-----	404	389	679	695	134	650	505
Republic of South							
Africa-----	5,000	4,745	2,366	203	85	234	288
Spain-----	88	348	131	562	872	897	417
All other-----	7,574	8,423	9,072	5,959	9,619	4,865	9,727
Total-----	49,966	48,350	54,222	29,316	40,131	46,212	66,955
	Value (1,000 dollars)						
Canada-----	4,764	3,944	5,258	4,550	5,890	6,343	9,953
Switzerland-----	2,478	4,830	2,789	217	554	3,139	9,780
Belgium and Luxembourg--	1,078	661	1,584	713	1,702	1,081	6,009
United Kingdom-----	1,623	1,383	2,277	1,885	1,409	1,007	2,048
Australia-----	2,504	1,563	4,129	210	1,346	636	1,549
West Germany-----	3,010	2,850	1,831	1,127	960	706	1,238
U.S.S.R-----	1,431	547	1,987	673	1,727	1,910	1,090
Israel-----	127	506	1,235	91	619	655	773
Colombia-----	558	941	1,444	832	946	464	755
Ecuador-----	42	16	72	-	120	419	706
Netherlands-----	5,780	2,989	6,438	4,307	4,668	5,512	571
Venezuela-----	1,043	540	814	607	321	2,044	430
Mexico-----	1,284	1,874	3,020	2,422	2,638	2,201	326
Peru-----	404	418	632	689	108	426	325
Republic of South							
Africa-----	2,506	2,403	1,804	247	109	132	163
Spain-----	60	246	142	418	720	455	148
All other-----	4,960	5,953	7,121	3,085	5,452	3,153	6,207
Total-----	33,652	31,664	42,577	22,073	29,289	30,283	42,071

1/ Includes small exports of tow.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 3.—Rayon staple fiber: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1961-68

(Quantity in thousands of pounds; value in thousands of dollars)						
Year	Production	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption	
Quantity						
1961-----	387,524	33,599	1,290	419,833		8
1962-----	483,800	48,789	2,015	530,574		9
1963-----	563,225	108,875	1,422	670,678		16
1964-----	576,471	98,457	952	673,976		15
1965-----	628,560	70,787	5,720	693,627		10
1966-----	639,424	101,021	7,051	733,394		14
1967-----	561,343	77,351	5,372	633,322		12
1968-----	635,803	121,907	3,657	754,053		16
Value						
1961-----	126,255	7,200	515	132,940		1/
1962-----	154,284	9,367	622	163,029		1/
1963-----	157,703	20,176	480	177,399		1/
1964-----	224,824	19,648	360	244,112		1/
1965-----	245,138	14,283	1,912	257,509		1/
1966-----	236,587	18,511	2,191	252,907		1/
1967-----	218,923	14,095	1,675	231,343		1/
1968-----	247,963	23,243	1,228	269,978		1/

1/ Not meaningful.

Source: Compiled and partly estimated from official statistics of the U.S. Department of Commerce.

Table 4.--Staple and other noncontinuous manmade fibers: U.S. imports for consumption, by principal sources, 1962-68

Source	1962	1963	1964	1965	1966	1967	1968
Quantity (1,000 pounds)							
West Germany----	34,944	53,023	49,313	36,447	60,083	60,630	70,197
United Kingdom--	3,571	4,841	3,855	2,739	2,831	8,832	37,355
Japan-----	3,307	2,960	11,128	35,529	41,417	22,997	26,105
France-----	2,917	19,718	22,155	13,651	24,482	21,143	22,167
Italy-----	4,480	6,848	9,002	4,271	10,341	12,046	19,289
Austria-----	5,922	11,051	10,257	10,057	12,016	9,372	13,196
Belgium and Luxembourg----	1,343	4,821	2,074	714	1,420	1,812	5,674
Finland-----	-	246	837	6,374	5,712	2,018	6,086
Norway-----	2,787	5,836	3,866	4,495	3,354	1,478	5,114
Sweden-----	547	1,603	3,019	3,324	8,181	5,013	4,998
Canada-----	1,174	4,298	3,832	5,386	1,596	1,083	1,448
Switzerland----	3,403	3,079	3,233	2,285	865	324	888
Taiwan-----	-	-	-	10	1,042	1,356	960
All other-----	153	6,650	9,234	3,594	3,454	752	1,660
Total-----	64,548	124,974	131,805	128,875	176,794	148,856	215,137
Value (1,000 dollars)							
West Germany----	10,574	13,434	13,007	11,785	18,977	19,645	22,754
United Kingdom--	1,914	1,156	2,077	1,364	1,189	2,376	9,713
Japan-----	880	607	4,149	19,631	20,871	8,867	9,693
France-----	1,076	3,917	5,435	4,205	5,224	5,790	5,557
Italy-----	1,206	1,579	2,547	1,484	2,731	3,303	4,778
Austria-----	1,207	2,113	2,038	2,019	2,343	1,677	2,377
Belgium and Luxembourg----	434	1,221	948	409	520	667	1,517
Finland-----	-	53	172	1,219	1,076	368	1,035
Norway-----	517	1,164	832	934	601	276	950
Sweden-----	96	301	583	631	1,512	860	870
Canada-----	572	1,144	1,135	2,540	931	480	571
Switzerland----	1,221	945	966	617	302	102	312
Taiwan-----	-	-	-	3	295	359	251
All other-----	66	1,369	1,963	1,272	2,172	268	864
Total-----	19,763	29,003	35,852	48,113	58,744	45,038	61,242

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 5.--Staple and other noncontinuous manmade fibers: U.S. imports for consumption, by principal sources and types, 1966-68

Year and type	West Germany	Japan	France	Italy	United Kingdom	Austria	Total, all countries
Quantity (1,000 pounds)							
<u>1966</u>							
Coarse nylon cut filaments-----	143	-	18	10	11	-	183
Cellulosic carpet and rug types----	16,663	519	11,457	2,609	75	-	33,022
Other cellulosic cut fibers-----	25,152	4,490	12,295	3,956	169	12,014	73,316
Other nylon cut fibers-----	440	3,905	12	11	59	-	4,899
Polyester cut fibers-----	9,088	15,950	2	207	14	-	28,936
Acrylic and modacrylic cut fibers--	4,684	10,430	551	97	2,403	-	19,365
Other noncontinuous fibers-----	3,913	6,123	146	3,451	100	2	17,073
Total-----	60,083	41,417	24,482	10,341	2,831	12,016	176,794
<u>1967</u>							
Coarse nylon cut filaments-----	66	-	29	-	2	-	121
Cellulosic carpet and rug types----	13,704	425	6,987	1,635	60	371	24,579
Other cellulosic cut fibers-----	21,267	2,479	8,638	3,785	3,641	9,001	56,843
Other nylon cut fibers-----	584	7,619	73	16	139	-	8,502
Polyester cut fibers-----	11,287	295	21	70	12	-	12,146
Acrylic and modacrylic cut fibers--	12,870	7,932	5,279	2,206	4,643	-	34,924
Other noncontinuous fibers-----	852	4,247	116	4,334	335	-	11,741
Total-----	60,630	22,997	21,143	12,046	8,832	9,372	148,856
<u>1968</u>							
Coarse nylon cut filaments-----	93	1	73	30	4	-	214
Cellulosic carpet and rug types----	9,987	157	10,800	4,682	1,563	285	29,846
Other cellulosic cut fibers-----	28,726	2,591	6,666	5,483	16,999	12,899	92,061
Other nylon cut fibers-----	888	5,585	111	322	342	-	7,714
Polyester cut fibers-----	12,246	3,437	-	693	-	-	17,618
Acrylic and modacrylic cut fibers--	16,060	8,003	4,423	1,650	16,445	-	49,122
Other noncontinuous fibers-----	2,197	6,331	94	6,429	2,002	12	18,562
Total-----	70,197	26,105	22,167	19,289	37,355	13,196	215,137
Value (1,000 dollars)							
<u>1966</u>							
Coarse nylon cut filaments-----	156	-	55	10	20	-	241
Cellulosic carpet and rug types----	3,599	92	2,326	510	24	-	6,887
Other cellulosic cut fibers-----	5,440	932	2,505	752	71	2,343	14,891
Other nylon cut fibers-----	376	2,006	13	11	26	-	2,649
Polyester cut fibers-----	6,095	10,038	1	69	8	-	18,897
Acrylic and modacrylic cut fibers--	2,349	5,225	267	36	985	-	9,411
Other noncontinuous fibers-----	962	2,578	57	1,343	55	-	5,769
Total-----	18,977	20,871	5,224	2,731	1,189	2,343	58,744
<u>1967</u>							
Coarse nylon cut filaments-----	81	-	78	-	2	-	203
Cellulosic carpet and rug types----	2,918	79	1,378	301	11	62	5,004
Other cellulosic cut fibers-----	4,614	479	1,945	669	812	1,615	11,579
Other nylon cut fibers-----	408	3,558	50	16	58	-	4,134
Polyester cut fibers-----	6,047	155	10	18	3	-	6,544
Acrylic and modacrylic cut fibers--	5,258	3,038	2,277	921	1,426	-	13,699
Other noncontinuous fibers-----	319	1,568	52	1,378	64	-	3,875
Total-----	19,645	8,867	5,790	3,303	2,376	1,677	45,038
<u>1968</u>							
Coarse nylon cut filaments-----	100	1	174	32	4	-	334
Cellulosic carpet and rug types----	2,073	28	2,052	796	261	49	5,690
Other cellulosic cut fibers-----	6,075	465	1,296	975	3,098	2,321	17,552
Other nylon cut fibers-----	544	2,488	110	178	122	-	3,680
Polyester cut fibers-----	6,791	1,411	-	224	-	-	9,333
Acrylic and modacrylic cut fibers--	6,674	2,962	1,897	686	5,907	-	19,149
Other noncontinuous fibers-----	497	2,338	28	1,887	326	7	5,504
Total-----	22,754	9,693	5,557	4,778	9,713	2,377	61,242

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS</u> <u>item</u>
Waste of manmade fibers-----	309.60, -.65, -.66

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States dominates world output of waste of manmade fibers. Since 1963, U.S. exports have exceeded imports. In 1968 the value of U.S. exports amounted to about \$6 million, and that of imports, to a little more than \$3 million.

Description and uses

For tariff purposes the term "waste of manmade fibers" means all fiber, yarn, and thread wastes, including wastes obtained in the production of continuous and noncontinuous manmade fibers, yarns, and threads. It also includes fiber, yarn, and thread wastes obtained in the production of other textile products (i.e., products other than fibers, yarns, or threads) or otherwise obtained. All the foregoing are wholly or in chief value of manmade fibers (see the definition of waste in headnote 1(a), part 1, schedule 3, of the TSUSA). Advanced waste, i.e., waste that has been cleaned, bleached, colored, cut, garnetted, or otherwise processed, but not carded, combed, or spun, is covered in a separate summary on items 309.70 and 309.75.

The waste of manmade fibers covered herein that enters trade consists principally of two types--producers' waste and mill waste. Producers' waste is usually obtained from a fiber manufacturer and consists of discarded monofilaments, yarns, staple, grouped filaments, and strips. Mill waste, including noils, is normally obtained from textile mills which produce fiber, yarn, and thread wastes as a result of carding, combing, roving, spinning, winding, throwing, knitting, weaving, and dyeing operations. Noils (item 309.60) are the short fibers, usually of even length, obtained in the processing of fibers into spun yarn.

Producers' waste is usually reduced to a fibrous state and processed into spinnable fibers by carding and combing. Mill waste can also be processed into spun yarn, but such waste when snarled or twisted requires garnetting before being reworked. Waste which cannot be processed into spun yarn is used for batting, felts, padding, mops, twines, material for wiping machinery, journal-box packing, oilers for bearings, and stuffing for upholstery, mattresses, dolls, and animal figures.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)	
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Waste of manmade fibers:			
309.60:	Noils-----	12.5%	10%	6%
	Other:			
309.65:	Of cellulose	7.5¢	6¢	3.7¢
	acetate.			
309.66:	Other-----	5%	4%	2.5%

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations concluded on June 30, 1967, under the General Agreement on Tariffs and Trade. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Concessions amounting to a reduction of about 50 percent in duties were granted by the United States on all the items shown above.

The average ad valorem equivalent of the specific rate of duty for item 309.65, based on dutiable imports in 1965 (there were no imports in 1966, 1967, or 1968), is 17.2 percent for the rate in effect prior to January 1, 1968, and 8.5 percent for the rate which is to become effective January 1, 1972.

U.S. consumption

Estimated U.S. consumption of waste (not advanced) of manmade fibers in 1961-68 is shown below:

<u>Year</u>	<u>Million pounds</u>
1961-----	90
1962-----	100
1963-----	115
1964-----	135
1965-----	150
1966-----	155
1967-----	175
1968-----	230

The principal item of consumption has been producers' waste, of which waste from rayon fibers is the most important single type. Substantial quantities of producers' waste from nylon, acrylic, polyester, and modacrylic fibers, however, are also consumed.

The consumption of waste has expanded since 1958 because (1) the production of almost all forms of manmade fibers has increased; (2) the producers of manmade fibers were unable to make enough fiber to satisfy the demand for products of waste therefrom; (3) the raw fiber costs were sufficiently high to warrant expanded waste usage; (4) new, more efficient machines for processing waste have produced better quality materials for reuse by textile and other manufacturers; and (5) the development of new uses for waste of manmade fibers has increased its demand.

U.S. producers

Producers' waste can be obtained in the United States from approximately 30 firms operating about 60 plants. Mill waste can be obtained from more than 300 firms operating about 500 plants. Almost all of the sources of producers' waste are large corporations, and many of the sources of mill waste are also large corporations. Noils of manmade fibers are generally obtained from a few companies having carding and combing operations.

The majority of the plants that are the sources of waste of manmade fibers are situated in the New England, Middle Atlantic, and Southern States. Most of the waste is obtained from plants in North Carolina, South Carolina, and Virginia. Almost all of the plants from which producers' waste is purchased make manmade-fiber products exclusively. Most of the plants from which mill waste is bought

manufacture yarns and fabrics of manmade fibers. The sale of waste accounts for only a small part of the total income of the plants from which producers' and mill wastes are obtained.

U.S. production

The domestic manmade-fiber waste available for sale is contingent upon the kind of fiber being produced. During processing, many fibers yield waste that can be recycled (restored to original liquid condition and polymerized) in the same plant. Since 1960 the largest quantities of producers' waste have consisted of rayon (viscose) and nylon. Viscose waste generally cannot be recycled. Some types of nylon producers' waste are sold to waste processors, and other types are recycled. Most acrylic and modacrylic waste also is recycled. Little or no acetate producers' waste is sold to waste processors; such waste is usually recycled.

The mill waste that is sold probably consists principally of nylon, with rayon (viscose) second in importance. Other mill wastes sold by domestic plants are of acrylic, modacrylic, or polyester fibers. Acetate mill waste is usually discarded.

U.S. output of producers' waste of manmade fibers is difficult to measure. Some of such waste does not even enter commercial trade channels. The operators of many plants do not bother to measure the quantity of producers' waste which is recycled. Shipments of producers' waste, however, are reported by Textile Organon. Such shipments to domestic mills for 1961-68 are shown in the following tabulation:

<u>Year</u>	<u>1,000 pounds</u>
1961-----	71,200
1962-----	77,900
1963-----	95,000
1964-----	107,000
1965-----	122,500
1966-----	135,100
1967-----	152,400
1968-----	210,500

Output of mill waste of manmade fibers is also difficult to determine. Many mills do not record the amount of mill waste that is discarded. Shipments to waste purchasers are probably recorded but no data on such shipments are now available. Because more manmade fibers are being used in textile and other manufactures, it is believed that shipments of mill waste have been increasing since 1960.

U.S. exports

In 1961-68, U.S. exports of the waste of manmade fibers covered here ranged from 11.6 million pounds, valued at \$2.6 million, in 1962 to 41.3 million pounds, valued at almost \$6.0 million, in 1968 (table 1). On a quantity basis, exports of rayon and acetate waste exceeded exports of other waste (notably nylon, acrylic, and polyester) except in 1965. On a value basis, nylon, acrylic, and polyester wastes, in the aggregate, took the lead in 1963 and have retained it since then.

The principal markets for U.S. exports of waste have been Italy, Canada, the Republic of South Africa, and Japan (table 2). Italy usually accounts for about a third of U.S. exports; it imports mainly waste of nylon, acrylic, and polyester fibers from the United States. Canada normally imports approximately equal quantities of cellulosic (rayon and acetate) and noncellulosic (nylon, acrylic, polyester, and so forth) waste. Japan imports principally noncellulosic waste from the United States, and the Republic of South Africa purchases mostly cellulosic waste.

It is estimated that U.S. exports averaged from 11 to 17 percent of annual combined shipments of producers' and mill wastes in 1961-68. The quantity of exports has exceeded that of imports since 1962. U.S. exports are dependent on (1) foreign requirements for waste (with respect to both quantity and variety); (2) the quantities and diversity of waste fibers that can be obtained in foreign markets from sources within the country, from the United States, and from other countries; (3) the intensity of the demand for U.S. produced manmade fibers in other countries; and (4) the relative prices of wastes and primary manmade fibers, and the relative prices of wastes available from various sources.

U.S. imports

In 1961-68, U.S. imports of the wastes covered here fluctuated from 11.7 million pounds, valued at \$2.6 million, in 1963 to 26.5 million pounds, valued at \$3.1 million, in 1968 (table 1). Annual imports ranged in quantity from 10 to 15 percent of estimated annual U.S. consumption during 1961-68.

The imports consisted of wastes made of viscose, nylon, acrylic, polyester, polypropylene, and mixed fibers. A small amount of acetate waste entered the United States in 1965. All the major types imported are also manufactured in the United States. In 1968, imports of nylon waste ranked first; acrylic, second; polyester, third; olefin, fourth; and viscose, fifth. Imports of viscose waste ranked second to those of nylon waste in 1961-64.

The economic factors that influence U.S. imports are determined primarily by the amount of waste that is available. A new plant established in this or another country has a large amount of waste when it begins operations and will sell its waste at exceptionally low prices rather than store or discard it. Users of the waste are usually cognizant of this condition and take measures to procure the waste. Other factors influencing imports of waste include (1) the lack of sufficient domestic waste resources, which encourages waste users to supplement their supplies with imports; (2) the price of imports relative to the price of domestic waste, which may cause waste users to utilize more imports; and (3) U.S. production of certain inexpensive articles that can be manufactured only with certain imported waste which is much cheaper than available domestic waste.

In the years 1962-68, various countries were the principal suppliers of imported waste (table 3). Some countries, such as West Germany, Canada, the United Kingdom, and Italy, have consistently exported large quantities to the United States. In certain years, other countries became important suppliers, especially when production of manmade fiber was undergoing rapid expansion or when new plants were being constructed in those countries. In 1965-67, the United Kingdom led in value of exports of manmade-fiber waste to the United States; Canada was second, and West Germany, third. In 1968, however, Canada ranked first, and the United Kingdom, second; West Germany remained third.

Particular fibers have predominated in the wastes imported from various countries, as follows: Viscose waste--from India, Switzerland, and Canada; nylon waste--from Canada, the United Kingdom, the U.S.S.R., West Germany, and Australia; polyester waste--from West Germany and Canada; acrylic waste--from the United Kingdom and Japan, and olefin waste--from Canada.

Foreign production and trade

World output of the waste covered herein is impossible to measure accurately. The types dominating in the United States, i.e., producers' and mill wastes, also dominate throughout the world, but in many countries such wastes are not identified in the same way as in the United States. The official statistics of a few countries include waste as part of their staple output. The definition of waste varies widely from country to country and even from company to company. It is believed, however, that most of the world trade in waste of manmade fibers consists of that derived from primary producers of manmade fibers.

The Textile Organon has estimated the world output in 1961-68 of waste obtained from primary producers of manmade fibers as follows:

<u>Year</u>	<u>Million pounds</u>
1961-----	269
1962-----	304
1963-----	308
1964-----	350
1965-----	389
1966-----	422
1967-----	475
1968-----	570

Of the world output shown above, the United States is believed to account for a larger percentage than any other country. Japan was probably second, followed by West Germany and the United Kingdom. Viscose waste was estimated by Textile Organon to have accounted for 210 million pounds of the figure shown above for 1968, and noncellulosic waste, mainly nylon, for the remainder.

Table 1.--Waste of manmade fibers: U.S. imports for consumption and exports of domestic merchandise, 1961-68

Year	Imports		Exports	
	Quantity	Value	Quantity	Value
	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>	<u>1,000</u> <u>pounds</u>	<u>1,000</u> <u>dollars</u>
1961-----	13,360	3,863	13,313	2,551
1962-----	13,181	3,193	11,591	2,631
1963-----	11,712	2,569	16,772	3,441
1964-----	14,966	3,236	19,465	4,213
1965-----	13,350	3,154	19,213	3,984
1966-----	18,632	2,823	32,955	5,787
1967-----	22,091	2,822	28,932	4,869
1968-----	26,510	3,136	41,285	5,998

Source: Compiled from official statistics of the U.S. Department of Commerce.

Note.--For comments on consumption and production, see text.

Table 2.--Waste of manmade fibers: U.S. exports of domestic merchandise, by principal markets, 1962-68

Market	1962	1963	1964	1965	1966	1967	1968
	Quantity (1,000 pounds)						
Italy-----	3,627	5,109	5,847	6,386	12,035	7,684	9,866
Canada-----	1,380	2,618	3,519	2,771	2,974	3,962	5,844
Republic of							
South Africa---	1,255	4,247	4,049	2,805	5,153	6,304	6,876
Japan-----	1,676	2,010	1,473	1,320	4,202	2,867	2,545
Netherlands-----	759	484	485	1,141	1,929	1,028	3,077
Korean Republic--	113	1/	-	295	251	179	1,022
Belgium and							
Luxembourg-----	403	145	367	445	967	438	1,664
Portugal-----	34	55	184	445	172	354	750
West Germany-----	88	137	820	330	314	453	1,071
Hong Kong-----	19	68	168	630	464	566	731
Spain-----	34	84	111	326	881	768	798
United Kingdom---	72	114	274	508	524	486	235
All other-----	2/ 2,131	1,701	2,168	1,811	3,089	3,842	6,806
Total-----	11,591	16,772	19,465	19,213	32,955	28,932	41,285
	Value (1,000 dollars)						
Italy-----	483	813	924	908	1,905	1,241	1,146
Canada-----	472	814	1,120	884	838	791	1,043
Republic of							
South Africa---	140	551	430	302	430	566	530
Japan-----	484	558	470	316	693	481	471
Netherlands-----	191	76	79	170	381	153	460
Korean Republic--	53	1	-	64	60	52	277
Belgium and							
Luxembourg-----	86	38	73	83	307	94	187
Portugal-----	36	59	55	171	41	121	157
West Germany-----	38	41	295	99	95	120	148
Hong Kong-----	6	21	39	98	90	122	102
Spain-----	18	17	21	112	201	296	98
United Kingdom---	20	75	149	325	256	215	91
All other-----	2/ 604	377	558	452	490	617	1,288
Total-----	2,631	3,441	4,213	3,984	5,787	4,869	5,998

1/ Less than 500 pounds.

2/ Includes 1,302 thousand pounds, valued at 403 thousand dollars, exported to Switzerland.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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WASTE OF MANMADE FIBERS

Table 3.--Waste of manmade fibers: U.S. imports for consumption, by principal sources, 1962-68

Source	1962	1963	1964	1965	1966	1967	1968
	Quantity (1,000 pounds)						
Canada-----	1,220	1,124	1,890	2,642	4,961	5,018	5,357
United Kingdom---	1,123	915	1,814	2,014	3,467	6,043	5,849
West Germany-----	4,934	3,202	3,174	2,062	2,083	2,091	4,396
Belgium and Luxembourg-----	196	167	311	539	812	1,842	3,021
U.S.S.R-----	-	-	-	-	1,172	1,345	2,007
Japan-----	435	269	61	1,450	449	165	615
Switzerland-----	999	1,227	644	566	1,716	1,228	828
Netherlands-----	797	309	748	684	403	151	1,529
Italy-----	632	1,204	2,422	1,165	1,034	814	375
Republic of South Africa---	6	-	-	86	245	461	404
France-----	789	207	500	324	212	392	345
Australia-----	344	502	858	960	981	420	302
Spain-----	267	142	450	100	314	710	773
All other-----	1,439	2,444	2,094	758	783	1,411	709
Total-----	13,181	11,712	14,966	13,350	18,632	22,091	26,510
	Value (1,000 dollars)						
Canada-----	308	238	441	567	800	821	813
United Kingdom---	353	298	651	681	811	865	786
West Germany-----	1,365	724	656	460	335	301	714
Belgium and Luxembourg-----	37	43	95	102	69	136	222
U.S.S.R-----	-	-	-	-	103	139	154
Japan-----	123	75	21	444	123	30	91
Switzerland-----	229	316	157	105	156	100	73
Netherlands-----	176	64	138	102	51	26	62
Italy-----	152	270	430	278	90	105	44
Republic of South Africa---	1	-	-	14	42	58	32
France-----	106	36	77	69	47	51	32
Australia-----	71	96	158	165	95	37	28
Spain-----	51	32	85	39	25	44	26
All other-----	221	377	327	128	76	109	59
Total-----	3,193	2,569	3,236	3,154	2,823	2,822	3,136

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS item</u>
Garnetted manmade fibers-----	309.70
Other advanced waste of manmade fibers-----	309.75

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TAUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. consumption of advanced waste is furnished almost entirely by U.S. production and consists mainly of garnetted fibers. U.S. imports of advanced waste are insignificant and amounted to less than 1 percent of consumption in 1968. Exports in 1968 were estimated to have accounted for 1 to 3 percent of the domestic output of advanced waste of manmade fibers.

