70.19 - Glass fibres (including glass wool) and articles thereof (for example, yarn, woven fabrics) (+)**.**

- Slivers, rovings, yarn and chopped strands :

7019.11 - - Chopped strands, of a length of not more than 50 mm

7019.12 - - Rovings

7019.19 - - Other

- Thin sheets (voiles), webs, mats, mattresses, boards and similar nonwoven products :

7019.31 - - Mats

7019.32 - - Thin sheets (voiles)

7019.39 - - Other

7019.40 - Woven fabrics of rovings

- Other woven fabrics :

7019.51 - - Of a width not exceeding 30 cm

7019.52 - - Of a width exceeding 30 cm, plain weave, weighing less than 250 g/m^2, of filaments measuring per single yarn not more than 136 tex

7019.59 - - Other

7019.90 - Other

This heading includes glass fibres themselves and glass fibres (including glass wool as defined in Note 4 to this Chapter) made up in various forms, including those glass fibre articles excluded from other headings by reason of their nature.

Glass fibres have the following properties : they are less flexible than vegetable or animal textile fibres (glass yarns cannot be knotted easily); they do not stretch; they are strong (stronger than any of the textile fibres of Section XI); they do not burn; they do not rot and are resistant to water and most acids; they are a poor conductor of electricity and, in some cases, of heat or sound; they are non-hygroscopic.

Glass fibres can be obtained by various processes which, apart from a few exceptions, can be grouped in three broad categories :

(I) **Mechanical drawing**.

In this process glass is melted in a furnace. It