Description and uses

For tariff purposes the term "advanced waste of manmade fibers" includes wastes which have been cleaned, bleached, colored, or otherwise advanced, and includes fibers recovered by cleaning, cutting, pickering, garnetting, or similar processes from all "wastes of manmade fibers," as that term is described in the preceding summary on manmade-fiber waste, or from textile clippings or articles, new or used, but does not include fibers which have been carded, combed, or similarly processed, or reusable yarns or threads.

Related articles included in separate summaries are wastes of manmade fibers (items 309.60, 309.65, and 309.66), staple and other noncontinuous manmade fibers (items 309.41 to 309.43), manmade fibers carded, combed, or otherwise processed but not spun (items 309.80 and 309.90), scrap cordage (items 390.10 to 390.20), and rags (items 390.30 to 390.60).

Garnetted manmade fibers are loose fibers obtained from waste, rags, and clippings by a process known as garnetting. For purposes of this summary, the term "garnetted fibers" does not include fibers which are in a condition ready for spinning, even though they were processed on a "garnetting machine" which has an extra cylinder or other facility to process the fibers in a manner similar to a carding machine. 1/ Such fibers are covered in the summary on items 309.80

1/ In the trade, the term "garnetted fibers" has a more comprehensive meaning than that to which it is limited in this summary.

and 309.90. The other advanced wastes covered here are processed through use of a variety of machines, including pickers, scutchers, dusters, blenders, and single or multicylinder waste machines.

Garnetted manmade fibers, after carding or similar processing, are used to manufacture spun yarn for many kinds of fabrics, including those utilized in apparel and carpets. Garnetted manmade fibers are also used as stuffing or filling materials, for flocking applications, in nonwoven or bonded fabrics, and in making blended yarns containing other textile fibers. The other advanced wastes of manmade fibers covered here are generally intermediate products for further textile-manufacturing operations.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)	
		prior to Jan. 1, 1968	Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
309.70:	Garnetted manmade	5¢ +	4¢ + 10%	2.5¢ + 6%
:	fibers.	12.5%	:	:
309.75:	Other advanced waste	15%	12%	7.5%
:	of manmade fibers.	:	:	:
:	:	:	:	:

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Concessions amounting to a reduction of about 50 percent in duties were granted by the United States on all the items listed above.

The average ad valorem equivalent of the compound rate of duty for item 309.70, based on dutiable imports in 1967 (there were no

imports in 1968), is 49.9 percent for the rate in effect at the end of 1967 and 24.7 percent for the rate which is to become effective January 1, 1972.

U.S. consumption

Data are not available on U.S. consumption of all the types of advanced waste of manmade fibers that enter commerce. It is estimated that consumption of such waste in 1968 amounted to about 260 million pounds; most of it probably consisted of garnetted manmade fibers. The bulk of consumption was comprised of nylon, polyester, and acrylic fibers.

Consumption of garnetted manmade fibers in 1961-68, estimated on the basis of information obtained from the domestic garnetters and from official statistics of the U.S. Department of Commerce, was as follows:

<u>Year</u>	<u>Million pounds</u>
1961-----	52
1962-----	57
1963-----	70
1964-----	79
1965-----	91
1966-----	97
1967-----	110
1968-----	173

Because garnetted manmade fibers generally constitute most of the consumption of advanced waste, the data above indicate that consumption of all the advanced wastes covered herein probably expanded consistently over the period shown. Some of the reasons for the increase in consumption are as follows: (1) The demand for products manufactured of manmade fibers has grown substantially; (2) more efficient machines have been developed for making advanced wastes; (3) the continuing scarcity of certain manmade fibers has encouraged processors to recover more waste from a variety of materials; and (4) certain advanced wastes of manmade fibers have been found suitable for blending with some natural fibers and with some manmade fibers.

U.S. producers

Advanced waste entering commerce is manufactured in the United States by more than 100 establishments, the majority of which have garnetting machines. The plants are situated in many areas of the

United States, but the largest numbers are in New York, Massachusetts, and Pennsylvania. The annual output of many of the larger firms, some of which have more than one plant, is from 5 million to 10 million pounds. A few firms exceed such production, but most firms have less than 5 million pounds of annual output. Only a few domestic firms have foreign production facilities.

The firms that have garnetting machines generally derive their principal income from the sale of garnetted fibers. Their other operations consist of the production and sale of other kinds of advanced waste and/or other products of manmade fibers. Advanced-waste firms without garnetts usually obtain their principal income from products associated with the intermediate processing of manmade fibers or from articles made from such fibers. For most of these firms without garnetts, however, the sale of advanced waste is an important source of revenue. Almost all advanced-waste firms use domestic waste supplies as their principal raw materials, but many firms, especially the larger garnetting companies, use substantial quantities of imported waste.

U.S. production and exports

Data are not available on U.S. production and shipments of all the advanced wastes of manmade fibers covered here. The principal item of U.S. production is generally garnetted fibers, and almost all of it is produced for sale. The output of garnetted manmade fibers in 1961-68 has been estimated on the basis of information obtained from the domestic producers as follows:

<u>Year</u>	<u>Million pounds</u>
1961-----	53
1962-----	58
1963-----	71
1964-----	80
1965-----	92
1966-----	98
1967-----	112
1968-----	175

Because garnetted manmade fibers usually constitute most of the domestic production of all of the advanced wastes included here, the data above indicate that domestic production of these wastes has increased substantially since 1961. Domestic production of all advanced wastes furnishes almost all of the U.S. consumption. U.S. production consists mainly of nylon, but rayon, acrylic, and polyester advanced wastes are also important.

Data on U.S. exports of advanced wastes are not separately classified. Reliable estimates place U.S. exports of these wastes at approximately 1 to 3 percent of domestic production.

U.S. imports

During 1961-66, annual U.S. imports of advanced waste of manmade fibers increased from 9,000 pounds, valued at \$3,000, in 1961 to 966,000 pounds, valued at \$220,000, in 1966 (see accompanying table). In 1967, however, imports declined to 641,000 pounds, valued at \$160,000; in 1968 they increased to 795,000 pounds, valued at \$224,000. In each of the years 1961-68, imports were equivalent to less than 1 percent of U.S. production.

In 1961-63, imports consisted largely of garnetted manmade fibers, but in 1964-68, imports consisted chiefly of other advanced manmade fiber wastes. The latter consisted mainly of pickered stock, certain chopped fibers, and processed stock for carpet manufacture.

On a value basis, the United Kingdom was the principal supplier of imports in 1961; Italy, in 1962, 1963, and 1968; France, in 1964; Japan, in 1965; West Germany, in 1966; and Israel, in 1967. The most important types of advanced waste imported since 1963 have been garnetted acrylic fibers from Italy; processed viscose wastes from West Germany and Canada; acrylic processed stock for carpets from Japan, France, Israel, and Italy; pickered and chopped polypropylene (olefin) fibers from Canada and West Germany; and processed polyester wastes from the Netherlands.

Advanced waste, including garnetted, of manmade fibers: U.S. imports for consumption, by principal sources, 1961-68

Source	1961	1962	1963	1964	1965	1966	1967	1968
Quantity (1,000 pounds)								
Italy-----	1	50	56	73	43	5	10	264
West Germany----	-	6	53	14	6	439	286	252
United Kingdom--	8	5	3	44	10	41	124	72
France-----	-	-	-	142	106	68	11	20
Canada-----	-	-	11	275	347	270	52	11
Japan-----	-	-	30	-	131	30	-	-
All other-----	-	-	<u>1/</u> 49	-	-	<u>2/</u> 113	<u>3/</u> 158	<u>4/</u> 176
Total-----	9	61	202	548	643	966	641	795
Value (1,000 dollars)								
Italy-----	<u>5/</u>	13	14	24	7	2	3	103
West Germany----	-	3	11	5	2	101	54	61
United Kingdom--	3	3	1	18	4	5	23	15
France-----	-	-	-	62	57	30	6	6
Canada-----	-	-	3	35	37	40	8	3
Japan-----	-	-	7	-	75	18	-	-
All other-----	-	-	<u>1/</u> 10	-	-	<u>2/</u> 24	<u>3/</u> 66	<u>4/</u> 36
Total-----	3	19	46	144	182	220	160	224

1/ From Switzerland.

2/ From Mexico.

3/ Includes 149 thousand pounds, valued at 61 thousand dollars, imported from Israel.

4/ Includes 101 thousand pounds, valued at 22 thousand dollars, imported from the Netherlands, and 70 thousand pounds, valued at 12 thousand dollars, imported from Spain.

5/ Less than \$500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS</u> <u>item</u>
Manmade fibers, processed but not spun-----	309.80, -.90

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. consumption of manmade fibers processed but not spun is furnished principally by domestic production. Exports average from 1 to 4 percent of production and are usually much larger than imports.

Description and uses

The manmade fibers covered herein are those which have been carded, combed, or otherwise processed but not spun into yarn. They are usually intermediate products used for the manufacture of spun yarn. Trade in such processed fibers consists almost entirely of sliver, roving, or top.

Related articles are included in separate summaries on grouped filaments of manmade fibers (items 309.28 to 309.31), staple and other noncontinuous manmade fibers (items 309.41 to 309.50), advanced waste of manmade fibers (items 309.70 and 309.75), and spun yarn of manmade fibers (items 310.40 and 310.50).

Sliver, a round strand of fibers loosely compressed together without twist, is condensed from the thin webs formed by carding machines. Roving is sliver usually put through draw frames to make the fibers more nearly parallel. Top is an untwisted strand of combed sliver of manmade fibers; it is also the product of direct-processing machines which use manmade grouped filaments as the raw material.

Sliver is normally further processed within the establishment in which it is produced. The sliver that enters commerce and the sliver manufactured by direct-processing machines are usually shipped in cylindrical containers of various sizes. Roving is also primarily an intermediate operation in a yarn-spinning plant; that entering commerce is generally wound onto bobbins with the use of flyers which insert a slight amount of twist. Top almost always enters trade channels; it is usually shipped in coiled form in cylindrical and square containers or in ball form, sometimes with one end flattened.

In the United States the manmade-fiber products covered herein that enter commerce are predominantly tops manufactured on direct-processing machines. The remainder of such products are generally sliver also produced on direct-processing machines. Direct-processed manmade fibers are produced by two major methods: the Turbo-stapler method and the Pacific Converter method. The Turbo-stapler stretch-breaks heavy-denier grouped filaments into material similar to combed sliver. The Pacific Converter diagonally cuts several tows (each usually consisting of heavy-denier grouped filaments) into crimped strands.

Although some tops and sliver not direct-processed are shipped, they are of minor importance compared with the direct-processed products. Very little roving of manmade fibers enters domestic commerce.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rates pursuant to U.S. con- cessions granted in 1964-67 trade conference (Kennedy Round)	
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Textile fibers, processed but not spun:			
309.80:	In chief value, but not wholly, of manmade fibers.	25¢ + 30%	20¢ + 24%	12¢ + 15%
309.90:	Wholly of manmade fibers.	5¢ + 15%	4¢ + 12%	2.5¢ + 7.5%

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Concessions amounting to a reduction of about 50 percent in duties were granted by the United States on both of the items listed above.

The average ad valorem equivalents of the specific and compound rates of duty in effect prior to January 1, 1968, and those to be effective on January 1, 1972, based on the value of dutiable imports in 1968, were as follows:

TSUS item	Average ad valorem equivalent of--	
	Rate prior to Jan. 1, 1968	Final stage of Kennedy Round, Jan. 1, 1972
309.80-----	46.5%	22.9%
309.90-----	20.8%	10.4%

U.S. consumption

U.S. consumption of the processed manmade fibers covered here that enter commerce is estimated to have increased from 90 million pounds in 1961 to 293 million pounds in 1968 (table 1). Consumption consisted principally of processed fibers manufactured by direct-processing methods. It included almost all generic manmade fibers, but most of it was believed to be of acrylic, polyester, nylon, and rayon fibers. Domestic production furnished almost all of the U.S. consumption.

Consumption has increased since 1961 because processed manmade fibers made by direct-processing methods have several advantages over fibers processed on the conventional systems used for natural fibers. The obvious advantage is the elimination of a number of operations normally associated with the processing of spun yarn on conventional natural-fiber systems. Yarns made from direct-processed fibers are normally cleaner, more even, and freer from neps than those made from conventionally processed fibers. The costs of making direct-processed fibers are almost always lower because capital investment is less, specialized experience is not necessary, changeover to other types of yarn products is simple, and the processing operation is completely under control from the acquisition of the grouped filaments to the finished product.

U.S. producers

More than 100 establishments in the United States manufacture processed manmade fibers for sale. Most mills have fewer than 500 employees. For about a third of the establishments, the sale of processed manmade fibers provides their principal income. Other products generally manufactured in mills not specializing primarily in processed manmade fibers include similar articles from natural fibers, spun yarn, and advanced wastes. The establishments are situated mainly in the eastern United States. Few of the firms have foreign interests or plants in other countries.

U.S. production

U.S. production of processed manmade fibers that enter commerce is estimated to have increased from 94 million pounds in 1961 to 298 million pounds in 1968 (table 1). In 1961 production consisted mainly of acrylic and rayon tops for eventual consumption on the woolen and worsted systems of spinning yarn; in 1968 it was principally direct-processed acrylic, polyester, nylon, and rayon fibers for immediate use in spun-yarn manufacture.

U.S. exports

U.S. exports of the manmade fibers covered here consist almost entirely of tops as defined in the "description and uses" section of this summary. Exports of such tops declined from 1961 to 1962, but they increased to a high of 6.2 million pounds in 1966. In 1967 they declined to 4.3 million pounds, but in 1968 they increased to 4.9 million pounds (table 1). Since 1960 the quantity of exports has averaged from 1 to 4 percent of annual U.S. production, and in each year exports were considerably larger than imports.

The increase in exports from 1962 to 1966 and from 1967 to 1968 is attributed mainly to the expanded demand in foreign countries for U.S. tops of manmade fibers. In the late 1950's U.S. exports consisted mainly of nylon tops, but since 1962 the increase in exports has been due principally to the foreign demand for U.S.-produced acrylic and polyester tops.

Since 1960, various countries have been the principal markets for domestic tops probably because the construction of manmade-fiber plants in those markets has forced U.S. exporters to shift from one country to another. In recent years Peru and Canada have been the leading markets for U.S. exports; other important markets have been the United Kingdom and Colombia in 1961-63; Uruguay and Ecuador in 1964; Brazil, Italy, and France in 1965-67; and Brazil, Uruguay,

Mexico, and West Germany in 1968 (table 2). In 1966-68 the United States exported rayon tops principally to Canada and West Germany; acrylic and polyester tops to Peru, Brazil, and Canada; and nylon tops to Peru, Mexico, Canada, and Italy.

U.S. imports

In 1961-68, U.S. imports of processed manmade fibers ranged from 52,000 pounds, valued at \$39,000, in 1965 to 737,000 pounds, valued at \$598,000, in 1966 (table 3). The imports in 1966, however, included 672,000 pounds, valued at \$552,000, temporarily imported from Canada for manufacture and reexport. The imports covered herein were generally insignificant compared with domestic production. Annual U.S. imports since 1960 have not exceeded 1 percent of the U.S. consumption. They have consisted mainly of tops and sliver similar to those made domestically.

Imports are small principally because foreign manufacturers have not yet significantly entered into processing manmade fibers on direct-processing machines. The production of direct-processed manmade fibers that does exist is usually immediately consumed within the country. In addition, direct-processing technology is not as advanced in many foreign countries as it is in the United States; therefore, the quality of the imported processed manmade fibers is often not equal to that of its domestic counterpart. Imports are also minor because most domestic spun-yarn manufacturers, the principal users, presently prefer locally obtainable processed manmade fibers.

The sources of imports have varied since 1960; there has been no consistent supplier. The occasional imports have consisted mainly of nylon tops from Switzerland, Italy, and France; acrylic tops from Japan; blended manmade sliver from Canada; and polyester tops from the United Kingdom.

Table 2.--Manmade fibers, processed but not spun: U.S. exports of domestic merchandise, by principal markets, 1961-68

Market	1961	1962	1963	1964	1965	1966	1967	1968
Quantity (1,000 pounds)								
Peru-----	596	293	408	1,029	1,275	1,225	908	1,000
Brazil-----	-	-	-	7	41	290	351	351
Canada-----	740	279	183	205	960	1,006	1,379	852
Uruguay-----	6	19	31	220	50	80	98	179
Mexico-----	54	21	36	15	62	16	23	275
West Germany----	4	4	307	176	232	35	39	302
Italy-----	50	-	16	17	353	1,437	418	193
France-----	-	12	2	79	125	251	97	162
Belgium and Luxembourg----	3	1	2	1	88	161	98	32
United Kingdom---	1,888	229	288	90	67	21	63	24
Netherlands-----	97	15	304	111	299	143	11	276
Ecuador-----	1/	5	68	326	110	36	24	16
Colombia-----	50	115	104	93	27	-	-	-
All other-----	368	2/ 408	145	321	3/ 951	4/ 1,459	833	1,203
Total-----	3,856	1,401	1,894	2,690	4,640	6,160	4,342	4,865
Value (1,000 dollars)								
Peru-----	880	408	522	1,217	1,439	1,373	915	985
Brazil-----	-	-	-	8	46	330	393	342
Canada-----	683	305	188	230	703	480	615	327
Uruguay-----	9	28	47	294	63	85	93	168
Mexico-----	80	30	51	10	78	19	13	122
West Germany----	5	6	139	78	132	56	29	107
Italy-----	17	-	12	19	97	439	203	66
France-----	-	20	2	103	102	166	60	43
Belgium and Luxembourg----	3	2	3	1	56	96	82	33
United Kingdom---	2,592	287	394	132	83	25	47	26
Netherlands-----	76	21	92	50	103	47	15	25
Ecuador-----	1	7	88	398	128	38	23	16
Colombia-----	74	160	156	144	39	-	-	-
All other-----	521	2/ 565	189	272	3/ 756	4/ 958	452	466
Total-----	4,941	1,836	1,883	2,956	3,825	4,112	2,940	2,726

1/ Less than 500 pounds. 2/ Includes 107 thousand pounds, valued at 146 thousand dollars, exported to Israel and 90 thousand pounds, valued at 123 thousand dollars, exported to Greece.

3/ Includes 147 thousand pounds, valued at 109 thousand dollars, exported to Turkey.

4/ Includes 181 thousand pounds, valued at 86 thousand dollars, exported to Switzerland.

Source: Compiled from official statistics of the U.S. Department of Commerce.

MANMADE FIBERS, PROCESSED BUT NOT SPUN

Table 3.--Manmade fibers, processed but not spun: U.S. imports for consumption, by principal sources, 1961-68

Source	1961	1962	1963	1964	1965	1966	1967	1968
	Quantity (1,000 pounds)							
Canada-----	-	-	30	1	8 :1/	686	11	58
France-----	5	7	1	9	15	-	1	8
United Kingdom--	23	28	5	1	5	1	32	2/
Switzerland-----	-	3	116	53	15	-	-	1
Japan-----	201	349	39	8	2	47	29	2/
West Germany-----	-	6	19	12	-	1	-	-
Italy-----	1	192	49	-	7	-	2/	-
All other-----	6	-	-	2/	-	-	-	2
Total-----	236	585	259	84	52	737	73	69
	Value (1,000 dollars)							
Canada-----	-	-	4	1	7 :1/	565	6	33
France-----	4	4	1	53	12	-	1	22
United Kingdom--	18	28	4	1	4	4	20	5
Switzerland-----	-	2	105	47	10	-	-	1
Japan-----	131	227	25	4	1	25	17	3/
West Germany-----	-	3	15	7	-	4	-	-
Italy-----	3/	141	25	-	5	-	3/	-
All other-----	6	-	-	3/	-	-	-	1
Total-----	159	405	179	113	39	598	44	62

1/ Includes 672 thousand pounds, valued at 552 thousand dollars, imported for further processing under bond and export.

2/ Less than 500 pounds.

3/ Less than \$500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS</u> <u>item</u>
Yarns:	
Of glass-----	309.98, -.99
Other, wholly of continuous manmade fibers---	310.01, -.02,
	-.05, -.06, -.10, -.11, -.20, -.21

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

The United States is the world's largest producer and the sixth largest exporter of yarns wholly of continuous manmade fibers and yarns of glass that are manufactured by fiber-extruding companies. Such yarns subjected to additional twisting, plying, or texturing by other companies are less important in U.S. trade. Imports of the yarns above mentioned are small, and for the simpler yarns imports constitute less than 1 percent of U.S. consumption.

Description and uses

The yarns wholly of continuous manmade fibers covered in this summary consist of two or more filaments, other than glass filaments, grouped together with some twist. All filaments comprising the yarn must exceed 30 inches in length. The glass yarns covered in this summary consist of all yarns wholly or in chief value of glass fibers, whether continuous or noncontinuous, with some twist.

Like monofilaments, grouped filaments used in making yarns of continuous manmade fibers can be extruded in a variety of forms, depending on the shapes of the holes in the spinnerets. They can also be modified by controlling the flow of the polymer during extrusion to form specialized types, such as slub, crepe, crimp, and thick-and-thin. The filaments used in making glass yarns, however, are rarely extruded in modified forms because of the physical composition of the glass.

Filaments used in making yarns of continuous manmade fibers are generally extruded as grouped filaments. After extrusion the grouped filaments are twisted (one-fifth of a turn--or more--per inch, referred to in the trade as producers' twist) and become singles yarns. After the producers' twist is inserted, the yarns are (1) shipped directly to customers without further modification, or (2) given additional twists by the producers and shipped, or (3) plied by the

producers and shipped as plied yarns, or (4) subjected by the producers to a process known as texturing 1/ and shipped. Some extruded yarns (especially for industrial purposes, as in tires) are woven into fabrics by the yarn producers and then sold. The processes numbered (2), (3), and (4) are covered by this summary, but these processes may also be performed by a manufacturing customer using the yarns described in (1) above. Glass yarns, both of continuous and noncontinuous fibers, are also manufactured and distributed in the same manner as yarns of continuous manmade fibers.

The current commercially important types of continuous yarns in the United States are manufactured from acetate, rayon, glass, nylon, olefin, polyester, acrylic, or fluorocarbon fibers. 2/ Continuous filament yarns are composed of 2 to more than 2,500 filaments. The deniers 3/ range from 10 to more than 63,000 grams. Yarns are manufactured in two grades, either first (standard) grade or seconds (sub-standard grades).

The yarns covered in this summary are generally shipped on beams, bobbins, cakes, cones, pirns, spools, or tubes, and in skeins. The price per pound is usually higher for acetate yarns if shipped on beams than if shipped on cones; it is higher for rayon yarns if shipped on beams or cones than on cakes, for nylon yarns if shipped on beams or spools than on bobbins or pirns, for polypropylene (an olefin) yarns if shipped on cones than on pirns, and for glass yarns if shipped on beams than on bobbins.

The yarns enter into a variety of uses including wearing apparel, home furnishings, other consumer types of products, and industrial products.

1/ The products made by this process are known as textured yarns. According to the TSUSA-1969, "the term 'textured', as used with reference to yarns, means such yarns having special characteristics of bulk or elasticity, or both, which have been imparted to the filaments, or the yarns, by twisting and untwisting, false twisting, crimping, curling, or other additional processing subsequent to the extrusion of the filaments from the spinneret"

2/ Except for fluorocarbon fibers, all fibers named here are defined and given generic recognition under the Textile Fiber Products Identification Act of 1960. Fluorocarbon fibers are manufactured from tetrafluoroethylene and hexafluoropropylene polymers.

3/ Denier is the weight in grams for a length of 9,000 meters.

YARNS WHOLLY OF CONTINUOUS MANMADE FIBERS AND YARNS OF GLASS 119

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate pursuant to U.S. con- cessions granted in 1964- prior to 67 trade conference (Kennedy Round)		
		Jan. 1, 1968	Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Glass yarns:			
309.98:	Not colored-----	21%	16.5%	10.5%
309.99:	Colored-----	30%	24%	15%
	Yarns wholly of continuous manmade fibers:			
	Singles with twist but not over 20 turns per inch:			
310.01:	Valued not over \$1 per pound.	25¢	20¢	12.5¢
310.02:	Valued over \$1 per pound.	22.5%	19.5%	16%
	Singles with over 20 turns per inch:			
310.05:	Valued not over \$1 per pound.	50¢	40¢	25¢
310.06:	Valued over \$1 per pound.	22.5¢ + 25%	18¢ + 20%	11¢ + 12.5%
	Plied with not over 20 turns per inch in the final twist:			
310.10:	Valued not over \$1 per pound.	32.5¢	26¢	16¢
310.11:	Valued over \$1 per pound.	27.5%	22%	13.5%
	Plied with over 20 turns per inch in the final twist:			
310.20:	Valued not over \$1 per pound.	50¢	40¢	25¢
310.21:	Valued over \$1 per pound.	22.5¢ + 27.5%	18¢ + 22%	11¢ + 13.5%

120 YARNS WHOLLY OF CONTINUOUS MANMADE FIBERS AND YARNS OF GLASS

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. For item 310.02, the concession amounted to a reduction of about 29 percent in the duty; for all other items, the concessions amounted to reductions of about 50 percent in the duties.

The average ad valorem equivalents of the specific and compound rates of duty in effect prior to January 1, 1968, and those to be effective on January 1, 1972, based on the value of dutiable imports in 1968 except as noted, were as follows:

TSUS item	Average ad valorem equivalent of--	
	Rate prior to Jan. 1, 1968	Final stage of Kennedy Round, Jan. 1, 1972
310.01-----	32.6%	16.3%
310.05-----	66.7%	33.3%
310.06-----	32.6%	16.2%
310.10-----	41.1%	20.2%
310.20-----	<u>1/</u> 51.7%	<u>1/</u> 25.8%
310.21-----	36.0%	17.7%

1/ Based on imports in 1967; there were no imports in 1968.

U.S. consumption

U.S. consumption of yarns wholly of continuous manmade fibers and yarns of glass increased from about 1,096 million pounds, valued at \$1,316 million, in 1961 to 2,564 million pounds, valued at about \$3,171 million, in 1968 (table 1). Approximately 42 percent of the quantity of yarns of continuous manmade fibers consumed in 1968 consisted of nylon; 17 percent, of rayon; 16 percent, of acetate; 10 percent, of glass; 6 percent, of olefin; and 9 percent, of others, primarily polyester. In 1968 nylon fibers accounted for about 54 percent of the value of consumption; rayon for 14 percent; acetate, for 12 percent; olefin, for 5 percent; glass, for 4 percent; and others, notably polyester, for 11 percent. In 1967 the largest amount of continuous rayon filament yarn was consumed in tires; that of acetate, in dresses and apparel

linings; that of nylon, in tires and carpets; that of polyester, in several apparel uses; that of olefin, in ropes and cordage; and that of glass, in reinforcement of plastics.

Most yarns covered herein are consumed in the southeastern States; the majority of the imports enter through ports in these States. Domestic and imported yarns can generally be processed on identical equipment; occasionally, both kinds, especially nylon and rayon yarns, are consumed in the same plants for the same uses.

U.S. consumption of yarns of continuous manmade fibers and yarns of glass has expanded since 1960 because of effective substitution of such yarns for yarns of natural fibers and because of new developments, improved products, increasing consumer acceptance, and price stability. Rayon, acetate, and nylon yarns were effectively substituted for silk in many apparel and industrial uses. Nylon and olefin yarns replaced other yarns used in ropes and cordage. Development of new products--such as textured yarns and higher-heat-resistant yarns as well as improvement of existing types, stimulated additional consumption. Typical examples of improved products were stronger rayon yarns for tire applications, deeper-dyeing nylon and olefin yarns for apparel and household use, and acetate, rayon, and glass yarns with greater electrical resistance for wire insulation, wire covering, and friction tape. With the aid of intensive consumer advertising by yarn producers, manmade fibers--especially those manufactured into continuous filament yarns--gradually began to gain favorable consumer acceptance; the result was an increase in yarn consumption. The price stability of many types of continuous yarns since 1960 has also been a factor in stimulating consumption: most important types, notably nylon yarns, have remained unchanged in price since that year, and some types of polyester, acetate, rayon, and industrial nylon yarns were reduced in price after 1961.

U.S. producers

In 1969, there were 27 U.S. companies manufacturing the yarns covered herein from raw materials (i.e., polymers). All but one are large corporations that usually manufacture other products in addition to yarns. The companies operate 62 plants which convert polymers into the yarns considered here. More than two-thirds of the plants are situated in the South Atlantic States, primarily in North Carolina, South Carolina, and Virginia. Tennessee also has a large number of polymer-to-yarn plants. Most of the plants concentrate on one generic type of manmade fiber. Only three manufacture exclusively the types of products covered by this summary.

addition, some foreign corporations have subsidiaries producing yarns of continuous manmade fibers in the United States. Only a few of the U.S. companies that manufacture the further processed yarns covered here, however, have interests in plants producing them in foreign countries.

U.S. production

U.S. production of producers' twist yarns is shown in table 1. The other yarns covered in this summary are usually manufactured from the producers' twist yarns. The output of producers' twist yarns increased from 1,175 million pounds, valued at \$1,405 million, in 1961 to 2,597 million pounds, valued at \$3,196 million, in 1968. A portion of the producers' twist yarn is further processed by the manmade fiber producers themselves into products mainly covered by this summary. However, the greater part of the production is shipped to customers that process the yarns for their own use or for sale to other textile manufacturers.

Production of yarns from continuous cellulosic (rayon or acetate) fibers was estimated to have increased from somewhat more than 630 million pounds, valued at more than \$580 million, in 1961 to more than 875 million pounds, valued at more than \$810 million, in 1968. Production of yarns from continuous noncellulosic (nylon, polyester, olefin, and so forth) fibers is estimated to have increased from about 430 million pounds, valued at more than \$760 million, in 1961 to nearly 1,460 million pounds, valued at about \$2,250 million, in 1968. Glass yarn production was about 112 million pounds, valued at \$60 million, in 1961; it increased to more than 260 million pounds, valued at about \$135 million, in 1968. Yarns of continuous nylon filaments are believed to have accounted for the largest quantity of continuous manmade fiber yarns produced domestically in 1968, and viscose yarns, for the next largest quantity. Acetate yarns were probably third in quantity in that year, followed by yarns of glass and those of polyester.

U.S. exports

In 1961-68, U.S. exports of yarns wholly of continuous manmade fibers and yarns of glass fluctuated from 84 million pounds, valued at \$93 million, in 1961 to 116 million pounds, valued at \$136 million, in 1964 (table 1). In 1968 the composition of the exports and the average value per pound, according to official statistics of the U.S. Department of Commerce, were as follows:

Type of yarn made of continuous filaments	: Quantity :	Value	: Unit : value 1/	: Percent of total quan- tity exported
	: <u>1,000</u> :	<u>1,000</u>	<u>Per</u>	:
	: <u>pounds</u> :	<u>dollars</u>	<u>pound</u>	:
Cellulosic:	:	:	:	:
Acetate-----	: 7,394 :	5,715	\$0.77	: 8
Rayon:	:	:	:	:
High tenacity-----	: 8,569 :	4,116	.48	: 10
Regular and intermediate:	:	:	:	:
tenacity-----	: 1,130 :	739	.65	: 1
Tire cord-----	: 4,702 :	4,277	.91	: 5
Noncellulosic:	:	:	:	:
Nylon:	:	:	:	:
High tenacity-----	: 10,139 :	11,164	1.03	: 11
Other-----	: 35,086 :	39,947	1.14	: 39
Polyester-----	: 9,980 :	10,476	1.05	: 11
Glass-----	: 4,052 :	2,418	.60	: 5
Tire cord-----	: 5,243 :	5,901	1.13	: 6
Other-----	: 3,350 :	3,817	1.14	: 4
Total-----	: 89,645 :	88,570	.99	: 100
	:	:	:	:

1/ Calculated from the unrounded figures.

The largest poundage exported in 1968 consisted of nylon yarns; next in importance were polyester yarns, followed by rayon, third, and acetate, fourth.

In 1968, nylon yarns other than high tenacity were shipped principally to Switzerland, the United Kingdom, Belgium and Luxembourg, and Canada; nylon tire cord, to Nigeria, Guatemala, Iran, and Venezuela; and nylon high tenacity yarns, to Switzerland, Belgium and Luxembourg, and Israel. Acetate yarns were exported mainly to Belgium and Luxembourg, the Republic of Korea, and Canada; viscose tire cord, to Venezuela, Canada, and Ecuador; and polyester yarns, to Switzerland, the United Kingdom, and Canada.

The ratio of the quantity of U.S. exports to that of domestic production of the yarns covered here varied from 3 percent in 1968 to almost 8 percent in 1962. In the period 1961-67, annual exports were three times as great as imports (in 1967) up to 16 times as great (in 1961) (table 1); however, in 1968 they were only about one and a half times as great.

Table 2 shows the leading foreign markets in 1961-68 for all the yarns covered in this summary. The markets varied considerably in importance in these years because (1) the establishment of new foreign yarn plants (in India, Australia, the Republic of Korea, and Argentina) usually caused the imports of yarns similar to those manufactured by the new plants to decline; (2) new foreign markets (South Viet-Nam and Iran) for U.S. exports of yarns had been developed; (3) U.S. exports to established foreign markets (Canada, Switzerland, the Netherlands, and Belgium and Luxembourg) had been expanded; and (4) U.S. exports to certain foreign markets (the Philippines, the Republic of Korea, France, and Mexico) had declined as a result of intensified competition from other foreign yarn suppliers.

U.S. imports

U.S. imports for consumption of the yarns considered herein increased from about 5 million pounds, valued at almost \$5 million, in 1961 to 57 million pounds, valued at more than \$63 million, in 1968 (table 1). The ratio of the quantity of imports to that of consumption rose from one-half of 1 percent in 1961 to more than 2 percent in 1968.

Of the total imports in 1961-68, quantities were imported free for further processing under bond and export as follows:

<u>Year</u>	<u>1,000 pounds</u>
1961-----	40
1962-----	78
1963-----	150
1964-----	238
1965-----	160
1966-----	498
1967-----	965
1968-----	26

In 1967, the peak year, imports given drawback privileges amounted to almost 4 percent of the total yarns imported.

The lower priced imports have been principally viscose yarns and the higher priced imports, mostly nylon yarns. Some of the leading types of imports made of continuous filaments since 1964 are shown in the following tabulation:

<u>Type of yarn</u>	<u>Description</u>	<u>Use</u>
Viscose-----	1650 denier, high tenacity	tires
Acetate-----	200 denier, solution-dyed	apparel
Nylon-----	40 denier, dull luster	apparel
Nylon-----	70 denier, semidull luster	apparel
Nylon-----	840 denier, high tenacity	tires
Nylon-----	3700 denier, textured	carpets
Polyester-----	40 denier, dull luster	apparel
Polyester-----	70 denier, high tenacity	industrial
Polyester-----	250 denier, bright luster	apparel
Polyester-----	1100 denier, high tenacity	tires

Each of the imported types listed above is either similar to or identical with a domestic product. They could generally be utilized on the same types of machinery; in addition, their quality was usually equal to that of the competitive domestic product and sometimes better. Almost all of the imported products are lower in price than the domestic products.

Since 1960 the principal sources of imports of the yarns covered herein have been West Germany, Italy, France, Canada, Switzerland, and Japan (table 3). Since 1964 glass yarns have been imported largely from the Netherlands and France; viscose yarns, from West Germany and the Netherlands; acetate, from Italy, Canada, and France; nylon, from Japan, Canada, and Italy; and polyester, from Canada and West Germany.

Foreign production and trade

All the yarns covered in this summary are involved in world trade. Most of the world trade, however, consists of producers' twist yarns manufactured by companies which extrude the filaments from the raw materials (i.e., polymers). Outside the United States, there are more than 300 of these companies--some state owned--operating almost 400 plants in about 50 countries. The companies are usually large organizations; a noticeable number operate plants in more than one country. Almost all the foreign companies manufacture other textile products not covered in this summary but generally make the other products from the same raw materials (i.e., polymers) as are used in the yarns. Almost half of the 400 foreign plants operated by these companies are situated in six countries--Japan, Italy, the United Kingdom, the U.S.S.R., India, and France.

Total foreign production of producers' twist yarns is considerably larger than U.S. production, though the United States is the leading producing country in the world. The following tabulation, based on data published by Textile Organon, compares world production and U.S. production of producers' twist yarns in 1961-67:

Year	World production	U.S. production		
		Quantity	Percent of	
			world production	
	<u>Million</u> <u>pounds</u>	<u>Million</u> <u>pounds</u>		
1961-----	2,702	1,225		45
1962-----	3,031	1,455		48
1963-----	3,294	1,524		46
1964-----	3,779	1,735		46
1965-----	4,057	1,945		48
1966-----	4,414	2,102		48
1967-----	4,591	2,056		45

In spite of increasing world production of producers' twist yarns, the United States still produces almost half of the world output. Other leading producing countries in 1967 were Japan, the U.S.S.R., the United Kingdom, West Germany, Italy, and France. Foreign production of producers' twist yarns has been principally of viscose; nylon ranked second; acetate, third; and polyester, fourth.

In 1967 the foremost world exporter of producers' twist yarns was Italy, followed (in order) by West Germany, Japan, the Netherlands, the United Kingdom, and the United States. The largest importer was West Germany, followed by France and the Republic of Korea.

All the countries that manufacture producers' twist yarns also have facilities to process such yarns further by either twisting, plying, or texturing. Many countries have companies that perform all three processes. Except for the producers in Communist-dominated countries, the foreign companies that process yarns are usually organized similarly to those in the United States. Very few companies operate in more than one country, and most derive their principal income from sales of processed yarns. Outside the United States, most of the establishments manufacturing the processed yarns covered herein are in Western Europe. The second largest number of plants is believed to be in Japan, and the third largest, in the Communist-dominated countries of Eastern Europe. No foreign production, export, and import statistics are available on yarns processed further than producers' twist; however, world trade in such yarns is considerably less than that in producers' twist yarns.

Table 1.--Yarns wholly of continuous manmade fibers and yarns of glass: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1961-68

(Quantity in thousands of pounds; value in thousands of dollars)						
Year	Production <u>1/</u>	Imports	Exports <u>2/</u>	Apparent consumption	Ratio (per cent) of imports to consumption	
Quantity						
1961----	<u>3/</u> 1,174,518	<u>4/</u> 5,206	<u>5/</u> 84,005	1,095,719		0.5
1962----	1,414,296	<u>4/</u> 7,415	<u>5/</u> 109,893	1,311,818		.6
1963----	1,497,679	<u>4/</u> 6,545	<u>5/</u> 98,080	1,406,144		.5
1964----	1,708,186	8,224	<u>5/</u> 116,091	1,600,319		.5
1965----	1,915,351	13,831	96,917	1,832,265		.8
1966----	2,062,004	14,996	95,337	1,981,663		.8
1967----	2,037,745	27,262	85,728	1,979,279		1.4
1968----	2,596,781	57,126	89,645	2,564,262		2.2
Value						
1961----	<u>3/</u> 1,404,538	<u>4/</u> 4,925	<u>5/</u> 92,994	1,316,469	<u>6/</u>	
1962----	1,708,863	<u>4/</u> 7,522	<u>5/</u> 119,062	1,597,323	<u>6/</u>	
1963----	1,856,870	<u>4/</u> 7,821	<u>5/</u> 108,700	1,755,991	<u>6/</u>	
1964----	2,083,652	9,331	<u>5/</u> 136,014	1,956,969	<u>6/</u>	
1965----	2,355,870	13,523	106,253	2,263,140	<u>6/</u>	
1966----	2,726,834	14,492	101,751	2,639,575	<u>6/</u>	
1967----	2,487,889	28,245	87,049	2,429,085	<u>6/</u>	
1968----	3,196,249	63,321	88,570	3,171,000	<u>6/</u>	

1/ Production partly estimated from Textile Organon figures; value partly based on list prices published in Modern Textiles Magazine for the yarns covered here.

2/ Includes negligible amounts of chopped strands and roving of glass (see separate summary).

3/ Includes negligible amounts of chopped glass strands.

4/ Prior to September 1963, glass-yarn imports were not separately reported in official statistics; such imports, however, were estimated by the U.S. Tariff Commission staff and have been included in the table.

5/ Estimated. Data on exports of monofilaments and yarn were reported together in 1961-64. It was necessary to eliminate the estimated exports of monofilaments from the reported data in arriving at the amounts indicated.

6/ Not meaningful.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

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Table 2.--Yarns wholly of continuous manmade fibers and yarns of glass:
U.S. exports of domestic merchandise, by principal markets, 1961-68

Market	1961	1962	1963	1964	1965	1966	1967	1968
	Quantity (1,000 pounds)							
Switzerland-----	1,000	1,335	214	206	146	758	5,142	28,516
Canada-----	6,025	7,254	6,244	12,500	10,353	12,884	14,590	17,216
United Kingdom-----	518	1,298	3,814	13,415	11,747	6,663	3,989	7,200
Belgium and Luxembourg-----	1,921	1,729	7,864	10,112	14,950	12,312	8,643	6,779
Netherlands-----	1,498	1,034	2,973	2,580	2,414	5,452	10,314	2,973
Venezuela-----	4,855	4,623	4,093	6,089	4,401	4,470	3,077	2,659
Israel-----	986	3,124	2,443	1,777	2,548	2,341	2,176	2,028
West Germany-----	5,842	8,302	9,118	10,215	6,935	8,644	6,804	1,545
Guatemala-----	239	287	546	796	658	1,876	1,047	1,500
Korean Republic-----	3,295	16,305	8,481	2,745	3,028	2,110	2,386	1,948
Japan-----	335	997	2,752	1,061	481	232	1,998	2,098
Australia-----	3,082	6,074	2,528	3,264	2,334	2,170	1,846	1,229
Republic of South Africa--	4,057	4,500	4,513	8,043	4,160	2,178	1,514	971
Iran-----	271	103	527	818	1,601	946	1,243	859
Ecuador-----	855	883	1,016	767	600	737	992	825
Chile-----	893	982	1,823	3,694	3,253	3,124	1,915	896
Colombia-----	3,101	2,677	2,572	3,017	2,833	5,057	2,567	691
Turkey-----	1,149	2,706	1,574	7,646	5,957	4,317	2,194	880
India-----	9,292	19,414	13,781	5,309	1,133	564	1,598	741
Mexico-----	4,698	3,482	1,601	1,663	1,399	419	250	344
Spain-----	124	143	540	1,199	1,042	1,803	231	477
Viet-Nam-----	87	42	7	999	1,227	2,901	1,563	357
Philippines-----	3,085	3,202	3,141	3,673	1,579	1,793	1,618	255
Peru-----	1,780	1,753	1,788	1,832	1,639	2,226	1,063	185
France-----	1,788	3,768	2,931	1,211	661	396	346	180
Argentina-----	8,253	4,464	1,779	1,432	1,225	455	111	86
Portugal-----	334	337	323	1,093	1,387	1,443	631	119
All other-----	14,641	9,075	9,094	15,815	7,226	7,066	5,880	6,088
Total-----	84,005	109,893	98,080	116,091	96,917	95,337	85,728	89,645

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Table 2.--Yarns wholly of continuous manmade fibers and yarns of glass: U.S. exports of domestic merchandise, by principal markets, 1961-68--Continued

Market	1961	1962	1963	1964	1965	1966	1967	1968
	Value (1,000 dollars)							
Switzerland-----	752	1,310	310	314	267	707	4,923	29,305
Canada-----	6,156	8,100	7,260	12,657	12,847	13,109	11,855	13,688
United Kingdom-----	861	1,547	3,672	12,029	10,300	7,067	4,650	7,760
Belgium and Luxembourg-----	3,123	2,762	3,620	14,222	12,780	9,982	7,947	7,016
Netherlands-----	3,384	2,512	9,903	7,497	3,455	7,194	11,508	3,376
Venezuela-----	6,166	6,594	5,484	7,259	5,313	5,068	3,506	3,022
Israel-----	898	1,952	1,941	1,762	2,482	2,158	2,013	1,994
West Germany-----	9,748	12,569	15,562	14,766	9,560	10,392	8,211	1,931
Guatemala-----	281	303	579	960	709	1,902	1,048	1,557
Korean Republic-----	2,788	18,083	6,671	2,124	2,650	1,677	1,620	1,425
Japan-----	457	969	2,557	1,144	1,343	449	1,293	1,310
Australia-----	3,507	7,892	3,515	4,372	2,459	2,520	2,069	1,261
Republic of South Africa--	3,542	3,956	3,845	8,231	4,948	2,606	1,864	1,232
Iran-----	307	167	683	1,030	1,382	1,011	1,423	993
Ecuador-----	521	632	958	922	747	835	1,054	921
Chile-----	1,376	894	1,497	2,456	2,302	2,266	1,555	828
Colombia-----	2,683	2,295	2,118	3,157	3,070	5,181	2,597	819
Turkey-----	2,052	4,119	1,966	7,842	5,539	4,975	2,517	801
India-----	5,116	10,492	7,759	4,403	1,089	450	1,473	758
Mexico-----	7,077	5,477	2,174	3,064	2,341	658	360	583
Spain-----	366	241	683	1,582	1,359	2,166	464	433
Viet-Nam-----	80	34	16	2,198	2,880	4,889	2,605	416
Philippines-----	3,088	2,960	3,298	4,003	1,846	1,935	1,625	322
Peru-----	2,078	2,102	2,267	2,181	2,023	2,549	1,258	256
France-----	2,701	5,235	3,340	1,473	791	617	444	253
Argentina-----	10,002	5,753	2,593	2,377	1,888	666	190	146
Portugal-----	648	580	408	1,101	1,719	1,281	546	75
All other-----	13,236	9,532	9,021	10,888	8,164	7,441	6,431	6,089
Total-----	92,994	119,062	108,700	136,014	106,253	101,751	87,049	88,570

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 3.--Yarns wholly of continuous manmade fibers and yarns of glass:
U.S. imports for consumption, by principal sources, 1961-68

Source	1961	1962	1963	1964	1965	1966	1967	1968
	Quantity (1,000 pounds)							
West Germany----	190	296	325	330	1,808	2,417	8,291	17,883
Italy-----	2,659	4,660	4,345	2,789	3,107	2,138	3,790	10,407
France-----	63	94	203	631	886	1,598	4,158	4,474
Japan-----	543	842	341	194	1,565	1,049	519	3,158
United Kingdom--	20	21	34	208	268	203	1,326	4,118
Israel-----	216	-	61	109	113	393	883	2,051
Canada-----	298	7	52	1,662	2,097	4,807	2,411	3,559
Netherlands-----	537	358	366	433	1,443	939	829	2,648
Belgium and Luxembourg----	22	32	36	390	319	249	536	1,625
Switzerland-----	602	1,015	471	863	1,288	845	3,383	1,108
All other-----	56	90	311	615	937	358	1,136	<u>1/</u> 6,095
Total-----	5,206	7,415	6,543	8,224	13,831	14,996	27,262	57,126
	Value (1,000 dollars)							
West Germany----	205	311	355	434	2,201	2,885	10,880	21,292
Italy-----	2,956	5,518	5,524	3,476	2,957	1,967	3,382	10,570
France-----	105	180	501	829	1,030	1,896	4,479	6,098
Japan-----	309	422	163	236	1,786	900	598	4,281
United Kingdom--	24	25	73	285	339	367	1,255	3,772
Israel-----	155	-	78	133	122	533	1,249	2,748
Canada-----	248	12	107	2,077	2,283	4,077	1,852	2,681
Netherlands-----	457	226	250	247	688	494	452	1,982
Belgium and Luxembourg----	23	26	33	382	307	209	585	1,784
Switzerland-----	407	721	401	740	1,074	789	2,246	957
All other-----	36	81	335	492	736	375	1,267	<u>1/</u> 7,156
Total-----	4,925	7,522	7,821	9,331	13,523	14,492	28,245	63,321

1/ Includes 2,145 thousand pounds, valued at 2,858 thousand dollars, imported from Spain.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Note.--Includes merchandise imported free for further processing under bond and export. See text.

<u>Commodity</u>	<u>TSUS item</u>
Yarns wholly of noncontinuous manmade fibers-----	310.40, -.50

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. production of yarns wholly of noncontinuous manmade fibers constitutes the great bulk of U.S. consumption of such yarns. Yarns spun from staple fibers predominate, although yarns made by direct-processing machines are becoming important. U.S. exports and imports are each equivalent to less than half of 1 percent of domestic consumption.

Description and uses

The yarns covered here are manufactured from noncontinuous manmade fibers except glass. Yarns of noncontinuous glass fibers (items 309.98 and 309.99) and those of noncontinuous manmade fibers used in combination with continuous manmade fibers or natural fibers (item 310.60) are covered in separate summaries. Staple fibers (items 309.41 to 309.50) are the dominant form of raw material used in making yarns wholly of noncontinuous fibers. Grouped filaments (items 309.28 to 309.35) are the other major form; they are broken into short fibers by various direct-processing machines. Staple usually requires carding or combing before it is spun into yarn; the broken fibers made by direct-processing machines do not need carding or combing but are drafted by the same machines into forms that are spun into yarn. Yarns made from staple or from grouped filaments on direct-processing machines are known in the trade as spun yarns.

Yarns spun from staple have several advantages over yarns spun from direct-processed grouped filaments. Spun staple yarns are versatile; they can be processed to achieve various effects without many modifications of machinery, they can be crimped to present a bulkier effect, and they can easily be made of blended fibers. Moreover, they have lower material costs. On the other hand, direct-processed spun yarns have certain advantages over spun staple yarns. Direct-processed spun yarns have greater fiber lengths, they remain relatively cleaner and more even during processing, and they have more shrink resistance when used in fabrics that are wet finished.

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All manmade fibers can be made into spun yarns. The fibers can be spun into yarn on cotton, worsted, woolen, spun silk, or flax spinning machines. The yarns can be manufactured as singles (item 310.40) or plied (item 310.50). The plied yarns are formed by doubling and twisting together two or more singles yarns. Spun yarns of manmade fibers, both singles and plied, are generally numbered in the same manner as spun yarns of natural fibers.

Yarns wholly of noncontinuous manmade fibers (except glass) are used principally in weaving and knitting fabrics which simulate in appearance and texture various types of cloth made of cotton, wool, linen, and spun silk which are used by the dress, suit, and sports-apparel manufacturers. Spun yarns are also used in the manufacture of handkerchief and diaper cloth, knit gloves, underwear and outerwear, velvets, plushes, drapery and upholstery fabrics, tablecloths, blankets, towels, and other products. Spun yarns of manmade fibers enter into a number of industrial products, chief of which are transmission belting, hose, wire wrapping, insulation, wiping cloths, book bindings, luggage covering, chafer fabrics, mechanical rubber goods, and resin-bonded and laminated plastic products.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)	
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
	Yarns wholly of non-continuous man-made fibers:			
310.40	Singles-----	6.25¢ + 22.5%	5¢ + 18%	3.1¢ + 11%
310.50	Plied-----	6.25¢ + 25%	5¢ + 20%	3¢ + 12.5%

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the

five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Concessions amounting to reductions of about 50 percent in the duties were granted by the United States in the Kennedy Round on both of the items listed above.

The average ad valorem equivalents of the compound rates of duty in effect prior to January 1, 1968, and those to be effective on January 1, 1972, based on the value of dutiable imports in 1968, were as follows:

TSUS item	Average ad valorem equivalent of--	
	Rate prior to Jan. 1, 1968	Final stage of Kennedy Round, Jan. 1, 1972
310.40-----	33.4%	16.4%
310.50-----	32.9%	16.3%

U. S. consumption

During 1961-68, U.S. consumption of yarns of noncontinuous manmade fibers increased from 522 million pounds, valued at \$445 million, in 1961 to 1,408 million pounds, valued at \$1,192 million, in 1968 (table 1). Approximately 35 percent of the quantity consumed in 1961 consisted of rayon spun yarns; 33 percent, of spun yarns of rayon blended with other manmade fibers; 17 percent, of acrylic and modacrylic spun yarns; and the remaining 15 percent, of spun yarns wholly of other manmade fibers or of blends of them. In 1967, the latest year for which data are available, the composition of the consumption changed somewhat: 29 percent of the quantity consumed consisted of rayon spun yarns; 28 percent, of acrylic and modacrylic spun yarns; 22 percent, of spun yarns of rayon blended with other manmade fibers; 8 percent, of polyester and polyester-blended spun yarns; and the remaining 13 percent, of spun yarns wholly of other manmade fibers or of blends of them. In 1961 and 1967 the spun yarns covered herein were consumed in largest quantity for weaving purposes; in second largest, in carpets and rugs; and in third largest, in the knitting trades.

An increase in consumption of the spun yarns developed in five major areas during 1961-67: (1) Woven fabrics, (2) knitted fabrics, (3) carpets and rugs, (4) tufted textiles, and (5) cordage. The

greatest increase occurred in the consumption of the newer manmade fibers (acrylic, polyester, and so forth). Consumption of some of the older manmade fibers (rayon, acetate) also increased, but at a slower rate. The introduction of additional types of spun manmade fiber yarns, particularly in carpets, rugs, and tufted textiles was a notable factor in the increase.

U.S. producers

Approximately 300 U.S. companies operating almost 400 plants manufacture spun yarns wholly of manmade fibers. More than half of the plants are in the South Atlantic States, primarily in North Carolina, and more than a third are in New England and the Middle Atlantic States, notably Massachusetts and Pennsylvania. The plants are numerically about equally divided among those that are large (employing more than 500 workers), medium (with 100 to 500 workers), and small (with fewer than 100 workers). The large plants account for the major part of the production. Some of the domestic companies have branch plants and affiliated plants in foreign countries.

Although production of spun yarns for sale is much smaller than that of output for internal use, the yarns for sale are manufactured in a larger number of plants. A fairly small number of plants produce spun yarns both for sale and for their own consumption. Most plants produce several types of spun yarns; only a few manufacture spun yarns wholly of manmade fibers as their sole product. More than 75 percent of the plants manufacturing the spun yarns covered herein have other important sources of income--usually the production of fabrics or spun yarns of natural fibers or of blends of natural and manmade fibers.

U.S. production

U.S. production of spun yarn wholly of manmade fibers more than doubled from 1961, when it amounted to 524 million pounds, valued at \$449 million, to 1968, when it amounted to 1,405 million pounds, valued at \$1,191 million (table 1). Most production is captive, i.e., consumed in the plant where it is made, and only about 500 million pounds is estimated to have entered trade channels in 1968. The composition of production in 1961 and 1967 (the latest year for which data are available), as estimated from official statistics of the

U.S. Department of Commerce, is shown in the following tabulation:

Type of fiber	1961	1967
	Million pounds	Million pounds
Rayon (mostly viscose)-----	367	556
Acrylic or modacrylic-----	88	303
Polyester-----	11	82
Acetate-----	15	10
Other manmade fibers (mainly nylon and olefin)-----	43	123

From 1961 to 1967, production of rayon increased in quantity by only one-half, whereas that of acrylic or modacrylic, nylon, and olefin increased by about twofold, and that of polyester by about sevenfold. Acetate spun yarn production actually declined.

U.S. exports

In 1961-68, U.S. exports of yarns of noncontinuous manmade fibers fluctuated from 1.4 million pounds in 1966 to 2.8 million pounds in 1968 (table 1). The principal steady markets during 1961-68, in varying order of importance, were Canada, Australia, and Poland (table 2). New markets of significance during this period were Viet-Nam and Switzerland. Markets declining in importance were the United Kingdom, Turkey, and the Republic of South Africa.

The ratio of U.S. exports of spun yarn of manmade fibers to domestic production was less than half of 1 percent in each year of the 1961-68 period. From 1961 to 1965, the quantity of annual exports was two to nearly seven times as great as that of the corresponding imports. In 1966-68 the exports were much smaller in quantity than the imports; however, they exceeded the imports in value, in 1966. In 1967 the value of the exports was slightly less than that of the imports, and in 1968, it was substantially less.

U.S. imports

In 1961-68, U.S. imports of yarns wholly of noncontinuous manmade fibers increased about twelvefold, from 0.5 million pounds in 1961 to 6.2 million pounds in 1968 (table 1). Despite the large increase during the period, the imports constituted less than half of 1 percent of annual U.S. consumption. The composition of the imports varied in each year, but in most years, either singles or plied cellulosic (mainly acetate and viscose) spun yarns dominated; in other years, singles or plied

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noncellulosic (acrylic, polyester, nylon) spun yarns were also important. The imported yarns are similar to and competitive with like yarns made domestically. In 1961, U.S. imports came principally from Norway, and in 1962-65, from Norway and Italy. In 1966-68, imports from these two countries remained important but were much smaller than those from Japan, which, in that period, increased its share of U.S. imports to almost three-fourths of the total quantity (table 3).

Table 1.--Yarns wholly of noncontinuous manmade fibers: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 1961-68

Year	Production ^{1/}	Imports	Exports	Apparent consumption
Quantity (1,000 pounds)				
1961-----	524,156	466	2,188	522,434
1962-----	654,686	412	2,318	652,780
1963-----	779,446	858	1,855	778,449
1964-----	914,276	588	2,710	912,154
1965-----	1,038,046	346	2,353	1,036,039
1966-----	1,084,059	2,098	1,421	1,084,736
1967-----	1,074,537	3,724	2,055	1,076,206
1968-----	1,404,738	6,185	2,757	1,408,166
Value (1,000 dollars)				
1961-----	448,778	245	3,581	445,442
1962-----	568,489	236	3,699	565,026
1963-----	679,496	607	2,595	677,508
1964-----	783,000	569	3,054	780,515
1965-----	912,546	321	2,666	910,201
1966-----	924,020	1,228	1,694	923,554
1967-----	924,794	2,367	2,216	924,945
1968-----	1,190,621	4,606	2,866	1,192,361

^{1/} Estimated by the U.S. Tariff Commission staff from official statistics of the U.S. Department of Commerce.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 2.--Yarns wholly of noncontinuous manmade fibers: U.S. exports of domestic merchandise, by principal markets, 1961-68

Market	1961	1962	1963	1964	1965	1966	1967	1968
	Quantity (1,000 pounds)							
Canada-----	373	676	672	701	725	544	615	1,247
Australia-----	47	81	127	240	364	279	532	542
Poland-----	260	168	64	20	340	-	328	251
Viet-Nam-----	-	-	-	244	23	37	215	73
Switzerland-----	11	2	1	46	-	-	-	133
Venezuela-----	153	62	8	25	45	36	64	91
Netherlands-----	65	15	6	6	150	258	47	-
Turkey-----	7	5	34	518	349	70	-	-
United Kingdom--	248	177	138	112	41	-	-	-
Republic of								
South Africa--	420	706	358	136	19	-	-	-
All other-----	1/ 604	426	447	662	297	197	254	420
Total-----	2,188	2,318	1,855	2,710	2,353	1,421	2,055	2,757
	Value (1,000 dollars)							
Canada-----	436	779	731	627	684	528	563	1,197
Australia-----	70	167	207	230	311	223	456	472
Poland-----	332	315	134	46	359	-	355	270
Viet-Nam-----	-	-	-	389	42	82	346	152
Switzerland-----	30	4	3	29	-	-	-	148
Venezuela-----	212	58	17	43	75	77	90	119
Netherlands-----	39	20	11	10	249	460	63	-
Turkey-----	8	7	24	505	313	50	-	-
United Kingdom--	309	236	152	153	93	-	-	-
Republic of								
South Africa--	843	1,403	657	232	42	-	-	-
All other-----	1/ 1,302	710	659	790	498	274	343	508
Total-----	3,581	3,699	2,595	3,054	2,666	1,694	2,216	2,866

1/ Includes 171 thousand pounds, valued at 505 thousand dollars, exported to Italy, and 97 thousand pounds, valued at 294 thousand dollars, exported to France.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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Table 3.--Yarns wholly of noncontinuous manmade fibers: U.S. imports for consumption, by principal sources, 1961-68

Year	Japan	Norway	Italy	Switz- erland	All other	Total
Quantity (1,000 pounds)						
1961-----	66	388	1	-	11	466
1962-----	10	355	12	-	35	412
1963-----	30	564	201	37	26	858
1964-----	1	303	234	20	30	588
1965-----	16	169	145	12	4	346
1966-----	1,558	300	57	34	149	2,098
1967-----	2,757	623	152	72	120	3,724
1968-----	4,504	798	191	76	<u>1/</u> 616	6,185
Value (1,000 dollars)						
1961-----	35	198	1	-	11	245
1962-----	4	167	12	-	53	236
1963-----	18	271	250	40	28	607
1964-----	2	164	313	21	69	569
1965-----	13	88	200	14	6	321
1966-----	885	161	64	52	66	1,228
1967-----	1,778	303	134	76	76	2,367
1968-----	3,228	511	210	85	<u>1/</u> 572	4,606

1/ Includes 252 thousand pounds, valued at 286 thousand dollars, imported from Canada.

Source: Compiled from official statistics of the U.S. Department of Commerce.

YARNS OF MANMADE FIBERS, NOT ELSEWHERE ENUMERATED,
AND CHENILLE YARNS OF MANMADE FIBERS

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<u>Commodity</u>	<u>TSUS item</u>
Yarns of manmade fibers, not elsewhere enumerated-----	310.60
Chenille yarns of manmade fibers-----	310.80

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. production accounts for most of the consumption of the yarns covered here except for chenille yarns, which are mainly imported. Exports of these yarns are small but are increasing.

Description and uses

The articles covered by this summary consist of yarns wholly or in chief value of manmade fibers, but do not include yarns (singles or plied) wholly of continuous manmade fibers, which are provided for in the summary on items 310.01 to 310.21, yarns wholly of noncontinuous manmade fibers, provided for in the summary on items 310.40 to 310.50, yarns wholly or in chief value of glass, provided for in the summary on items 309.98 to 309.99; or yarns put up for handwork and sewing threads, provided for in the summary on items 310.90 to 310.91.

The four principal types of yarns in chief value of manmade fibers and covered by this summary consist of chenille yarns, yarns made wholly of continuous and noncontinuous manmade fibers in combination only, yarns made in chief value of manmade fibers which are blended with natural fibers, and core-spun yarns.

Chenille yarns of manmade fibers are yarns having a pile protruding all around at right angles to the lengthwise direction of the yarn and having the appearance of a caterpillar. They are generally used as fillings for fancy goods, in curtains and carpets, for embroidery, and as fringes for fabrics. Yarns made wholly from a combination of continuous and noncontinuous manmade fibers are generally used in fabrics where both bulk and strength are desired. Yarns in chief value of continuous manmade fibers blended with natural fibers (mainly cotton or wool) are used in sportswear, suits, coats, men's shirts, women's dresses and skirts, and curtains. Yarns in chief value of noncontinuous manmade fibers in combination with natural fibers (usually cotton or wool) are used in woven or knitted fabrics, carpets and rugs, cordage and twine, and sewing thread. Core-spun yarns are

YARNS OF MANMADE FIBERS, NOT ELSEWHERE ENUMERATED,
AND CHENILLE YARNS OF MANMADE FIBERS

yarns of continuous or noncontinuous manmade or other fibers spun or wound around an untwisted monofilament or grouped filaments. They are used principally to produce bulky yarns with durable stretch and recovery properties; the yarns are used particularly in sportswear, undergarments, and some outerwear.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in percent ad valorem and cents per pound):

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)	
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
310.60:	Yarns of manmade fibers:	25¢ +	20¢ + 24%	12¢ + 15%
	(other than those of	30%		
	glass; those that are:			
	wholly continuous,			
	wholly noncontinuous,			
	or put up for hand-			
	work; and chenille.			
310.80:	Chenille yarns of man-	25¢ +	20¢ + 24%	12¢ + 15%
	made fibers.	30%		

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Concessions amounting to a reduction of about 50 percent in the duties were granted by the United States in the Kennedy Round on both of the items listed above.

YARNS OF MANMADE FIBERS, NOT ELSEWHERE ENUMERATED,
AND CHENILLE YARNS OF MANMADE FIBERS

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The average ad valorem equivalents of the compound rates of duty in effect prior to January 1, 1968, and those to be effective on January 1, 1972, based on the value of dutiable imports in 1968, were as follows:

TSUS item	Average ad valorem equivalent of--	
	Rate prior to Jan. 1, 1968	Final stage of Kennedy Round, Jan. 1, 1972
310.60-----	45.5%	22.4
310.80-----	54.7%	26.9

U.S. consumption

No separate data on U.S. consumption of the yarns covered herein are available. Consumption has been increasing, however, in recent years. Imports have furnished the major portion of the consumption of chenille yarns, but U.S. production has accounted for most of the consumption of the other yarns. Consumption of these yarns has expanded because (a) the general increase in manmade fiber consumption in the United States has affected these yarns; (b) the blending of manmade fibers with natural fibers in yarns has proved to be practical and acceptable; (c) the wider use of these yarns for decorative purposes has encouraged their consumption; and (d) new developments have resulted in additional applications of these yarns.

U.S. producers

There are believed to be fewer than 25 U.S. plants manufacturing chenille yarns of manmade fibers. Approximately 50 plants manufacture combination yarns wholly of continuous and noncontinuous manmade fibers. Also, about 50 plants are believed to manufacture core-spun yarns in chief value of manmade fibers. Most of these plants are believed to be located in the South Atlantic States. The plants range in size from those employing fewer than 100 to those employing more than 1,000 workers. Almost all the plants manufacture products other than the yarns mentioned above; only a few of the plants derive their principal source of income from sales of these yarns.

More than 100 plants manufacture yarns blended with natural fibers but in chief value of manmade fibers. The majority of these plants are located in the South Atlantic States; more than a third of this group are in North Carolina. Almost half of the plants employ over 500 workers, fewer than a third employ between 100 and 500 workers, and

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YARNS OF MANMADE FIBERS, NOT ELSEWHERE ENUMERATED,
AND CHENILLE YARNS OF MANMADE FIBERS

fewer than a third employ under 100 workers. More than a third manufacture blended yarns for captive use; more than half produce the yarns for sale to manufacturing customers; and less than a third do both. There are only a few plants engaged exclusively in the production of blended yarns of manmade and natural fibers. In all other plants, the manufacture of other products is important, and in some the production of blended yarns is also an important source of income. The largest number of plants manufacture blended yarns of manmade and natural fibers on the woolen spinning system; the next largest number, on the cotton spinning system; and the fewest, on the worsted spinning system.

U.S. production and exports

No separate data for U.S. production of the yarns covered herein are available. Production of yarns in chief weight but not wholly of noncontinuous manmade fibers, however, can be estimated from official statistics of the U.S. Department of Commerce. Production of these yarns from 1961 to 1967 (the latest year for which data are available) is as follows:

<u>Year</u>	<u>Million pounds</u>
1961-----	100
1962-----	135
1963-----	175
1964-----	210
1965-----	300
1966-----	400
1967-----	490

Most of the production of spun yarns of manmade fibers blended with natural fibers is consumed within the producing companies for textile purposes; production for sale is generally shipped to manufacturers of fabrics or carpets. Production consists principally of three types: polyester with cotton, acrylic with wool, and polyester with wool.

U.S. exports of the major types of yarns covered in this summary are not separately recorded. It is believed, however, that exports of chenille yarns are negligible or nil, exports of core-spun yarns are increasing rapidly, and exports of the remaining yarns are showing a nominal increase.

U.S. imports

Separate data on U.S. imports of the yarns covered herein are available on an annual basis beginning in 1964. Imports have

YARNS OF MANMADE FIBERS, NOT ELSEWHERE ENUMERATED,
AND CHENILLE YARNS OF MANMADE FIBERS

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fluctuated since 1964; they reached their peak of 710,000 pounds, valued at \$908,000, in 1966. They were lowest in 1964 when 118,000 pounds, valued at \$169,000, were entered (see accompanying table).

Of the total imports reported in 1964-68, quantities were imported free for further processing under bond and export, as follows:

<u>Year</u>	<u>1,000 pounds</u>
1964-----	2
1965-----	4
1966-----	79
1967-----	36
1968-----	0

In 1966, the peak year, such exports amounted to more than 11 percent of total imports.

Because chenille yarns are not usually high volume items, domestic companies generally do not manufacture them. Therefore, most domestic consumption in 1964-68 was supplied by imports. Imports of the other yarns covered here were small compared with domestic consumption in 1964-68.

Imports since 1964 have been mainly of rayon. Imports since 1964 of the other yarns covered here have been mainly spun yarns of manmade fibers blended with natural fibers. The composition of the manmade fibers has been principally acrylic and polyester. They have been blended chiefly with wool or cotton. Imported blended yarns are similar to domestic products, but at present (1969), imports are small compared with domestic production.

Since 1964, imports of chenille yarns have come mainly from Spain and the United Kingdom; imports of blended yarns have been supplied principally by Italy, Canada, Switzerland, and Japan.

YARNS OF MANMADE FIBERS, NOT ELSEWHERE ENUMERATED,
AND CHENILLE YARNS OF MANMADE FIBERS

Yarns of manmade fibers not elsewhere enumerated, and chenille:
U.S. imports for consumption, by principal sources, 1964-68

Source	1964	1965	1966	1967	1968
	Quantity (1,000 pounds)				
Japan-----	11	51	110	5	55
Italy-----	88	38	118	200	64
Spain-----	-	29	167	56	60
Switzerland-----	5	4	19	14	14
United Kingdom-----	11	107	211	3	4
Canada-----	2	-	83	36	1/
All other-----	1	4	2	27	17
Total-----	118	233	710	341	214
	Value (1,000 dollars)				
Japan-----	18	74	160	25	87
Italy-----	115	54	156	257	85
Spain-----	-	36	205	71	60
Switzerland-----	9	7	37	32	30
United Kingdom-----	22	164	289	10	13
Canada-----	2	-	60	37	1
All other-----	3	8	1	43	34
Total-----	169	343	908	475	310

1/ Less than 500 pounds.

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS</u> <u>item</u>
Yarns put up for handwork, and sewing threads, of manmade fibers-----	310.90, -.91

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. production of sewing thread and handwork yarns of manmade fibers--with an estimated value of \$77 million in 1968--accounts for most of the U.S. consumption. The value of U.S. exports in 1968 at nearly \$2 million, was larger than that of imports.

Description and uses

Handwork yarns of manmade fibers are usually manufactured for home use. They are generally purchased in retail establishments in short-length skeins, spools, balls, or packets. These yarns are used in the home principally for crocheting, knitting, darning, embroidery, and rug making. The popular constructions for handwork yarns used in crocheting are either a hard-twist six-cord or a softer twist three-cord yarn; however, some consist of two- and four-ply cords with soft or low twist; most knitting handwork yarns can also be used for crocheting. Darning handwork yarns are soft-spun yarns twisted into a two-ply cord with a small amount of twist. The two principal constructions for embroidery handwork yarns are (1) a two-ply soft-twisted yarn, six strands of which are then laid together with a slight amount of twist, and (2) a two-ply yarn loosely twisted with a rope or cordlike effect. Handwork yarns used in rug making are generally plied yarns which are quite coarse and fluffy or fuzzy in appearance. All types of manmade fibers can be utilized in manufacturing handwork yarns.

Sewing threads are mainly manufactured for industrial purposes, but a considerable quantity is sold in retail establishments for use in the home. Commercial sewing threads of manmade fibers are classified into six major types: machine twist, twisted bonded multicord, bonded monocord, hand-sewing twist, buttonhole twist, and braided shoe. Machine twist sewing threads are soft types manufactured for use on sewing machines. Twisted bonded multicord sewing threads are essentially machine twist types sent through the bonding process. Bonded monocord sewing threads are manufactured continuously, i.e., from raw yarn to thread; they also are used mainly on sewing machines.

Hand-sewing twists are generally of two-cord waxed construction with an S-twist; they are used for hand sewing in the tailoring and apparel trades. Buttonhole twist types are those sewing threads used by the tailoring and apparel trades for the making of buttonholes by hand. Braided shoe-sewing threads consist of single yarns or cords braided together; they are generally utilized in shoe manufacture. Sewing threads can be made from all manmade fibers; however, the more popular fibers are nylon, glass, acrylic, polyester, and high-tenacity continuous viscose. Sewability and serviceability requirements usually determine the types of manmade fibers that are used in manufacturing sewing threads.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows:

<u>TSUS</u> <u>item</u>	<u>Commodity</u>	<u>Rate of duty</u>
	Yarns put up for handwork, and sewing threads, of manmade fibers:	
310.90	Valued not over 90 cents per pound----	20¢ per lb.
310.91	Valued over 90 cents per pound-----	22% ad val.

These rates have been the same since August 31, 1963. No concessions on these items were granted by the United States in the 1964-67 trade conference (Kennedy Round). The average ad valorem equivalent of the specific rate of duty for item 310.90, based on dutiable imports in 1968, was 28.4 percent.

U.S. consumption

U.S. consumption of sewing thread and handwork yarns of manmade fibers increased from about 4.1 million pounds, valued at \$21.1 million, in 1961 to 15.9 million pounds, valued at \$76.4 million, in 1968 (table 1). Consumption consisted almost entirely of sewing threads, most of which were machine twist types composed mainly of nylon, polyester, or viscose fibers. An important reason for the increase in 1961-68 is that many threads of manmade fibers have high strength and are wear resistant, qualities desirable in thread employed in the manufacture of articles for rugged uses. Another reason for the increase is that some threads of manmade fibers are excellent for certain specialized uses. For example, threads of manmade fibers are exceptionally practical for use on easy care clothing, and threads can be made from manmade fibers that differ in chemical composition and can therefore be adapted to a variety of applications utilizing the intrinsic

characteristics of the chemical composition. Consumption of sewing thread of manmade fibers has also been stimulated by new production technology; for example, a recent development was the production of sewing thread by a continuous method in which the entire process, from raw yarn to finished thread, is automatically electronically controlled.

U.S. producers

Handwork yarns of manmade fibers are usually secondary products of establishments manufacturing primarily spun yarns or sewing threads of manmade fibers. The number of establishments making handwork yarns of manmade fibers is not available; it is believed, however, that there are more than 50, situated principally in States along the Atlantic seaboard. Many of these establishments also manufacture handwork yarns of natural fibers.

Sewing thread of manmade fibers is manufactured in approximately 50 establishments, almost all situated in the States east of the Mississippi River. The States with the largest number of establishments are North Carolina, Pennsylvania, and Connecticut. The size of the plants range from those employing fewer than 50 workers to those employing more than 500. The largest quantity is produced by a few relatively large firms for which the manufacture of sewing thread of manmade fibers is the principal activity.

A few of the larger domestic firms manufacturing sewing thread of manmade fibers are partly controlled by big foreign concerns that manufacture sewing thread as a major product in their own countries. A very small number of the U.S.-owned firms also operate plants manufacturing sewing thread in foreign countries. Small or medium-sized U.S.-owned firms that make sewing thread rarely have foreign interests.

U.S. production

No data on U.S. production of handwork yarns of manmade fibers are available; such production is known to be insignificant, however, compared with domestic production of sewing threads of manmade fibers. Production of handwork yarns has not increased significantly since 1961, principally because of the continuing low interest in home needlework.

According to official statistics of the U.S. Department of Commerce, U.S. production of finished sewing thread of manmade fibers increased from 4.0 million pounds in 1953 to 5.9 million pounds in

1963 (the latest year for which data are available). Sales of sewing thread of manmade fibers, according to data compiled by the Thread Institute, Inc., increased from 4.3 million pounds in 1961 to 5.7 million pounds in 1963 and to 15.8 million pounds in 1968 (table 1). Value of the sales of sewing thread was estimated to be \$21.9 million in 1961, \$29.6 million in 1963, and \$76.9 million in 1968 (table 1).

In 1968, according to the Thread Institute, Inc., 9.9 million pounds of sewing thread of manmade fibers, exclusive of weight (heavy denier) goods, was sold for industrial uses, 4.3 million pounds was sold as threads made from combined fibers also for industrial purposes, 1.6 million pounds was sold as thread weight goods for industrial use, and only 50,000 pounds was sold for consumption in the home.

U.S. exports

U.S. exports of sewing thread and handwork yarns of manmade fibers increased almost steadily from 210,000 pounds, valued at \$817,000, in 1961 to 616,000 pounds, valued at \$1,890,000, in 1966. In the following year they declined to 543,000 pounds, valued at \$1,813,000. In 1968, however, they reached the peak of the 1961-68 period--630,000 pounds, valued at \$1,933,000 (table 1). Since 1964 most of the exports have consisted of sewing thread made from yarns of continuous nylon and polyester fibers. Secondary in importance have been exports of sewing thread manufactured from yarns of noncontinuous nylon, acrylic, and polyester fibers. Exports of sewing thread of continuous viscose fibers have ranked third.

The principal markets for exports of sewing thread of continuous nylon and polyester fibers have been Canada, the United Kingdom, and Venezuela. Exports of sewing thread of noncontinuous nylon, acrylic, and polyester fibers have been shipped principally to Canada, Venezuela, West Germany, Australia, and Pakistan. Sewing thread of continuous viscose fibers have been exported mainly to Venezuela, Canada, the Republic of South Africa, and Australia (table 2).

In 1961-67, annual U.S. exports of sewing thread and handwork yarns of manmade fibers ranged in quantity from 4 to 6 percent and in value from 3 to 5 percent of the sales of the domestic manufacturers. In this same period, U.S. exports exceeded imports in every year. In 1968, however, for the first time in more than a decade, imports exceeded exports in quantity though they were still less than exports in value.

U.S. imports

U.S. imports for consumption of sewing thread and handwork yarns of manmade fibers increased each year from 6,000 pounds, valued at \$16,000, in 1961 to 382,000 pounds, valued at \$1,104,000, in 1965. They declined in 1966 and again in 1967. In 1968, however, they reached a high for the 1961-68 period of 695,000 pounds, valued at \$1,453,000 (table 1). The quantity of imports accounted for less than half of 1 percent of domestic consumption in 1961, but the ratio rose each year through 1965, when it was 4.5 percent, a maximum for the 1961-68 period. The ratio decreased to 2.6 percent in 1967 and then increased to 4.4 percent in 1968.

In general the imports were similar in structure and quality to domestic sewing thread of manmade fibers. Most of the imports were lower priced than the competitive domestic products. The imports of handwork yarns were usually specialty items not manufactured to any great extent in the United States. The imported handwork yarns consisted mainly of blends of acrylic with nylon or mohair, and blends of viscose with wool, mohair, cotton, nylon, or vinyon.

France has been the leading supplier of sewing thread and handwork yarns of manmade fibers since 1961 (table 3). Other important suppliers in 1961-68 were West Germany, Italy, Belgium and Luxembourg, and Switzerland. Imports of handwork yarns of manmade fibers, especially acrylic and viscose blends, have been supplied principally by Italy.

Table 1.--Sewing thread and handwork yarns of manmade fibers: U.S. sales, imports for consumption, exports of domestic merchandise, and apparent consumption, 1961-68

(Quantity in thousands of pounds; value in thousands of dollars)					
Year	Sales <u>1/</u>	Imports	Exports	Apparent consumption:	Ratio (percent) of imports to consumption
Quantity					
1961-----	4,288	6	210	4,084	0.1
1962-----	5,146	25	233	4,938	.5
1963-----	5,708	37	267	5,478	.7
1964-----	6,711	97	427	6,381	1.5
1965-----	8,464	382	426	8,420	4.5
1966-----	10,979	327	616	10,690	3.1
1967-----	12,635	322	543	12,414	2.6
1968-----	15,815	695	630	15,880	4.4
Value					
1961-----	21,869	16	817	21,068	<u>2/</u>
1962-----	25,833	76	845	25,064	<u>2/</u>
1963-----	29,567	116	1,079	28,604	<u>2/</u>
1964-----	33,756	299	1,529	32,526	<u>2/</u>
1965-----	42,828	1,104	1,572	42,360	<u>2/</u>
1966-----	53,361	949	1,890	52,420	<u>2/</u>
1967-----	62,543	766	1,813	61,496	<u>2/</u>
1968-----	76,861	1,453	1,933	76,381	<u>2/</u>

1/ Quantity compiled by the Thread Institute, Inc.; value estimated from official statistics of the U.S. Department of Commerce.

2/ Not meaningful.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 2.--Sewing thread and handwork yarns of manmade fibers: U.S. exports of domestic merchandise, by principal markets, 1961-68

Market	1961	1962	1963	1964	1965	1966	1967	1968
	Quantity (1,000 pounds)							
Canada-----	96	77	73	121	193	226	182	318
Venezuela-----	20	38	39	42	34	61	83	46
Australia-----	7	4	7	29	14	24	21	60
United Kingdom--	7	31	39	56	49	65	28	11
Japan-----	2	1	6	10	9	10	6	7
Malaysia-----	2	3	4	4	3	2	3	6
Spain-----	-	1/	1	8	5	2	4	9
Netherlands-----	1	2	2	2	-	5	17	6
Sweden-----	6	6	15	7	5	3	-	4
Republic of								
South Africa--	5	5	10	13	5	19	12	7
West Germany----	1	8	12	13	5	13	11	4
Italy-----	23	2	2	7	-	11	-	3
Belgium and								
Luxembourg----	1	1	3	7	5	6	8	-
All other-----	39	2/ 55	54	108	99	3/ 169	4/ 168	5/ 149
Total-----	210	233	267	427	426	616	543	630
	Value (1,000 dollars)							
Canada-----	312	262	290	431	687	727	607	877
Venezuela-----	69	138	135	167	136	155	174	196
Australia-----	25	15	31	96	62	79	69	140
United Kingdom--	37	134	206	244	202	196	120	43
Japan-----	5	5	14	41	36	55	25	38
Malaysia-----	10	17	20	23	17	13	22	31
Spain-----	-	1	5	31	26	13	25	30
Netherlands-----	4	8	5	8	-	28	70	27
Sweden-----	25	30	68	30	22	15	-	23
Republic of								
South Africa--	12	15	26	40	17	63	44	22
West Germany----	3	34	58	43	25	47	54	19
Italy-----	160	6	11	27	-	68	-	15
Belgium and								
Luxembourg----	4	6	13	28	27	16	51	-
All other-----	151	2/ 174	197	320	315	3/ 415	4/ 552	5/ 472
Total-----	817	845	1,079	1,529	1,572	1,890	1,813	1,933

1/ Less than 500 pounds. 2/ Includes 18 thousand pounds, valued at 44 thousand dollars, exported to Peru. 3/ Includes 37 thousand pounds, valued at 43 thousand dollars, exported to Colombia. 4/ Includes 39 thousand pounds, valued at 158 thousand dollars, exported to Pakistan. 5/ Includes 19 thousand pounds, valued at 80 thousand dollars, exported to Brazil.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 3.--Sewing thread and handwork yarns of manmade fibers:
U.S. imports for consumption, by principal sources, 1961-68

Source	1961	1962	1963	1964	1965	1966	1967	1968
Quantity (1,000 pounds)								
France-----	1	12	32	80	293	223	186	358
West Germany-----	<u>1/</u>	1	<u>1/</u>	<u>1/</u>	5	12	32	74
Belgium and Luxembourg-----	-	<u>1/</u>	-	<u>1/</u>	1	14	18	84
Italy-----	-	1	2	6	59	39	15	23
Netherlands-----	-	-	-	-	5	9	12	26
Switzerland-----	4	5	1	2	3	11	1	19
Canada-----	-	-	<u>1/</u>	-	1	2	41	25
United Kingdom---	-	1	<u>1/</u>	<u>1/</u>	4	7	6	5
Finland-----	-	-	2	5	7	3	1	<u>1/</u>
All other-----	1	<u>2/</u> 5	<u>1/</u>	4	4	7	10	81
Total-----	6	25	37	97	381	327	322	695
Value (1,000 dollars)								
France-----	3	52	100	247	832	632	448	771
West Germany-----	1	3	<u>3/</u>	1	15	42	103	191
Belgium and Luxembourg-----	1	<u>3/</u>	-	1	3	32	39	164
Italy-----	-	1	6	21	183	120	57	70
Netherlands-----	-	-	-	-	13	25	31	66
Switzerland-----	10	15	3	6	9	42	4	52
Canada-----	-	-	<u>3/</u>	-	4	6	47	40
United Kingdom---	-	1	<u>3/</u>	1	13	24	19	15
Finland-----	-	-	6	18	23	10	2	2
All other-----	2	<u>2/</u> 4	1	4	9	16	15	82
Total-----	16	76	116	299	1,104	949	766	1,453

1/ Less than 500 pounds.

2/ From Sweden.

3/ Less than \$500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

<u>Commodity</u>	<u>TSUS item</u>
Tops, roving and yarns, of human hair and of animal hair (other than wool or hair provided for elsewhere in schedule 3)-----	312.10
Metalized yarns-----	312.30
Yarns, of paper-----	312.40
Yarns, not specially provided for-----	312.50

Note.--For the statutory description, see the Tariff Schedules of the United States Annotated (TSUSA-1969) (pertinent sections thereof are reproduced in appendix A to this volume).

U.S. trade position

U.S. trade in the textile articles covered in this summary is small. Domestic production supplies the great bulk of U.S. consumption.

Description and uses

Tops, roving, and yarns, of human hair and of certain animal hair ^{1/} (item 312.10) are intermediate products resulting from the processing of such hair into finished articles. These intermediate products are generally not sold as such but are utilized in the same plants in making end products.

Metalized yarns (item 312.30) are yarns of cotton or other textile fiber combined with, and in chief value of, tinsel wire or lamé. Tinsel wire is fine copper wire which has been coated, usually with silver or gold. For tariff purposes, lamé refers to tinsel wire which has been flattened. The term is now broadly applied to various forms of plastic filaments which contain metal but which are not tinsel or lamé for tariff purposes (see Treasury Decision 66-244(20)). Metalized yarns are used in strings or twines for gift packaging, ribbons, military insignia, and other products to impart a decorative effect.

The paper yarns covered in this summary are papers which are in the form of strips not over 0.06 inch in width or in the form of filaments made from strips by lengthwise rolling or folding, by twisting, or by similar processes, whether or not coated or impregnated with other materials, and which are suitable for making woven fabrics. Some

^{1/} Does not include wool, hair of the camel, alpaca, llama, vicuna, cashmere goat, angora goat, or rabbit, or similar hair provided for in part 1C of schedule 3 of the TSUS.

articles made of paper yarn, such as automobile seat covers, carpet backings, and women's handbags, have been on the market for many years. In recent years, however, several textile firms have experimented with other types of specialty fabrics of paper yarns for use in such products as curtain fabrics, men's hats, shoes, and sheeting for wrapping tobacco leaves for market. Other articles utilizing paper yarns in their manufacture include netting for protection of newly seeded lawns and gardens, bags for meat smoking, potato and onion sacks, and other types of bagging. Fabrics of paper yarns are also receiving increased consideration for use as bale coverings for raw cotton and wool--uses which have been filled for many years by jute. Gains in the use of paper yarns at the expense of jute, however, have been more than offset by losses to plastics in some of the traditional uses of paper.

Item 312.50 was established primarily for yarns developed after the effective date of the TSUS for which there is no specific category provision. For yarns which are specifically provided for, see summaries on individual items.

U.S. tariff treatment

The column 1 (trade-agreement) rates of duty applicable to imports (see general headnote 3 in the TSUSA-1969) are as follows (in cents per pound and percent ad valorem):

TSUS item	Commodity	Rate prior to Jan. 1, 1968	Rate pursuant to U.S. concessions granted in 1964-67 trade conference (Kennedy Round)	
			Second stage, effective Jan. 1, 1969	Final stage, effective Jan. 1, 1972
312.10:	Tops, roving and yarns,	10%	8%	5%
:	all the foregoing of	:	:	:
:	animal hair (including:	:	:	:
:	human hair but not in-	:	:	:
:	cluding wool and hair :	:	:	:
:	provided for in sub-	:	:	:
:	part 1C of schedule 3):	:	:	:
312.30:	Metalized yarns-----	6¢ +	4¢ + 8%	3¢ + 5%
:		10%	:	:
312.40:	Yarns, of paper-----	17.5%	14%	8.5%
312.50:	Yarns, not specially	20%	16%	10%
:	provided for.	:	:	:
:		:	:	:

The tabulation above shows the column 1 rates of duty in effect prior to January 1, 1968, and modifications therein as a result of concessions granted by the United States in the sixth (Kennedy) round of trade negotiations under the General Agreement on Tariffs and Trade concluded on June 30, 1967. Only the second and final stages of the five annual rate modifications are shown above (see the TSUSA-1969 for the other stages of the concessions).

The prior rates shown in the preceding tabulation had remained unchanged under the TSUS from August 31, 1963, through 1967. Concessions amounting to reductions of about 50 percent in the duties were granted by the United States in the Kennedy Round on each of the items listed above.

The ad valorem equivalent of the compound rate of duty in effect prior to January 1, 1968, on metalized yarn (item 312.30), based on imports in 1967, was 11.5 percent; the final (1972) staged rate, when based on the 1967 imports, produces an ad valorem equivalent of 5.7 percent.

U.S. production and exports

No official data on U.S. production of the articles covered herein are available, but the total of such production is believed to be many times larger than that of imports. As stated above, tops, roving, and yarns of human hair and of animal hair are intermediate products, and only small quantities enter into commerce. In 1967, U.S. exports of yarns produced from coarse animal hair amounted to only 12,314 pounds, valued at \$12,220. Metalized yarns are manufactured from purchased tinsel wire and lamé by a number of concerns, most of which manufacture for their own use rather than for sale. Production is believed to be small and to represent only a small part of the output of any one concern. U.S. exports of metalized yarns are probably negligible.

The process of economically producing paper yarn of types which can compete with fiber yarns (e.g., cotton and jute) has been developed only since the early 1950's. While raw cotton must be subjected to half a dozen processes to be spun into yarn, paper yarn is produced from a roll of paper which is merely slit into narrow strips, thoroughly wetted, and fed directly into the spinning frame in one continuous operation. At present, production is limited to the coarser paper yarns because production of finer yarns is still not economically feasible. The stiffness of paper is the greatest problem that must be overcome in further expanding the use of paper yarns in the textile field. Experiments are being conducted with chemicals which might successfully impart softness and pliability to paper yarns.

Efforts are also being made to develop a method of spinning the yarn directly from woodpulp, thereby eliminating the intermediate paper stage. In recent years, paper yarns have benefited from the unstable supplies and prices of jute and, as a result, have extended their use in the field of carpet backings and sandbags. Although no data are available, annual U.S. production of paper yarns is believed to amount to several million pounds. U.S. exports, although relatively small, probably exceed imports.

U.S. production and exports of the types of yarns which would be dutiable under item 312.50 are insignificant or nil.

U.S. imports

There had been no U.S. imports of tops, roving, and yarns of human hair and of animal hair for many years until 1968, when imports of 166,500 pounds, valued at \$13,975, were reported. Imports of metalized yarns have been small in recent years; they amounted to 18,812 pounds, valued at \$41,029, principally from Belgium, in 1968. Imports of paper yarn have also been small, amounting to 25,882 pounds, valued at \$2,384, all from Canada, in 1967; there were no imports of paper yarn during 1968. Although imports have been recorded under item 312.50 (yarns, not specially provided for) in recent years, it is believed that most, if not all, of these were misclassified. During 1968, item 312.50 reflected products valued at \$42,600 which were imported free under bond for processing and reexport.

A P P E N D I X A

Tariff Schedules of the United States Annotated (1969):
General headnotes and rules of interpretation, and
excerpts relating to the items included in this
volume.

NOTE: The shaded areas in this appendix cover
headnotes and TSUS items not included in the
summaries in this volume.

GENERAL HEADNOTES AND RULES OF INTERPRETATION

Page 3

1. **Tariff Treatment of Imported Articles.** All articles imported into the customs territory of the United States from outside thereof are subject to duty or exempt therefrom as prescribed in general headnote 3.

2. **Customs Territory of the United States.** The term "customs territory of the United States", as used in the schedules, includes only the States, the District of Columbia, and Puerto Rico.

3. **Rates of Duty.** The rates of duty in the "Rates of Duty" columns numbered 1 and 2 of the schedules apply to articles imported into the customs territory of the United States as hereinafter provided in this headnote:

(a) **Products of Insular Possessions.**

(i) Except as provided in headnote 6 of schedule 7, part 2, subpart E, [and] except as provided in headnote 4 of schedule 7, part 7, subpart A, articles imported from insular possessions of the United States which are outside the customs territory of the United States are subject to the rates of duty set forth in column numbered 1 of the schedules, except that all such articles the growth or product of any such possession, or manufactured or produced in any such possession from materials the growth, product, or manufacture of any such possession or of the customs territory of the United States, or of both, which do not contain foreign materials to the value of more than 50 percent of their total value, coming to the customs territory of the United States directly from any such possession, and all articles previously imported into the customs territory of the United States with payment of all applicable duties and taxes imposed upon or by reason of importation which were shipped from the United States, without remission, refund, or drawback of such duties or taxes, directly to the possession from which they are being returned by direct shipment, are exempt from duty.

(ii) In determining whether an article produced or manufactured in any such insular possession contains foreign materials to the value of more than 50 percent, no material shall be considered foreign which, at the time such article is entered, may be imported into the customs territory from a foreign country, other than Cuba or the Philippine Republic, and entered free of duty.

(b) **Products of Cuba.** Products of Cuba imported into the customs territory of the United States, whether imported directly or indirectly, are subject to the rates of duty set forth in column numbered 1 of the schedules. Preferential rates of duty for such products apply only as shown in the said column 1. 1/

(c) **Products of the Philippine Republic.**

(i) Products of the Philippine Republic imported into the customs territory of the United States, whether imported directly or indirectly, are subject to the rates of duty which are set forth in column numbered 1 of the schedules or to fractional parts of the rates in the said column 1, as hereinafter prescribed in subdivisions (c)(ii) and (c)(iii) of this headnote.

(ii) Except as otherwise prescribed in the schedules, a Philippine article, as defined in subdivision (c)(iv) of this headnote, imported into the customs

territory of the United States and entered on or before July 3, 1974, is subject to that rate which results from the application of the following percentages to the most favorable rate of duty (i.e., including a preferential rate prescribed for any product of Cuba) set forth in column numbered 1 of the schedules:

(A) 20 percent, during calendar years

1963 through 1964,

(B) 40 percent, during calendar years

1965 through 1967,

(C) 60 percent, during calendar years

1968 through 1970,

(D) 80 percent, during calendar years

1971 through 1973,

(E) 100 percent, during the period from January 1, 1974, through July 3, 1974.

(iii) Except as otherwise prescribed in the schedules, products of the Philippine Republic, other than Philippine articles, are subject to the rates of duty (except any preferential rates prescribed for products of Cuba) set forth in column numbered 1 of the schedules.

(iv) The term "Philippine article", as used in the schedules, means an article which is the product of the Philippines, but does not include any article produced with the use of materials imported into the Philippines which are products of any foreign country (except materials produced within the customs territory of the United States) if the aggregate value of such imported materials when landed at the Philippine port of entry, exclusive of any landing cost and Philippine duty, was more than 20 percent of the appraised customs value of the article imported into the customs territory of the United States.

(d) **Products of Canada.**

(i) Products of Canada imported into the customs territory of the United States, whether imported directly or indirectly, are subject to the rates of duty set forth in column numbered 1 of the schedules. The rates of duty for a Canadian article, as defined in subdivision (d)(ii) of this headnote, apply only as shown in the said column numbered 1.

(ii) The term "Canadian article", as used in the schedules, means an article which is the product of Canada, but does not include any article produced with the use of materials imported into Canada which are products of any foreign country (except materials produced within the customs territory of the United States), if the aggregate value of such imported materials when landed at the Canadian port of entry (that is, the actual purchase price, or if not purchased, the export value, of such materials, plus, if not included therein, the cost of transporting such materials to Canada but exclusive of any landing cost and Canadian duty) was --

(A) with regard to any motor vehicle or automobile truck tractor entered on or before December 31, 1967, more than 60 percent of the appraised value of the article imported into the customs territory of the United States; and

(B) with regard to any other article (including any motor vehicle or automobile truck tractor entered after December 31, 1967), more than 50 percent of the appraised value of the article imported into the customs territory of the United States.

(e) **Products of Communist Countries.** Notwithstanding any of the foregoing provisions of this headnote, the rates of duty shown in column numbered 2 shall apply to products, whether imported directly or indirectly, of the following countries and areas pursuant to section 401 of the Tariff Classification Act of 1962, to section 231 or 257(e) (2) of the Trade Expansion Act of 1962, or to

1/ By virtue of section 401 of the Tariff Classification Act of 1962, the application to products of Cuba of either a preferential or other reduced rate of duty in column 1 is suspended. See general headnote 3(e), *infra*. The provisions for preferential Cuban rates continue to be reflected in the schedules because, under section 401, the rates therefor in column 1 still form the bases for determining the rates of duty applicable to certain products, including "Philippine articles".

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General Headnotes and Rules of Interpretation

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action taken by the President thereunder:

Albania
Bulgaria
China (any part of which may be under Communist domination or control)
Cuba 1/
Czechoslovakia
Estonia
Germany (the Soviet zone and the Soviet sector of Berlin)
Hungary
Indochina (any part of Cambodia, Laos, or Vietnam which may be under Communist domination or control)
Korea (any part of which may be under Communist domination or control)
Kurile Islands
Latvia
Lithuania
Outer Mongolia
Rumania
Southern Sakhalin
Tanna Tuva
Tibet
Union of Soviet Socialist Republics and the area in East Prussia under the provisional administration of the Union of Soviet Socialist Republics.

(f) Products of All Other Countries. Products of all countries not previously mentioned in this headnote imported into the customs territory of the United States are subject to the rates of duty set forth in column numbered 1 of the schedules.

(g) Effective Date; Exceptions - Staged Rates of Duty. 2/ Except as specified below or as may be specified elsewhere, pursuant to section 501(a) of the Tariff Classification Act of 1962 (P.L. 87-456, approved May 24, 1962), the rates of duty in columns numbered 1 and 2 become effective with respect to articles entered on or after the 10th day following the date of the President's proclamation provided for in section 102 of the said Act. If, in column numbered 1, any rate of duty or part thereof is set forth in parenthesis, the effective date shall be governed as follows:

(i) If the rate in column numbered 1 has only one part (i.e., 8¢ (10¢) per lb.), the parenthetical rate (viz., 10¢ per lb.) shall be effective as to articles entered before July 1, 1964, and the other rate (viz., 8¢ per lb.) shall be effective as to articles entered on or after July 1, 1964.

(ii) If the rate in column numbered 1 has two or more parts (i.e., 5¢ per lb. + 50% ad val.) and has a parenthetical rate for either or both parts, each part of the rate shall be governed as if it were a one-part rate. For example, if a rate is expressed as "4¢ (4.5¢) per lb. + 8% (9%) ad val.", the rate applicable to articles entered before July 1, 1964, would be "4.5¢ per lb. + 9% ad val."; the rate applicable to articles entered on or after July 1, 1964, would be "4¢ per lb. + 8% ad val."

(iii) If the rate in column numbered 1 is marked with an asterisk (*), the foregoing provisions of (i) and (ii) shall apply except that "January 1, 1964" shall be substituted for "July 1, 1964", wherever this latter date appears.

1/ In Proclamation 3447, dated February 3, 1962, the President, acting under authority of section 620(a) of the Foreign Assistance Act of 1961 (75 Stat. 445), as amended, prohibited the importation into the United States of all goods of Cuban origin and all goods imported from or through Cuba, subject to such exceptions as the Secretary of the Treasury determines to be consistent with the effective operation of the embargo.

2/ The purpose of headnote 3(g) was to provide for an effective date for the rates of duty initially contained in the Tariff Schedules of the United States. By Presidential Proclamation 3548 of August 21, 1963, these rates of duty, except as noted in subparagraphs (i), (ii), and (iii) of headnote 3(g), became effective on August 31, 1963.

4. Modification or Amendment of Rates of Duty. Except as otherwise provided in the Appendix to the Tariff Schedules --

(a) a statutory rate of duty supersedes and terminates the existing rates of duty in both column numbered 1 and column numbered 2 unless otherwise specified in the amending statute;

(b) a rate of duty proclaimed pursuant to a concession granted in a trade agreement shall be reflected in column numbered 1 and, if higher than the then existing rate in column numbered 2, also in the latter column, and shall supersede but not terminate the then existing rate (or rates) in such column (or columns);

(c) a rate of duty proclaimed pursuant to section 356 of the Tariff Act of 1930 shall be reflected in both column numbered 1 and column numbered 2 and shall supersede but not terminate the then existing rates in such columns; and

(d) whenever a proclaimed rate is terminated or suspended, the rate shall revert, unless otherwise provided, to the next intervening proclaimed rate previously superseded but not terminated or, if none, to the statutory rate.

5. Intangibles. For the purposes of headnote 1 --

(a) corpses, together with their coffins and accompanying flowers,

(b) currency (metal or paper) in current circulation in any country and imported for monetary purposes,

(c) electricity,

(d) securities and similar evidences of value, and

(e) vessels which are not "yachts or pleasure boats" within the purview of subpart D, part 6, of schedule 6,

are not articles subject to the provisions of these schedules.

6. Containers or Holders for Imported Merchandise.

For the purposes of the tariff schedules, containers or holders are subject to tariff treatment as follows:

(a) Imported Empty: Containers or holders if imported empty are subject to tariff treatment as imported articles and as such are subject to duty unless they are within the purview of a provision which specifically exempts them from duty.

(b) Not Imported Empty: Containers or holders if imported containing or holding articles are subject to tariff treatment as follows:

(i) The usual or ordinary types of shipping or transportation containers or holders, if not designed for, or capable of, reuse, and containers of usual types ordinarily sold at retail with their contents, are not subject to treatment as imported articles. Their cost, however, is, under section 402 or section 402a of the tariff act, a part of the value of their contents and if their contents are subject to an ad valorem rate of duty such containers or holders are, in effect, dutiable at the same rate as their contents, except that their cost is deductible from dutiable value upon submission of satisfactory proof that they are products of the United States which are being returned without having been advanced in value or improved in condition by any means while abroad.

(ii) The usual or ordinary types of shipping or transportation containers or holders, if designed for, or capable of, reuse, are subject to treatment as imported articles separate and distinct from their contents. Such holders or containers are not part of the dutiable value of their contents and are separately subject to duty upon each and every importation into the customs territory of the United States unless within the scope of a provision specifically exempting them from duty.

(iii) In the absence of context which requires otherwise, all other containers or holders are subject to the same treatment as specified in (ii) above for usual or ordinary types of shipping or transportation containers or holders designed for, or capable of, reuse.

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7. Commingling of Articles. (a) Whenever articles subject to different rates of duty are so packed together or mingled that the quantity or value of each class of articles cannot be readily ascertained by customs officers (without physical segregation of the shipment or the contents of any entire package thereof), by one or more of the following means:

(i) sampling,
(ii) verification of packing lists or other documents filed at the time of entry, or
(iii) evidence showing performance of commercial settlement tests generally accepted in the trade and filed in such time and manner as may be prescribed by regulations of the Secretary of the Treasury,
the commingled articles shall be subject to the highest rate of duty applicable to any part thereof unless the consignee or his agent segregates the articles pursuant to subdivision (b) hereof.

(b) Every segregation of articles made pursuant to this headnote shall be accomplished by the consignee or his agent at the risk and expense of the consignee within 30 days (unless the Secretary authorizes in writing a longer time) after the date of personal delivery or mailing, by such employee as the Secretary of the Treasury shall designate, of written notice to the consignee that the articles are commingled and that the quantity or value of each class of articles cannot be readily ascertained by customs officers. Every such segregation shall be accomplished under customs supervision, and the compensation and expenses of the supervising customs officers shall be reimbursed to the Government by the consignee under such regulations as the Secretary of the Treasury may prescribe.

(c) The foregoing provisions of this headnote do not apply with respect to any part of a shipment if the consignee or his agent furnishes, in such time and manner as may be prescribed by regulations of the Secretary of the Treasury, satisfactory proof --

(i) that such part (A) is commercially negligible, (B) is not capable of segregation without excessive cost, and (C) will not be segregated prior to its use in a manufacturing process or otherwise, and

(ii) that the commingling was not intended to avoid the payment of lawful duties.
Any article with respect to which such proof is furnished shall be considered for all customs purposes as a part of the article, subject to the next lower rate of duty, with which it is commingled.

(d) The foregoing provisions of this headnote do not apply with respect to any shipment if the consignee or his agent shall furnish, in such time and manner as may be prescribed by regulations of the Secretary of the Treasury, satisfactory proof --

(i) that the value of the commingled articles is less than the aggregate value would be if the shipment were segregated;

(ii) that the shipment is not capable of segregation without excessive cost and will not be segregated prior to its use in a manufacturing process or otherwise; and

(iii) that the commingling was not intended to avoid the payment of lawful duties.

Any merchandise with respect to which such proof is furnished shall be considered for all customs purposes to be dutiable at the rate applicable to the material present in greater quantity than any other material.

(e) The provisions of this headnote shall apply only in cases where the schedules do not expressly provide a particular tariff treatment for commingled articles.

8. Abbreviations. In the schedules the following symbols and abbreviations are used with the meanings respectively indicated below:

\$	-	dollars
¢	-	cents
%	-	percent
+	-	plus
ad val.	-	ad valorem
bu.	-	bushel
cu.	-	cubic
doz.	-	dozen
ft.	-	feet
gal.	-	gallon
in.	-	inches
lb.	-	pounds
oz.	-	ounces
sq.	-	square
wt.	-	weight
yd.	-	yard
pcs.	-	pieces
prs.	-	pairs
lin.	-	linear
I.R.C.	-	Internal Revenue Code

9. Definitions. For the purposes of the schedules, unless the context otherwise requires --

(a) the term "entered" means entered, or withdrawn from warehouse, for consumption in the customs territory of the United States;

(b) the term "entered for consumption" does not include withdrawals from warehouse for consumption;

(c) the term "withdrawn for consumption" means withdrawn from warehouse for consumption and does not include articles entered for consumption;

(d) the term "rate of duty" includes a free rate of duty; rates of duty proclaimed by the President shall be referred to as "proclaimed" rates of duty; rates of duty enacted by the Congress shall be referred to as "statutory" rates of duty; and the rates of duty in column numbered 2 at the time the schedules become effective shall be referred to as "original statutory" rates of duty;

(e) the term "ton" means 2,240 pounds, and the term "short ton" means 2,000 pounds;

(f) the terms "of", "wholly of", "almost wholly of", "in part of" and "containing", when used between the description of an article and a material (e.g., "furniture of wood", "woven fabrics, wholly of cotton", etc.), have the following meanings:

(i) "of" means that the article is wholly or in chief value of the named material;

(ii) "wholly of" means that the article is, except for negligible or insignificant quantities of some other material or materials, composed completely of the named material;

(iii) "almost wholly of" means that the essential character of the article is imparted by the named material, notwithstanding the fact that significant quantities of some other material or materials may be present; and

(iv) "in part of" or "containing" mean that the article contains a significant quantity of the named material.

With regard to the application of the quantitative concepts specified in subparagraphs (ii) and (iv) above, it is intended that the de minimis rule apply.

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10. General Interpretative Rules. For the purposes of these schedules --

(a) the general, schedule, part, and subpart headnotes, and the provisions describing the classes of imported articles and specifying the rates of duty or other import restrictions to be imposed thereon are subject to the rules of interpretation set forth herein and to such other rules of statutory interpretation, not inconsistent therewith, as have been or may be developed under administrative or judicial rulings;

(b) the titles of the various schedules, parts, and subparts and the footnotes therein are intended for convenience in reference only and have no legal or interpretative significance;

(c) an imported article which is described in two or more provisions of the schedules is classifiable in the provision which most specifically describes it; but, in applying this rule of interpretation, the following considerations shall govern:

(i) a superior heading cannot be enlarged by inferior headings indented under it but can be limited thereby;

(ii) comparisons are to be made only between provisions of coordinate or equal status, i.e., between the primary or main superior headings of the schedules or between coordinate inferior headings which are subordinate to the same superior heading;

(d) if two or more tariff descriptions are equally applicable to an article, such article shall be subject to duty under the description for which the original statutory rate is highest, and, should the highest original statutory rate be applicable to two or more of such descriptions, the article shall be subject to duty under that one of such descriptions which first appears in the schedules;

(e) in the absence of special language or context which otherwise requires --

(i) a tariff classification controlled by use (other than actual use) is to be determined in accordance with the use in the United States at, or immediately prior to, the date of importation, of articles of that class or kind to which the imported articles belong, and the controlling use is the chief use, i.e., the use which exceeds all other uses (if any) combined;

(ii) a tariff classification controlled by the actual use to which an imported article is put in the United States is satisfied only if such use is intended at the time of importation, the article is so used, and proof thereof is furnished within 3 years after the date the article is entered;

(f) an article is in chief value of a material if such material exceeds in value each other single component material of the article;

(g) a headnote provision which enumerates articles not included in a schedule, part, or subpart is not necessarily exhaustive, and the absence of a particular article from such headnote provision shall not be given weight in determining the relative specificity of competing provisions which describe such article;

(h) unless the context requires otherwise, a tariff description for an article covers such article, whether assembled or not assembled, and whether finished or not finished;

(ij) a provision for "parts" of an article covers a product solely or chiefly used as a part of such article, but does not prevail over a specific provision for such part.

11. Issuance of Rules and Regulations. The Secretary of the Treasury is hereby authorized to issue rules and regulations governing the admission of articles under the provisions of the schedules. The allowance of an importer's claim for classification, under any of the provisions of the schedules which provide for total or partial relief from duty or other import restrictions on the basis of facts which are not determinable from an examination of the article itself in its condition as imported, is dependent upon his complying with any rules or regulations which may be issued pursuant to this headnote.

12. The Secretary of the Treasury is authorized to prescribe methods of analyzing, testing, sampling, weighing, gauging, measuring, or other methods of ascertainment whenever he finds that such methods are necessary to determine the physical, chemical, or other properties or characteristics of articles for purposes of any law administered by the Customs Service.

General statistical headnotes:

1. Statistical Requirements for Imported Articles. Persons making customs entry or withdrawal of articles imported into the customs territory of the United States shall complete the entry or withdrawal forms, as provided herein and in regulations issued pursuant to law, to provide for statistical purposes information as follows:

(a) the number of the Customs district and of the port where the articles are being entered for consumption or warehouse, as shown in Statistical Annex A of these schedules;

(b) the name of the carrier or the means of transportation by which the articles were transported to the first port of unloading in the United States;

(c) the foreign port of lading;

(d) the United States port of unloading;

(e) the date of importation;

(f) the country of origin of the articles expressed in terms of the designation therefor in Statistical Annex B of these schedules;

(g) a description of the articles in sufficient detail to permit the classification thereof under the proper statistical reporting number in these schedules;

(h) the statistical reporting number under which the articles are classifiable;

(ij) gross weight in pounds for the articles covered by each reporting number when imported in vessels or aircraft;

(k) the net quantity in the units specified herein for the classification involved;

(l) the U.S. dollar value in accordance with the definition in Section 402 or 402a of the Tariff Act of 1930, as amended, for all merchandise including that free of duty or dutiable at specific rates; and

(m) such other information with respect to the imported articles as is provided for elsewhere in these schedules.

General Headnotes and Rules of Interpretation

2. Statistical Annotations. (a) The statistical annotations to the Tariff Schedules of the United States consist of --

- (i) the 2-digit statistical suffixes,
- (ii) the indicated units of quantity,
- (iii) the statistical headnotes and annexes, and
- (iv) the italicized article descriptions.

(b) The legal text of the Tariff Schedules of the United States consists of the remaining text as more specifically identified in headnote 10(a) of the general headnotes and rules of interpretation.

(c) The statistical annotations are subordinate to the provisions of the legal text and cannot change their scope.

3. Statistical Reporting Number. (a) General Rule: Except as provided in paragraph (b) of this headnote, and in the absence of specific instructions to the contrary elsewhere, the statistical reporting number for an article consists of the 7-digit number formed by combining the 5-digit item number with the appropriate 2-digit statistical suffix. Thus, the statistical reporting number for live monkeys dutiable under item 100.95 is "100.9520".

(b) Wherever in the tariff schedules an article is classifiable under a provision which derives its rate of duty from a different provision, the statistical reporting number is, in the absence of specific instructions to the contrary elsewhere, the 7-digit number for the basic provision followed by the item number of the provision from which the rate is derived. Thus, the statistical reporting number of mixed apple and grape juices, not containing over 1.0 percent of ethyl alcohol by volume, is "165.6500-165.40".

4. Abbreviations. (a) The following symbols and abbreviations are used with the meanings respectively indicated below:

s. ton	-	short ton
C.	-	one hundred
Cwt.	-	100 lbs.
mg.	-	milligram
M.	-	1,000
bd. ft.	-	board feet
M. bd. ft.	-	1,000 board feet
mc.	-	millicurie
cord	-	128 cubic feet
square	-	amount to cover 100 square feet of surface
sup. ft.	-	superficial foot
oz.	-	ounces avoirdupois
fl. oz.	-	fluid ounce
oz. troy	-	troy ounce
pf. gal.	-	proof gallon

(b) An "X" appearing in the column for units of quantity means that no quantity (other than gross weight) is to be reported.

(c) Whenever two separate units of quantity are shown for the same article, the "v" following one of such units means that the value of the article is to be reported with that quantity.

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HISTORICAL NOTES

Notes p. 1
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Amendments and Modifications

PROVISIONS

Gen Hdnte--Language "Except as provided in headnote 6 of
3(a)(i) schedule 7, part 2, subpart E," added; language
"except that all articles" deleted and language
"except that all such articles" inserted in
lieu thereof. Pub. L. 89-805, Secs. 1(a), (c),
Nov. 10, 1966, 80 Stat. 1521, 1522, effective
date Jan. 1, 1967.
Language "Except as provided in headnote 4 of
schedule 7, part 7, subpart A," added. Pub. L.
89-806, Secs. 2(b), (c), Nov. 10, 1966, 80 Stat.
1523, effective date March 11, 1967.

PROVISIONS

Gen Hdnte--Headnotes 3(d), (e), and (f) redesignated as
3(d), (e), headnotes 3(e), (f), and (g), respectively,
(f) and (g) and new headnote 3(d) added. Pub. L. 89-283,
Secs. 401(a), 403, Oct. 21, 1965, 79 Stat.
1021, 1022; entered into force Oct. 22, 1965,
by Pres. Proc. 3682, Oct. 21, 1965, 3 CFR,
1965 Supp., p. 68.
Gen Hdnte--Language "and containers of usual types ordi-
narily sold at retail with their contents,"
6(b)(i) added. Pub. L. 89-241, Secs. 2(a), 4,
Oct. 7, 1965, 79 Stat. 933, 934, effective
date Dec. 7, 1965.

SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS

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SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS

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<p>Part 1 - Textile Fibers and Wastes; Yarns and Threads</p> <p>A. Cotton</p> <p>B. Vegetable Fibers, Except Cotton</p> <p>C. Wool and Hair</p> <p>D. Silk</p> <p>E. Man-Made Fibers</p> <p>F. Miscellaneous Textile Materials</p> <p>Part 2 - Cordage</p> <p>Part 3 - Woven Fabrics</p> <p>A. Woven Fabrics, of Cotton</p> <p>B. Woven Fabrics, of Vegetable Fibers (Except Cotton)</p> <p>C. Woven Fabrics, of Wool</p> <p>D. Woven Fabrics, of Silk</p> <p>E. Woven Fabrics, of Man-Made Fibers</p> <p>F. Woven Fabrics, of Other Textile Materials</p> <p>Part 4 - Fabrics of Special Construction or for Special Purposes; Articles of Wedding or Felt; Fish Nets; Machine Clothing</p> <p>A. Knit, Tulle, Tulle, and Marrow Fabrics, Brills and Elastic Fabrics</p> <p>B. Lace, Netting, and Ornamented Fabrics</p> <p>C. Wedding, Felt, and Articles Thereof; Fish Netting and Nets; Artists' Canvas; Coated or Filled Fabrics; Rope; Machine Clothing; Other Special Fabrics</p> <p>Part 5 - Textile Furnishings</p> <p>A. Textile Floor Coverings</p> <p>B. Bedding</p> <p>C. Tapestries, Linens, and Other Furnishings</p> <p>Part 6 - Wearing Apparel and Accessories</p> <p>A. Handkerchiefs</p> <p>B. Shirts, Scarves, Shawls, and Veils; Men's and Boys' Neckties</p> <p>C. Hosiery</p> <p>D. Garters and Suspenders; Body-Supporting Garments; Rainwear</p> <p>E. Underwear</p> <p>F. Other Wearing Apparel</p> <p>Part 7 - Miscellaneous Textile Products; Rags and Scrap Cordage</p> <p>A. Miscellaneous Textile Products</p> <p>B. Textile Articles Not Specially Provided For</p> <p>C. Rags and Scrap Cordage</p>	<p>Schedule 3 headnotes:</p> <p>1. This schedule does not cover --</p> <p>(i) articles of unspun fibrous vegetable materials (see part 2B of schedule 2);</p> <p>(ii) asbestos fibers, or yarns, fabrics, or other articles containing asbestos in significant amounts, i.e., articles in which asbestos is used in sufficient amounts to impart its peculiar characteristics or properties to the article (see part 1F of schedule 5);</p> <p>(iii) wire, or wire cordage, screen, fencing, or other wire products (see parts 2 and 3B of schedule 6); or</p> <p>(iv) footwear, headwear, gloves, handbags, pillows, mattresses, and other articles of textile materials provided for in schedule 7.</p> <p>2. For the purposes of the tariff schedules --</p> <p>(a) the term "textile materials" means --</p> <p>(i) the fibers (cotton, other vegetable fibers, wool and hair, silk, and man-made fibers) provided for in part 1 of this schedule,</p> <p>(ii) the yarn intermediates and the yarns provided for in part 1 and part 4 (elastic yarns) of this schedule,</p> <p>(iii) the cordage provided for in part 2 and part 4 (elastic cordage) of this schedule,</p> <p>(iv) the fabrics provided for in part 3 and part 4 of this schedule,</p> <p>(v) braids, as defined in headnote 2(f), infra, and</p> <p>(vi) except as provided by headnote 5, articles produced from any of the foregoing products;</p> <p>(b) the term "colored", as used in connection with textile materials or textile articles, means that they have been subjected to a process such as, but not limited to, dyeing, staining, painting, printing, or stenciling, in which color is imparted at any stage of manufacture to all or part of the fiber, yarn, fabric, or other textile article, except identification yarns and except marking in or on selvages;</p> <p>(c) the term "wool", except as used in part 1C of this schedule, means wool or hair of the types covered by the said part 1C of this schedule, or any combinations thereof;</p> <p>(d) the term "knit" means knit or crocheted;</p> <p>(e) the term "yarns" includes threads, but does not include elastic yarns or any braids;</p> <p>(f) the term "braids", as used in connection with textile materials or textile articles, includes all braids in the piece, whether of flat, tubular, or other construction, with or without cores, and whether braided from fibers, filaments (including finel wire and lame), yarns, cordage, textile fabrics, or any combination thereof;</p> <p>(g) the term "textile materials" means any material in which the base is a textile material, paper, or other material, having been removed chemically or by other means, is not visible, and</p> <p>(h) the term "textile article" or a "textile article" is an article which (i) is a textile material or is made wholly or in whole of paper, including laminated paper, or wholly or in whole of a textile material, whether the base or not provided as was formed in the process of producing the article.</p> <p>3. For the purposes of the tariff schedules --</p> <p>(a) the term "textile materials", as used with reference to textile materials and other articles of textile materials, means the base material of textile materials which are manufactured or</p> <p>(b) the term "textile materials" means any material in which the base is a textile material, paper, or other material, having been removed chemically or by other means, is not visible, and</p> <p>(c) the term "textile article" or a "textile article" is an article which (i) is a textile material or is made wholly or in whole of paper, including laminated paper, or wholly or in whole of a textile material, whether the base or not provided as was formed in the process of producing the article.</p>
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SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS

320.01	320.02	320.03	320.04
320.05	320.06	320.07	320.08
320.09	320.10	320.11	320.12
320.13	320.14	320.15	320.16
320.17	320.18	320.19	320.20
320.21	320.22	320.23	320.24
320.25	320.26	320.27	320.28
320.29	320.30	320.31	320.32
320.33	320.34	320.35	320.36
320.37	320.38	320.39	320.40
320.41	320.42	320.43	320.44
320.45	320.46	320.47	320.48
320.49	320.50	320.51	320.52
320.53	320.54	320.55	320.56
320.57	320.58	320.59	320.60
320.61	320.62	320.63	320.64
320.65	320.66	320.67	320.68
320.69	320.70	320.71	320.72
320.73	320.74	320.75	320.76
320.77	320.78	320.79	320.80
320.81	320.82	320.83	320.84
320.85	320.86	320.87	320.88
320.89	320.90	320.91	320.92
320.93	320.94	320.95	320.96
320.97	320.98	320.99	320.00

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Notes p. 1
Schedule 3,
Headnotes

Amendments and Modifications

PROVISION

Hdnte--Reference to headnote 5 added. Pub. L. 89-241, Secs. 2(a), 2(a) 15(a)(1), Oct. 7, 1965, 79 Stat. 933, 935, effective date (vi) Dec. 7, 1965.

Hdnte 4--Paragraph (b) and language "For the purposes of the tariff schedules--" added. Pub. L. 89-241, Secs. 2(a), 15(a), Oct. 7, 1965, 79 Stat. 933, 935, effective date Dec. 7, 1965.

Hdnte 5--Headnote 5 added. Pub. L. 89-241, Secs. 2(a), 15(a)(2), Oct. 7, 1965, 79 Stat. 933, 935, effective date Dec. 7, 1965.

PROVISION

Hdnte 6--Headnote 6 added. Pres. Procl. 3822 (Kennedy signed), Dec. 16, 1967, 32 F.R. 19001, effective date Jan. 1, 1968.

Hdnte 7--Headnote 7 added. Pub. L. 90-638, Secs. 2(a), (c), Oct. 24, 1968, 81 Stat. 1380, effective date Dec. 24, 1968.

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TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1969)

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SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS Part 1. - Textile Fibers and Wastes; Yarns and Threads

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3 - 1 - A

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty	
				1	2
		<p>PART 1. - TEXTILE FIBERS AND WASTES; YARNS AND THREADS</p> <p><u>Part 1 headnotes:</u></p> <p>1. For the purposes of this part -- (a) the term "waste" means all fiber, yarn, and thread wastes, including wastes obtained in the production of continuous and noncontinuous fibers, yarns, and threads, such as gin motes, scutcher waste (including tow), picker waste, card waste, top waste, comber waste (including noils), hackling waste (including tow), silver waste, roving waste, ring waste, throwster (twister or pleyer) waste, fly, sweepings, and willowed wastes, and including fiber, yarn, and thread wastes obtained in the production of other textile products (i.e., products other than fibers, yarns, or threads) or otherwise obtained; and (b) the term "advanced waste" means any of the above-mentioned wastes which have been cleaned, bleached, colored, or otherwise advanced, and includes fibers recovered by cleaning (except willowing), degumming, carbonizing, cutting, picking, garnetting or similar processes from any of the above-mentioned wastes or from textile clippings or articles, new or used, whether or not such fibers or the wastes from which recovered have also been otherwise advanced, but does not include fibers which have been carded, combed, or similarly processed, or re-useable yarns or threads.</p> <p>2. Rags and scrap cordage are covered in part 7C of this schedule.</p>			
		<p>Subpart A. - Cotton</p> <p><u>Subpart A headnotes:</u></p> <p>1. The term "number", as applied to yarns in this subpart, means the number of 540-yard hanks of yarn in 1 pound. In determining the number of any yarn whether single or plied, the actual yards per pound shall be divided by 540 and the quotient the result multiplied by the number of plies in such yarn. Fractions in the resulting yarn number shall be disregarded.</p> <p>2. In this subpart, each of the rates of duty provided for yarns, staple of cotton, not bleached, mercerized, colored, combed or pilled (items 301.01 through 301.25, inclusive) is also the "base rate" for yarn of the same number covered by item 302.00. For citation purposes, the two blanks at the end of the letter item number shall be filled in with the last two digits of the item number for the applicable base rate. Thus, "item 302.25" shall be the citation for bleached, mercerized, colored, combed, or pilled yarns, staple of cotton, of number 25.</p> <p>3. Under regulations prescribed by the Secretary of the Treasury, the staple length of cotton shall be determined for all customs purposes by application of the Official Cotton Standards of the United States for length of staple, as established by the Secretary of Agriculture and in effect when the determination is to be made.</p>			

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SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS

Part 1. - Textile Fibers and Wastes; Yarns and Threads

3 - 1 - C, D

307.30 - 308.06

Item	Stat. Suf-fix	Articles	Units of Quantity	Rates of Duty	
				1	2
307.30	00	Fine, fibers recovered from tanned-skin scrap, and fibers cut to length, all the foregoing, of wool or hair, not spinable.....	Lb.....	3.3% per lb.	8% per lb.
307.40	00	Any package containing wool or hair, including waste and advanced waste of wool or hair, subject to different rates of duty.....	Lb.....	Except as provided in heading 3 of this subpart, the highest column 1 rate applicable to any part of the contents of the package comprising not less than 5 percent thereof by weight.	Except as provided in heading 3 of this subpart, the highest column 2 rate applicable to any part of the contents of the package comprising not less than 5 percent thereof by weight.
		Fibers of wool or hair processed in any manner beyond shearing, scouring, or carding condition (including tops), but not spun:			
307.50	00	Tops.....	Lb.....	27.75% per lb. + 6.75% ad val.	27% per lb. + 20% ad val.
307.52	00	Other.....	Lb.....	27.75% per lb. + 6.25% ad val.	27% per lb. + 20% ad val.
307.60	10	Yarns of wool or hair: Yarns of wool, colored, and cut into uniform lengths of not over 3 inches, in immediate packages or containers not over 5 square in weight including the weight of the immediate package or container.....	Lb.....	Free	Free
307.62	30	Of angora rabbit hair.....	Lb.....	32% per lb. + 8% ad val.	40% per lb. + 50% ad val.
307.64	00	Other.....	Lb.....	30% per lb. + 15% ad val.	40% per lb. + 50% ad val.
	05	Handknitting yarns and fancy yarns.....	Lb.....		
	06	Other:			
		Measuring over 21,120 yards per pound.....	Lb.....		
	40	Measuring over 21,120 yards per pound.....	Lb.....		
	12	Measuring over 5,120 yards per pound.....	Lb.....		
	13	Measuring over 11,120 yards per pound.....	Lb.....		
	14	Measuring not over 5,120 yards per pound.....	Lb.....		
Subpart D. - Silk					
308.02	00	Silk cocoons suitable for reeling.....	Lb.....	Free	Free
		Raw silk, and such silk processed but not made into yarns:			
308.04		Raw silk, in skeins, as reeled from the cocoon, or as re-reeled, but not processed.....	Lb.....	Free	Free
	20	Wild or tussah silk.....	Lb.....		
	40	Other.....	Lb.....		
308.06	00	Other.....	Lb.....	11% ad val.	35% ad val.

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SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS

Part 1. - Textile Fibers and Wastes; Yarns and Threads

3 - 1 - D

308.10 - 308.90

Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty	
				1	2
		Waste and advanced waste, of silk, and fibers of silk processed but not spun:			
		Waste, not advanced:			
308.10	00	Noils containing over 50 percent by weight of fibers over 2 inches in length.....	Lb.....	11% ad val.	35% ad val.
308.12	00	Other waste.....	Lb.....	Free	Free
		Roving:			
308.16	00	Not bleached and not colored.....	Lb.....	13.5% ad val.	40% ad val.
308.18	00	Bleached or colored.....	Lb.....	16% ad val.	50% ad val.
308.20	00	Other.....	Lb.....	11% ad val.	35% ad val.
		Yarns, of silk:			
		Wholly of continuous silk fibers:			
308.30	00	Not more advanced than organzine, singles, or tram.....	Lb.....	10% ad val.	20% ad val.
308.35	00	Other.....	Lb.....	16% ad val.	40% ad val.
		Wholly of noncontinuous silk fibers:			
		Singles:			
308.40	00	Not bleached and not colored.....	Lb.....	13.5% ad val.	40% ad val.
		Bleached or colored:			
308.45	00	Not colored, measuring over 58,800 yards per pound.....	Lb.....	20% ad val.	50% ad val.
308.47	00	Other.....	Lb.....	16% ad val.	50% ad val.
		Plied:			
308.50	00	Not colored, measuring over 29,400 yards per pound.....	Lb.....	20% ad val.	50% ad val.
308.51	00	Other.....	Lb.....	16% ad val.	50% ad val.
308.55	00	Wholly of silk, but in part continuous and in part noncontinuous fibers.....	Lb.....	16% ad val.	40% ad val.
		In chief value, but not wholly, of silk:			
		Wholly of man-made fibers and noncontinuous silk fibers:			
		Singles:			
308.60	00	Not bleached and not colored.....	Lb.....	13.5% ad val.	40% ad val.
		Bleached or colored:			
308.65	00	Not colored, measuring over 58,800 yards per pound.....	Lb.....	20% ad val.	50% ad val.
308.66	00	Other.....	Lb.....	16% ad val.	50% ad val.
		Plied:			
308.70	00	Not colored, measuring over 29,400 yards per pound.....	Lb.....	20% ad val.	50% ad val.
308.71	00	Other.....	Lb.....	16% ad val.	50% ad val.
308.75	00	Other.....	Lb.....	22% ad val.	65% ad val.
308.80	00	Chenille yarns of silk.....	Lb.....	22% ad val.	65% ad val.
308.90	00	Yarns put up for handwork, and sewing threads, of silk.....	Lb.....	16% ad val.	40% ad val.

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TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1969)

SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS
Part 1. - Textile Fibers and Wastes; Yarns and Threads

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3 - 1 - E

Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty	
				1	2
		<p>Subpart E. - Man-made Fibers</p> <p><u>Subpart E headnotes:</u></p> <p>i. The provisions of this subpart do not cover --</p> <ul style="list-style-type: none"> (i) metal filaments, strips, or fibers; (ii) paper filaments, strips, or fibers; (iii) natural rubber filaments, strips, or fibers; (iv) synthetic rubber strips (in continuous or noncontinuous form); (v) nonmetallic mineral filaments, strips, or fibers, except as set forth in 2(c) infra; (vi) sterile surgical sutures and suture materials, provided for in part 13C of schedule 4; (vii) strings for musical instruments (see part 3B of schedule 7); (viii) fishing line put up and packaged for retail sale (see part 5B of schedule 7); (ix) racket strings put up and packaged for retail sale (see part 5D of schedule 7); or (x) brush bristles provided for in part 12C of schedule 7. <p>2. (a) For the purposes of the tariff schedules, the term "man-made fibers" refers to the filaments, strips, and fibers covered in this subpart.</p> <p>(b) Subject to the limitations set forth in headnotes 1 and 3 of this subpart, the respective provisions in this subpart for filaments, strips, and fibers cover such articles whether they are formed by extrusion or by other processes from substances derived by man from cellulosic or non-cellulosic materials by chemical processes, such as, but not limited to, polymerization and condensation.</p> <p>(c) The provisions of this subpart applicable to grouped filaments and fibers include grouped glass filaments and glass fibers produced therefrom, suitable for the manufacture of yarns, cordage, or woven fabrics. For the purposes of the provisions of the tariff schedules applicable to articles of man-made fibers, glass filaments and glass fibers shall be treated as man-made fibers only if they have been made into yarns or cordage, or if they are present in fabrics or other articles in the form of yarns or cordage.</p> <p>3. For the purposes of this subpart --</p> <ul style="list-style-type: none"> (a) the term "filaments" embraces monofilaments, plexiform filaments, and grouped filaments, however produced; (b) the term "monofilaments" embraces single filaments (including single filaments of laminated construction or produced from two or more filaments fused or bonded together), whether solid or hollow, whether flat, oval, round, or of any other cross-sectional configuration, which are not over 0.06 inch in maximum cross-sectional dimension; (c) the term "plexiform filaments" embraces flexible filaments each of which consists of a network or plexus of fine fibers and which are suitable for the manufacture of textiles; 			

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SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS

Part 1. - Textile Fibers and Wastes; Yarns and Threads

3 - 1 - E

309.02 - 309.25

Item	Stat. Sur- fix	Articles	Units of Quantity	Rates of Duty	
				1	2
		<p>(d) the term "strips" embraces strips (including strips of laminated construction), whether or not folded lengthwise, twisted, or crimped, which in unfolded, untwisted, and uncrimped condition are over 0.06 inch but not over one inch in width and are not over 0.01 inch in thickness;</p> <p>(e) the term "grouped filaments and strips" embraces two or more filaments or strips, as defined in (a), (b), (c), and (d) of this headnote, grouped together with the filaments or strips substantially parallel and not twisted, but the term does not include grouped filaments which have been subjected to processes such as twisting and untwisting, false twisting, crimping, and curling, and which are useable as yarns;</p> <p>(f) the term "fibers" includes filaments and strips, as defined above, in noncontinuous form, and any other fibrous structure suitable for the manufacture of textiles;</p> <p>(g) the term "in continuous form", as used with reference to filaments and strips, refers to such articles when over 30 inches in length;</p> <p>(h) the term "in noncontinuous form", as used with reference to filaments and strips, means such articles when 30 inches or less in length; and</p> <p>(i) the term "denier" means the weight in grams for a length of 9,000 meters.</p> <p><u>Subpart E statistical headnote:</u></p> <p>1. For the purpose of this subpart the term "textured", as used with reference to yarns, means such yarns having special characteristics of bulk or elasticity, or both, which have been imparted to the filaments, or the yarns, by twisting and untwisting, false twisting, crimping, curling, or other additional processing subsequent to the extrusion of the filaments from the spinneret in the case of yarns other than spun yarns, and subsequent to the yarn-spinning operation in the case of spun yarns.</p>			
		Monofilaments (in continuous form), with or without twist, whether known as monofils, artificial horse-hair, artificial straw, yarns, or by any other name:			
		Not over 150 denier:			
309.02	00	Valued not over 80 cents per pound.....	Lb.....	32¢ per lb.	40¢ per lb.
309.03	00	Valued over 80 cents per pound.....	Lb.....	40% ad val.	50% ad val.
		Over 150 denier:			
309.05	00	Valued not over 85 cents per pound.....	Lb.....	24¢ per lb.	43¢ per lb.
309.06	00	Valued over 85 cents per pound.....	Lb.....	28% ad val.	50% ad val.
309.10	00	Plexiform filaments (in continuous form), whether known as yarns or by any other name.....	Lb.....	20¢ per lb. + 24% ad val.	45¢ per lb. + 65% ad val.
		Strips (in continuous form), whether known as artificial straw, yarns, or by any other name:			
		Not laminated:			
309.20	00	Valued not over \$1 per pound.....	Lb.....	20¢ per lb.	45¢ per lb.
309.21	00	Valued over \$1 per pound.....	Lb.....	20% ad val.	45% ad val.
309.25	00	Laminated.....	Lb.....	20¢ per lb. + 24% ad val.	45¢ per lb. + 65% ad val.

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TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1969)

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SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS

Part 1. - Textile Fibers and Wastes; Yarns and Threads

3 - 1 - E

309.28 - 309.90

Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty	
				1	2
		Grouped filaments and strips (in continuous form), whether known as tow, yarns, or by any other name: Wholly of grouped filaments (except laminated filaments and plexiform filaments):			
		Of glass:			
309.28	00	Not colored.....	Lb.....	16.5% ad val.	50% ad val.
309.29	00	Colored.....	Lb.....	24% ad val.	60% ad val.
		Other:			
309.30	00	Valued not over 80 cents per pound.....	Lb.....	13.5¢ per lb.	40¢ per lb.
309.31	00	Valued over 80 cents per pound.....	Lb.....	16.5% ad val.	45% ad val.
309.35	00	Other.....	Lb.....	20¢ per lb. + 24% ad val.	45¢ per lb. + 65% ad val.
		Fibers (in noncontinuous form), whether known as cut fiber, staple, or by any other name, not carded, not combed, and not otherwise processed:			
		Wholly of filaments (except laminated filaments and plexiform filaments):			
309.41	00	Nylon, over 2 but not over 8 inches in length, essentially round in cross section and over 0.008 but not over 0.020 inch in maximum cross-sectional measurement, not crimped.....	Lb.....	2¢ per lb.	3¢ per lb.
309.43		Other.....	.....	12% ad val.	25% ad val.
		Cellulosic (rayon plus acetate):			
	20	Carpet and rug types (8 denier and coarser).....	Lb.		
	25	Other.....	Lb.		
		Other:			
	40	Polyamide.....	Lb.		
	42	Polyester.....	Lb.		
	45	Acrylic.....	Lb.		
	49	Other.....	Lb.		
309.50		Other.....	.....	20¢ per lb. + 24% ad val.	45¢ per lb. + 65% ad val.
	20	Cellulosic.....	Lb.		
	40	Other.....	Lb.		
		Waste, and advanced waste, of man-made fibers:			
		Not advanced:			
309.60	00	Noils.....	Lb.....	10% ad val.	25% ad val.
		Other:			
309.65	00	Of cellulose acetate.....	Lb.....	6¢ per lb.	50¢ per lb.
309.66		Other.....	.....	4% ad val.	10% ad val.
	10	Cellulosic.....	Lb.		
		Other:			
	20	Polyamide.....	Lb.		
	30	Polyester.....	Lb.		
	40	Acrylic.....	Lb.		
	50	Other.....	Lb.		
		Advanced:			
309.70	00	Garnetted fibers.....	Lb.....	4¢ per lb. + 10% ad val.	10¢ per lb. + 25% ad val.
309.75		Other.....	.....	12% ad val.	25% ad val.
	10	Cellulosic.....	Lb.		
		Other:			
	20	Polyamide.....	Lb.		
	30	Polyester.....	Lb.		
	40	Acrylic.....	Lb.		
	50	Other.....	Lb.		
		Textile fibers, of man-made fibers, carded, combed, or otherwise processed but not spun:			
309.80	00	In chief value, but not wholly, of man-made fibers.....	Lb.....	20¢ per lb. + 24% ad val.	45¢ per lb. + 65% ad val.
309.90	00	Wholly of man-made fibers.....	Lb.....	4¢ per lb. + 12% ad val.	10¢ per lb. + 30% ad val.

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TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1969)

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309.98 - 310.60

SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS

Part 1. - Textile Fibers and Wastes; Yarns and Threads

Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty	
				1	2
		Yarns of man-made fibers:			
		Of glass:			
309.98	00	Not colored.....	Lb.....	16.5% ad val.	50% ad val.
309.99	00	Colored.....	Lb.....	24% ad val.	60% ad val.
		Other:			
		Wholly of continuous man-made fibers (multifilament yarns):			
		Singles:			
		With twist but not over 20 turns per inch:			
310.01		Valued not over \$1 per pound...	.....	20¢ per lb.	50¢ per lb.
	15	Textured yarns.....	Lb.		
	25	Other than textured yarns:			
	45	Wholly cellulosic....	Lb.		
	65	Wholly noncellulosic..	Lb.		
310.02		Other.....	Lb.		
		Valued over \$1 per pound.....	.....	19.5% ad val.	50% ad val.
	15	Textured yarns.....	Lb.		
	25	Other than textured yarns:			
	45	Wholly cellulosic....	Lb.		
	65	Wholly noncellulosic..	Lb.		
		Other.....	Lb.		
		With over 20 turns per inch:			
310.05		Valued not over \$1 per pound...	.....	40¢ per lb.	\$1 per lb.
	20	Wholly cellulosic.....	Lb.		
	40	Wholly noncellulosic....	Lb.		
	60	Other.....	Lb.		
310.06		Valued over \$1 per pound.....	.....	18¢ per lb. + 20% ad val.	45¢ per lb. + 50% ad val.
	20	Wholly cellulosic.....	Lb.		
	40	Wholly noncellulosic....	Lb.		
	60	Other.....	Lb.		
		Plied:			
		With not over 20 turns per inch in the final twist:			
310.10		Valued not over \$1 per pound...	.....	26¢ per lb.	65¢ per lb.
	15	Textured yarns.....	Lb.		
	25	Other than textured yarns:			
	45	Wholly cellulosic....	Lb.		
	65	Wholly noncellulosic..	Lb.		
		Other.....	Lb.		
310.11		Valued over \$1 per pound.....	.....	22% ad val.	55% ad val.
	15	Textured yarns.....	Lb.		
	25	Other than textured yarns:			
	45	Wholly cellulosic....	Lb.		
	65	Wholly noncellulosic..	Lb.		
		Other.....	Lb.		
		With over 20 turns per inch in the final twist:			
310.20		Valued not over \$1 per pound...	.....	40¢ per lb.	\$1 per lb.
	20	Wholly cellulosic.....	Lb.		
	40	Wholly noncellulosic....	Lb.		
	60	Other.....	Lb.		
310.21		Valued over \$1 per pound.....	.....	18¢ per lb. + 22% ad val.	45¢ per lb. + 55% ad val.
	20	Wholly cellulosic.....	Lb.		
	40	Wholly noncellulosic....	Lb.		
	60	Other.....	Lb.		
		Wholly of noncontinuous man-made fibers:			
310.40		Singles.....	.....	5¢ per lb. + 18% ad val.	12.5¢ per lb. + 45% ad val.
	10	Textured yarns.....	Lb.		
	25	Other than textured yarns:			
	45	Wholly cellulosic.....	Lb.		
		Other.....	Lb.		
310.50		Plied.....	.....	5¢ per lb. + 20% ad val.	13.5¢ per lb. + 50% ad val.
	10	Textured yarns.....	Lb.		
	25	Other than textured yarns:			
	45	Wholly cellulosic.....	Lb.		
		Other.....	Lb.		
310.60		Other.....	.....	20¢ per lb. + 24% ad val.	45¢ per lb. + 65% ad val.
	15	Textured yarns.....	Lb.		
	30	Other.....	Lb.		

APPENDIX A

A-20

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1969)

SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS

Part 1. - Textile Fibers and Wastes; Yarns and Threads

Page 139

3 - 1 - E, F

310.80 - 312.50

Item	Stat. Suf- fix	Articles	Units of Quantity	Rates of Duty	
				1	2
310.80	00	Chenille yarns, of man-made fibers.....	Lb.....	20¢ per lb. + 24% ad val.	45¢ per lb. + 65% ad val.
		Yarns put up for handwork, and sewing threads, of man-made fibers:			
310.90	00	Valued not over 90 cents per pound.....	Lb.....	20¢ per lb.	50¢ per lb.
310.91	00	Valued over 90 cents per pound.....	Lb.....	22% ad val.	55% ad val.
 Subpart F. - Miscellaneous Textile Materials					
Subpart F headnote:					
1. For the purposes of the tariff schedules --					
(a) the term "metalized yarns" means yarns, in chief value, but not wholly, of tinsel wire or lame; and					
(b) the term "yarns, of paper" or "paper yarns" means paper which is in the form of strips not over 0.06 inch in width, or in the form of filaments made from strips by lengthwise rolling or folding, by twisting, or by similar processes, whether or not coated or impregnated with other materials, and which is suitable for making woven fabrics.					
312.10	00	Tops, roving and yarns, all the foregoing of animal hair (including human hair but not including wool and hair provided for in subpart C of this part).....	Lb.....	8% ad val.	20% ad val.
312.30	00	Metalized yarns.....	Lb.....	4¢ per lb. + 8% ad val.	6¢ per lb. + 35% ad val.
312.40	00	Yarns, of paper.....	Lb.....	14% ad val.	35% ad val.
312.50	00	Yarns, not specially provided for.....	Lb.....	16% ad val.	40% ad val.

APPENDIX A

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1969)

A-21

STAGED RATES AND HISTORICAL NOTES

Notes p. 4
Schedule 3,
Part 1

Staged Rates

Modifications of column 1 rates of duty by Pres. Proc. 3822 (Kennedy Round), Dec. 16, 1967, 32 F.R. 19002 (con.):

TSUS item	Prior rate	Rate of duty, effective with respect to articles entered on and after January 1 --				
		1968	1969	1970	1971	1972
305.81	14¢ per clean lb.	31¢ per clean lb.	27¢ per clean lb.	25¢ per clean lb.	20¢ per clean lb.	17¢ per clean lb.
305.82	25¢ per clean lb.	31¢ per clean lb.	28¢ per clean lb.	24¢ per clean lb.	21¢ per clean lb.	17¢ per clean lb.
305.83	37¢ per clean lb.	43¢ per clean lb.	38¢ per clean lb.	35¢ per clean lb.	28¢ per clean lb.	24¢ per clean lb.
305.84	44¢ per lb.	39.6¢ per lb.	34.4¢ per lb.	30.8¢ per lb.	26.4¢ per lb.	22¢ per lb.
307.02	9¢ per lb.	8¢ per lb.	7¢ per lb.	6.3¢ per lb.	5.4¢ per lb.	4.5¢ per lb.
307.04	11.5¢ per lb.	12¢ per lb.	11.4¢ per lb.	10¢ per lb.	8.5¢ per lb.	7¢ per lb.
307.06	12¢ per lb.	10.5¢ per lb.	9.5¢ per lb.	8.4¢ per lb.	7¢ per lb.	5¢ per lb.
307.08	16¢ per lb.	14.4¢ per lb.	12.8¢ per lb.	11¢ per lb.	9.5¢ per lb.	8¢ per lb.
307.10	28¢ per lb.	25¢ per lb.	22¢ per lb.	19.5¢ per lb.	16.5¢ per lb.	14¢ per lb.
307.12	13¢ per lb.	11.5¢ per lb.	10.4¢ per lb.	9¢ per lb.	7.5¢ per lb.	6.5¢ per lb.
307.18	10¢ per lb.	9¢ per lb.	8¢ per lb.	7¢ per lb.	6¢ per lb.	5¢ per lb.
307.19	8¢ per lb.	8¢ per lb.	7¢ per lb.	6.4¢ per lb.	5.4¢ per lb.	4.5¢ per lb.
307.42	40¢ per lb. + 10% ad val.	36¢ per lb. + 9% ad val.	32¢ per lb. + 8% ad val.	28¢ per lb. + 7% ad val.	24¢ per lb. + 6% ad val.	20¢ per lb. + 5% ad val.
308.06	14% ad val.	12.5% ad val.	11% ad val.	9.5% ad val.	8% ad val.	7% ad val.
308.10	14% ad val.	12.5% ad val.	11% ad val.	9.5% ad val.	8% ad val.	7% ad val.
308.16	17% ad val.	15% ad val.	13.5% ad val.	11.5% ad val.	10% ad val.	8.5% ad val.
308.18	20% ad val.	18% ad val.	16% ad val.	14% ad val.	12% ad val.	10% ad val.
308.20	14% ad val.	12.5% ad val.	11% ad val.	9.5% ad val.	8% ad val.	7% ad val.
308.35	20% ad val.	18% ad val.	16% ad val.	14% ad val.	12% ad val.	10% ad val.
308.40	17% ad val.	15% ad val.	13.5% ad val.	11.5% ad val.	10% ad val.	8.5% ad val.
308.45	25.5% ad val.	22.5% ad val.	20% ad val.	17.5% ad val.	15% ad val.	12.5% ad val.
308.47	20% ad val.	18% ad val.	16% ad val.	14% ad val.	12% ad val.	10% ad val.
308.50	25.5% ad val.	22.5% ad val.	20% ad val.	17.5% ad val.	15% ad val.	12.5% ad val.
308.51	20% ad val.	18% ad val.	16% ad val.	14% ad val.	12% ad val.	10% ad val.
308.55	20% ad val.	18% ad val.	16% ad val.	14% ad val.	12% ad val.	10% ad val.
308.60	17% ad val.	15% ad val.	13.5% ad val.	11.5% ad val.	10% ad val.	8.5% ad val.
308.65	25.5% ad val.	22.5% ad val.	20% ad val.	17.5% ad val.	15% ad val.	12.5% ad val.
308.66	20% ad val.	18% ad val.	16% ad val.	14% ad val.	12% ad val.	10% ad val.
308.70	25.5% ad val.	22.5% ad val.	20% ad val.	17.5% ad val.	15% ad val.	12.5% ad val.
308.71	20% ad val.	18% ad val.	16% ad val.	14% ad val.	12% ad val.	10% ad val.
308.75	27.5% ad val.	24.5% ad val.	22% ad val.	19% ad val.	16% ad val.	13.5% ad val.
308.80	27.5% ad val.	24.5% ad val.	22% ad val.	19% ad val.	16% ad val.	13.5% ad val.
308.90	20% ad val.	18% ad val.	16% ad val.	14% ad val.	12% ad val.	10% ad val.
309.02	40¢ per lb.	36¢ per lb.	32¢ per lb.	28¢ per lb.	24¢ per lb.	20¢ per lb.
309.03	50% ad val.	45% ad val.	40% ad val.	35% ad val.	30% ad val.	25% ad val.
309.05	30¢ per lb.	27¢ per lb.	24¢ per lb.	21¢ per lb.	18¢ per lb.	15¢ per lb.
309.06	35¢ ad val.	31¢ ad val.	28¢ ad val.	24¢ ad val.	21¢ ad val.	17.5¢ ad val.
309.10	25¢ per lb. + 30% ad val.	22¢ per lb. + 27% ad val.	20¢ per lb. + 24% ad val.	17¢ per lb. + 21% ad val.	15¢ per lb. + 18% ad val.	12¢ per lb. + 15% ad val.
309.20	25¢ per lb.	22.5¢ per lb.	20¢ per lb.	17.5¢ per lb.	15¢ per lb.	12.5¢ per lb.
309.21	25% ad val.	22% ad val.	20% ad val.	17% ad val.	15% ad val.	12.5% ad val.
309.25	25¢ per lb. + 30% ad val.	22.5¢ per lb. + 27% ad val.	20¢ per lb. + 24% ad val.	17.5¢ per lb. + 21% ad val.	15¢ per lb. + 18% ad val.	12.5¢ per lb. + 15% ad val.
309.28	21% ad val.	18.5% ad val.	16.5% ad val.	14.5% ad val.	12.5% ad val.	10.5% ad val.
309.29	30% ad val.	27% ad val.	24% ad val.	21% ad val.	18% ad val.	15% ad val.
309.30	17¢ per lb.	15.3¢ per lb.	13.5¢ per lb.	11.9¢ per lb.	10¢ per lb.	8.5¢ per lb.
309.31	21% ad val.	18.5% ad val.	16.5% ad val.	14.5% ad val.	12.5% ad val.	10.5% ad val.
309.35	25¢ per lb. + 30% ad val.	22¢ per lb. + 27% ad val.	20¢ per lb. + 24% ad val.	17¢ per lb. + 21% ad val.	15¢ per lb. + 18% ad val.	12¢ per lb. + 15% ad val.
309.41	3¢ per lb.	2.5¢ per lb.	2¢ per lb.	1.5¢ per lb.	1.5¢ per lb.	1¢ per lb.
309.43	15% ad val.	13% ad val.	12% ad val.	10% ad val.	9% ad val.	7.5% ad val.
309.50	25¢ per lb. + 30% ad val.	22.5¢ per lb. + 27% ad val.	20¢ per lb. + 24% ad val.	17.5¢ per lb. + 21% ad val.	15¢ per lb. + 18% ad val.	12.5¢ per lb. + 15% ad val.
309.60	12.5% ad val.	11% ad val.	10% ad val.	8.5% ad val.	7% ad val.	6% ad val.

APPENDIX A

A-22

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1969)

STAGED RATES AND HISTORICAL NOTES

Notes p. 5
Schedule 3,
Part I

Staged Rates

Modifications of column 1 rates of duty by Pres. Proc. 3822 (Kennedy Round), Dec. 16, 1967, 32 F.R. 19002 (con.):

TSUS item	Prior rate	Rate of duty, effective with respect to articles entered on and after January 1 --				
		1968	1969	1970	1971	1972
309.65	7.5¢ per lb.	6.7¢ per lb.	6¢ per lb.	5.2¢ per lb.	4.5¢ per lb.	3.7¢ per lb.
309.66	5¢ ad val.	4¢ ad val.	4¢ ad val.	3¢ ad val.	3¢ ad val.	2.5¢ ad val.
309.70	5¢ per lb. + 12.5% ad val.	4.5¢ per lb. + 11% ad val.	4¢ per lb. + 10% ad val.	3.5¢ per lb. + 8.5% ad val.	3¢ per lb. + 7% ad val.	2.5¢ per lb. + 6% ad val.
309.75	15% ad val.	13% ad val.	12% ad val.	10% ad val.	9% ad val.	7.5% ad val.
309.80	25¢ per lb. + 30% ad val.	22¢ per lb. + 27% ad val.	20¢ per lb. + 24% ad val.	17¢ per lb. + 21% ad val.	15¢ per lb. + 18% ad val.	12¢ per lb. + 15% ad val.
309.90	5¢ per lb. + 15% ad val.	4.5¢ per lb. + 13% ad val.	4¢ per lb. + 12% ad val.	3.5¢ per lb. + 10% ad val.	3¢ per lb. + 9% ad val.	2.5¢ per lb. + 7.5% ad val.
309.98	21% ad val.	18.5% ad val.	16.5% ad val.	14.5% ad val.	12.5% ad val.	10.5% ad val.
309.99	30% ad val.	27% ad val.	24% ad val.	21% ad val.	18% ad val.	15% ad val.
310.01	25¢ per lb.	22.5¢ per lb.	20¢ per lb.	17.5¢ per lb.	15¢ per lb.	12.5¢ per lb.
310.02	22.5% ad val.	21% ad val.	19.5% ad val.	18.5% ad val.	17% ad val.	16% ad val.
310.05	50¢ per lb.	45¢ per lb.	40¢ per lb.	35¢ per lb.	30¢ per lb.	25¢ per lb.
310.06	22.5¢ per lb. + 25% ad val.	20¢ per lb. + 22.5% ad val.	18¢ per lb. + 20% ad val.	15¢ per lb. + 17.5% ad val.	13¢ per lb. + 15% ad val.	11¢ per lb. + 12.5% ad val.
310.10	32.5¢ per lb.	29¢ per lb.	26¢ per lb.	22.5¢ per lb.	19¢ per lb.	16¢ per lb.
310.11	27.5% ad val.	24.5% ad val.	22% ad val.	19% ad val.	16% ad val.	13.5% ad val.
310.20	50¢ per lb.	45¢ per lb.	40¢ per lb.	35¢ per lb.	30¢ per lb.	25¢ per lb.
310.21	22.5¢ per lb. + 27.5% ad val.	20¢ per lb. + 24.5% ad val.	18¢ per lb. + 22% ad val.	15.5¢ per lb. + 19% ad val.	13¢ per lb. + 16.5% ad val.	11¢ per lb. + 13.5% ad val.
310.40	6.25¢ per lb. + 22.5% ad val.	5.6¢ per lb. + 20% ad val.	5¢ per lb. + 18% ad val.	4.3¢ per lb. + 15.5% ad val.	3.7¢ per lb. + 13.5% ad val.	3.1¢ per lb. + 11% ad val.
310.50	6.25¢ per lb. + 25% ad val.	5.5¢ per lb. + 22.5% ad val.	5¢ per lb. + 20% ad val.	4¢ per lb. + 17.5% ad val.	3.5¢ per lb. + 15% ad val.	3¢ per lb. + 12.5% ad val.
310.60	25¢ per lb. + 30% ad val.	22¢ per lb. + 27% ad val.	20¢ per lb. + 24% ad val.	17¢ per lb. + 21% ad val.	15¢ per lb. + 18% ad val.	12¢ per lb. + 15% ad val.
310.80	25¢ per lb. + 30% ad val.	22¢ per lb. + 27% ad val.	20¢ per lb. + 24% ad val.	17¢ per lb. + 21% ad val.	15¢ per lb. + 18% ad val.	12¢ per lb. + 15% ad val.
312.10	10% ad val.	9% ad val.	8% ad val.	7% ad val.	6% ad val.	5% ad val.
312.30	6¢ per lb. + 10% ad val.	5¢ per lb. + 9% ad val.	4¢ per lb. + 8% ad val.	4¢ per lb. + 7% ad val.	3¢ per lb. + 6% ad val.	3¢ per lb. + 5% ad val.
312.40	17.5% ad val.	15.5% ad val.	14% ad val.	12% ad val.	10% ad val.	8.5% ad val.
312.50	20% ad val.	18% ad val.	16% ad val.	14% ad val.	12% ad val.	10% ad val.

Other Amendments and Modifications

PROVISION	PROVISION
309.65--Column 1 rate of duty of 7.5¢ ad val. reduced to 6.7¢ ad val. on Jan. 1, 1968. General Headnote 3(g).	309.65--Language "Karakul wools and other wools" not finer than 20s for use only in the manufacture of pressed felt for polishing glass and mirror plates added to article description. Pub. L. 88-311, Secs. 1(a), (c), June 30, 1964, 78 Stat. 226, effective date June 30, 1964.
309.70--Column 1 rate of duty of 5¢ ad val. reduced to 4.5¢ ad val. on Jan. 1, 1968. General Headnote 3(g).	308.40--Certain yarns wholly of noncontinuous silk fibers
309.75--Article description amended by deleting comma and inserting "wadded" after "7.5%" and deleting comma after "12.5%" Pub. L. 88-311, Secs. 1(a), (c), June 30, 1964, 78 Stat. 226, effective date June 30, 1964.	308.50 temporarily exempted from duty until Nov. 8, 1968 by former items 905.30 and 905.31.
310.01--Column 1 rate of duty of 25¢ per lb. reduced to 22.5¢ per lb. on Jan. 1, 1968. General Headnote 3(g).	
310.02--Column 1 rate of duty of 22.5% ad val. reduced to 21% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.05--Column 1 rate of duty of 50¢ per lb. reduced to 45¢ per lb. on Jan. 1, 1968. General Headnote 3(g).	
310.06--Column 1 rate of duty of 22.5¢ per lb. + 25% ad val. reduced to 20¢ per lb. + 22.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.10--Column 1 rate of duty of 32.5¢ per lb. reduced to 29¢ per lb. on Jan. 1, 1968. General Headnote 3(g).	
310.11--Column 1 rate of duty of 27.5% ad val. reduced to 24.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.20--Column 1 rate of duty of 50¢ per lb. reduced to 45¢ per lb. on Jan. 1, 1968. General Headnote 3(g).	
310.21--Column 1 rate of duty of 22.5¢ per lb. + 27.5% ad val. reduced to 20¢ per lb. + 24.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.40--Column 1 rate of duty of 6.25¢ per lb. + 22.5% ad val. reduced to 5.6¢ per lb. + 20% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.50--Column 1 rate of duty of 6.25¢ per lb. + 25% ad val. reduced to 5.5¢ per lb. + 22.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.60--Column 1 rate of duty of 25¢ per lb. + 30% ad val. reduced to 22¢ per lb. + 27% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.80--Column 1 rate of duty of 25¢ per lb. + 30% ad val. reduced to 22¢ per lb. + 27% ad val. on Jan. 1, 1968. General Headnote 3(g).	
312.10--Column 1 rate of duty of 10% ad val. reduced to 9% ad val. on Jan. 1, 1968. General Headnote 3(g).	
312.30--Column 1 rate of duty of 6¢ per lb. + 10% ad val. reduced to 5¢ per lb. + 9% ad val. on Jan. 1, 1968. General Headnote 3(g).	
312.40--Column 1 rate of duty of 17.5% ad val. reduced to 15.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
312.50--Column 1 rate of duty of 20% ad val. reduced to 18% ad val. on Jan. 1, 1968. General Headnote 3(g).	

PROVISION	PROVISION
309.65--Column 1 rate of duty of 7.5¢ ad val. reduced to 6.7¢ ad val. on Jan. 1, 1968. General Headnote 3(g).	308.40--Certain yarns wholly of noncontinuous silk fibers
309.70--Column 1 rate of duty of 5¢ ad val. reduced to 4.5¢ ad val. on Jan. 1, 1968. General Headnote 3(g).	308.50 temporarily exempted from duty until Nov. 8, 1968 by former items 905.30 and 905.31.
309.75--Article description amended by deleting comma and inserting "wadded" after "7.5%" and deleting comma after "12.5%" Pub. L. 88-311, Secs. 1(a), (c), June 30, 1964, 78 Stat. 226, effective date June 30, 1964.	
310.01--Column 1 rate of duty of 25¢ per lb. reduced to 22.5¢ per lb. on Jan. 1, 1968. General Headnote 3(g).	
310.02--Column 1 rate of duty of 22.5% ad val. reduced to 21% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.05--Column 1 rate of duty of 50¢ per lb. reduced to 45¢ per lb. on Jan. 1, 1968. General Headnote 3(g).	
310.06--Column 1 rate of duty of 22.5¢ per lb. + 25% ad val. reduced to 20¢ per lb. + 22.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.10--Column 1 rate of duty of 32.5¢ per lb. reduced to 29¢ per lb. on Jan. 1, 1968. General Headnote 3(g).	
310.11--Column 1 rate of duty of 27.5% ad val. reduced to 24.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.20--Column 1 rate of duty of 50¢ per lb. reduced to 45¢ per lb. on Jan. 1, 1968. General Headnote 3(g).	
310.21--Column 1 rate of duty of 22.5¢ per lb. + 27.5% ad val. reduced to 20¢ per lb. + 24.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.40--Column 1 rate of duty of 6.25¢ per lb. + 22.5% ad val. reduced to 5.6¢ per lb. + 20% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.50--Column 1 rate of duty of 6.25¢ per lb. + 25% ad val. reduced to 5.5¢ per lb. + 22.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.60--Column 1 rate of duty of 25¢ per lb. + 30% ad val. reduced to 22¢ per lb. + 27% ad val. on Jan. 1, 1968. General Headnote 3(g).	
310.80--Column 1 rate of duty of 25¢ per lb. + 30% ad val. reduced to 22¢ per lb. + 27% ad val. on Jan. 1, 1968. General Headnote 3(g).	
312.10--Column 1 rate of duty of 10% ad val. reduced to 9% ad val. on Jan. 1, 1968. General Headnote 3(g).	
312.30--Column 1 rate of duty of 6¢ per lb. + 10% ad val. reduced to 5¢ per lb. + 9% ad val. on Jan. 1, 1968. General Headnote 3(g).	
312.40--Column 1 rate of duty of 17.5% ad val. reduced to 15.5% ad val. on Jan. 1, 1968. General Headnote 3(g).	
312.50--Column 1 rate of duty of 20% ad val. reduced to 18% ad val. on Jan. 1, 1968. General Headnote 3(g).	

APPENDIX A

TARIFF SCHEDULES OF THE UNITED STATES ANNOTATED (1969)

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STAGED RATES AND HISTORICAL NOTES

Notes p. 6
Schedule 3,
Part 1

Statistical Notes

PROVISION	Effective date	PROVISION	Effective date
315.05--See Other Amendments and Modifications		310.11--	
315.10--See Other Amendments and Modifications		15--Estab. (transferred from 310.1120pt, 40pt & 60pt).....	July 1, 1966
315.07--See Other Amendments and Modifications		20--Disc. (transferred to 310.1115 & 25).....	do
		25--Estab. (transferred from 310.1120pt).....	do
		40--Disc. (transferred to 310.1115 & 45).....	do
		45--Estab. (transferred from 310.1140pt).....	do
		60--Disc. (transferred to 310.1115 & 65).....	do
		65--Estab. (transferred from 310.1160pt).....	do
310.01--		310.40--	
15--Estab. (transferred from 310.0120pt, 40pt & 60pt).....	July 1, 1966	10--Estab. (transferred from 310.4020pt & 40pt).....	July 1, 1966
20--Disc. (transferred to 310.0115 & 25).....	do	20--Disc. (transferred to 310.4010 & 25).....	do
25--Estab. (transferred from 310.0120pt).....	do	25--Estab. (transferred from 310.4020pt).....	do
40--Disc. (transferred to 310.0115 & 45).....	do	40--Disc. (transferred to 310.4010 & 45).....	do
45--Estab. (transferred from 310.0140pt).....	do	45--Estab. (transferred from 310.4040pt).....	do
60--Disc. (transferred to 310.0115 & 65).....	do		
65--Estab. (transferred from 310.0160pt).....	do	310.50--	
310.02--		10--Estab. (transferred from 310.5020pt & 40pt).....	July 1, 1966
15--Estab. (transferred from 310.0220pt, 40pt & 60pt).....	July 1, 1966	20--Disc. (transferred to 310.5010 & 25).....	do
20--Disc. (transferred to 310.0215 & 25).....	do	25--Estab. (transferred from 310.5020pt).....	do
25--Estab. (transferred from 310.0220pt).....	do	40--Disc. (transferred to 310.5010 & 45).....	do
40--Disc. (transferred to 310.0215 & 45).....	do	45--Estab. (transferred from 310.5040pt).....	do
45--Estab. (transferred from 310.0240pt).....	do		
60--Disc. (transferred to 310.0215 & 65).....	do	310.60--	
65--Estab. (transferred from 310.0260pt).....	do	15--Estab. (transferred from 310.6020pt & 40pt).....	July 1, 1966
310.10--		20--Disc. (transferred to 310.6015 & 25).....	do
15--Estab. (transferred from 310.1020pt, 40pt & 60pt).....	July 1, 1966	30--Estab. (transferred from 310.6020pt & 40pt).....	do
20--Disc. (transferred to 310.1015 & 25).....	do	40--Disc. (transferred to 310.6015 & 45).....	do
25--Estab. (transferred from 310.1020pt).....	do		
40--Disc. (transferred to 310.1015 & 45).....	do		
45--Estab. (transferred from 310.1040pt).....	do		
60--Disc. (transferred to 310.1015 & 65).....	do		
65--Estab. (transferred from 310.1060pt).....	do		

A P P E N D I X B

Value of U.S. imports for consumption, by TSUS
items included in the individual summaries
of this volume, total and from the 3 prin-
cipal suppliers, 1968

Value of U.S. imports for consumption, by TSUS items included in the individual summaries of this volume, total and from the 3 principal suppliers, 1968

(In thousands of dollars. The dollar value of imports shown is defined generally as the market value in the foreign country and therefore excludes U.S. import duties, freight, and transportation insurance)

Summary title and page; TSUS item	All countries		First supplier		Second supplier		Third supplier	
	Amount	Per-						
	in 1968	cent change from 1967	Country	Value	Country	Value	Country	Value
Raw silk and processed raw silk (p. 5)								
308.02	1/	1/	-	-	-	-	-	-
308.04	17,769	-27	Korea Rep.	6,800	Italy	6,241	Japan	4,269
308.06	15	-17	Spain	12	Italy	2	Japan	1
Waste of silk, and fibers of silk processed but not spun (p. 13)								
308.10	1/	1/	-	-	-	-	-	-
308.12	502	+361	Italy	252	Japan	243	Korea Rep.	7
308.16	1/	1/	-	-	-	-	-	-
308.18	2/	-100	-	-	-	-	-	-
308.20	18	3/	Japan	17	Italy	4/	-	-
Thrown-silk yarn (p. 21)								
308.30	1,173	+28	Japan	888	Italy	285	-	-
308.35	26	-24	Italy	25	Japan	1	-	-
Spun-silk yarn (p. 27)								
308.40	388	+185	Italy	335	Japan	42	Korea Rep.	8
308.45	3	-82	Italy	3	-	-	-	-
308.47	105	+28	Italy	105	-	-	-	-
308.50	1,038	-19	Italy	625	Japan	346	Switzerland	44
308.51	254	+129	Italy	224	Switzerland	28	Japan	3
308.60	2/	-100	-	-	-	-	-	-
308.65	1/	1/	-	-	-	-	-	-
308.66	2	-50	Italy	2	-	-	-	-
308.70	44	+340	Italy	44	-	-	-	-
308.71	1/	1/	-	-	-	-	-	-
Certain silk yarns (p. 33)								
308.55	2/	-100	-	-	-	-	-	-
308.75	172	+45	Switzerland	167	Japan	5	W. Germany	4/
308.80	1/	1/	-	-	-	-	-	-
Handwork yarns and sewing threads of silk (p. 39)								
308.90	2	-33	Italy	1	Japan	1	Spain	1
Manmade monofilaments (continuous fibers) (p. 45)								
309.02	4	+100	W. Germany	3	Italy	1	Switzerland	4/
309.03	600	-5	Italy	382	W. Germany	159	France	38
309.05	12	-14	W. Germany	10	Italy	1	-	-
309.06	1,159	+28	W. Germany	1,038	Belgium	99	Switzerland	9
Manmade plexiform filaments and strips (p. 59)								
309.10	4/	3/	-	-	-	-	-	-
309.20	44	-40	Switzerland	25	Japan	16	W. Germany	2
309.21	40	-11	Switzerland	18	W. Germany	17	Japan	3
309.25	2/	-100	-	-	-	-	-	-
309.35	11	-15	Canada	11	-	-	-	-
Grouped manmade filaments (p. 65)								
309.28	2/	-100	-	-	-	-	-	-
309.29	1/	1/	-	-	-	-	-	-
309.30	1,195	+177	W. Germany	486	Japan	438	Canada	222
309.31	137	+448	W. Germany	47	France	43	Italy	23

See footnotes at end of table.

Value of U.S. imports for consumption, by TSUS items included in the individual summaries of this volume, total and from the 3 principal suppliers, 1968

(In thousands of dollars. The dollar value of imports shown is defined generally as the market value in the foreign country and therefore excludes U.S. import duties, freight, and transportation insurance)

Summary title and page; TSUS item	All countries		First supplier		Second supplier		Third supplier	
	Amount in 1968	Per-cent change from 1967	Country	Value	Country	Value	Country	Value
Staple and other noncontinuous manmade fibers (p. 75)								
309.41	334	+65	France	174	W. Germany	100	Italy	32
309.43	60,907	+36	W. Germany	22,654	U.K.	9,709	Japan	9,693
309.50	2/	-100	-	-	-	-	-	-
Waste of manmade fibers (p. 93)								
309.60	5	-74	U.K.	5	France	1	-	-
309.65	1/	1/	-	-	-	-	-	-
309.66	3,130	+12	Canada	813	U.K.	782	W. Germany	714
Advanced waste of manmade fibers (p. 103)								
309.70	2/	-100	-	-	-	-	-	-
309.75	224	+43	Italy	103	W. Germany	61	U.K.	15
Manmade fibers, processed but not spun (p. 109)								
309.80	5	-17	France	4	Canada	1	Japan	4/
309.90	57	+33	Canada	32	France	18	U.K.	5
Yarns wholly of continuous manmade fibers and yarns of glass (p. 117)								
309.98	487	-12	France	461	Italy	14	W. Germany	8
309.99	2/	-100	-	-	-	-	-	-
310.01	20,643	+111	W. Germany	5,851	Italy	4,163	France	2,063
310.02	26,918	+146	W. Germany	9,573	Italy	5,697	Japan	3,122
310.05	4/	-78	Ireland	4/	-	-	-	-
310.06	26	+62	Canada	16	Japan	8	Phil. Rep.	1
310.10	1,316	+1,448	W. Germany	503	Australia	310	Netherlands	285
310.11	13,926	+105	W. Germany	5,355	Spain	2,370	Israel	1,112
310.20	2/	-100	-	-	-	-	-	-
310.21	6	-89	France	3	W. Germany	2	Japan	1
Yarns wholly of noncontinuous manmade fibers (except glass) (p. 133)								
310.40	649	-13	Japan	357	Norway	201	Switzerland	64
310.50	3,957	+144	Japan	2,870	Norway	310	Canada	285
Yarns of manmade fibers, not elsewhere enumerated, and chenille yarns of manmade fibers (p. 141)								
310.60	249	-38	Japan	86	Italy	85	Switzerland	30
310.80	61	-15	Spain	60	Japan	1	-	-
Sewing thread and handwork yarns of manmade fibers (p. 147)								
310.90	33	+1,550	Hong Kong	25	Mexico	4	Japan	2
310.91	1,420	+86	France	771	W. Germany	191	Belgium	164
Miscellaneous textile yarns and materials (p. 155)								
312.10	139	3/	Italy	136	France	3	-	-
312.30	41	-15	W. Germany	25	France	11	Japan	3
312.40	2/	-100	-	-	-	-	-	-
312.50	43	+438	Canada	43	-	-	-	-

1/ No imports reported in 1967 and 1968.

2/ No imports reported in 1968.

3/ No imports reported in 1967.

4/ Less than \$500.

Source: Compiled from official statistics of the U.S. Department of Commerce.

A P P E N D I X C

Value of U.S. imports for consumption, by TSUS items included in the individual summaries of this volume, total and from the 3 principal suppliers, 1969

Value of U.S. imports for consumption, by TSUS items included in the individual summaries of this volume, total and from the 3 principal suppliers, 1969

(In thousands of dollars. The dollar value of imports shown is defined generally as the market value in the foreign country and therefore excludes U.S. import duties, freight, and transportation insurance)

Summary title and page; TSUS item	All countries	Per-cent	First supplier	Second supplier	Third supplier
	Amount	change	Country	Value	Country
	in 1969	from 1968			Value
Staple and other noncontinuous manmade fibers (p. 75)					
309.41	553	+66	Italy	437	63 : W. Germany
309.43	42,823	-30	W. Germany	10,948	10,032 : U.K.
309.50	2	1/	Japan	3	3/ : -
Waste of manmade fibers (p. 93)					
309.60	2	-60	Haiti	1	1 : -
309.65	2/	2/	-	-	-
309.66	3,636	+16	W. Germany	1,563	974 : U.K.
Advanced waste of manmade fibers (p. 103)					
309.70	2	1/	U.K.	1	1 : -
309.75	47	-79	W. Germany	27	6 : U.K.
Manmade fibers, processed but not spun (p. 109)					
309.80	1	-80	Spain	1	-
309.90	404	+609	Japan	289	98 : U.K.
Yarns wholly of continuous manmade fibers and yarns of glass (p. 117)					
309.98	352	-28	France	338	14 : -
309.99	2/	2/	-	-	-
310.01	12,641	-39	W. Germany	6,212	1,400 : Japan
310.02	30,031	+12	W. Germany	18,118	3,019 : Israel
310.05	4/	-100	-	-	-
310.06	18	-31	Japan	10	3 : Dom. Rep.
310.10	296	-78	Netherlands	89	87 : Switzerland
310.11	6,021	-57	W. Germany	1,946	963 : Japan
310.20	4	1/	Canada	4	-
310.21	16	+167	France	7	4 : Canada
Yarns wholly of noncontinuous manmade fibers (except glass) (p. 133)					
310.40	1,310	+102	Austria	594	376 : W. Germany
310.50	6,296	+59	Japan	5,420	283 : Norway
Yarns of manmade fibers, not elsewhere enumerated, and chenille yarns of manmade fibers (p. 141)					
310.60	370	+49	Japan	166	59 : Canada
310.80	420	+589	Spain	384	28 : Italy
Sewing thread and handwork yarns of manmade fibers (p. 147)					
310.90	80	+142	Hong Kong	67	9 : Japan
310.91	1,207	-15	France	604	159 : Switzerland
Miscellaneous textile yarns and materials (p. 155)					
312.10	5	-96	Belgium	3	1 : U.K.
312.30	131	+220	Japan	75	39 : France
312.40	3/	1/	Canada	3/	-
312.50	2	-95	Japan	2	3/ : -

1/ No imports reported in 1968.

2/ No imports reported in 1968 and 1969.

3/ Less than \$500.

4/ No imports reported in 1969.

Source: Compiled from official statistics of the U.S. Department of Commerce.

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OTHER AVAILABLE VOLUMES OF THE SUMMARIES SERIES

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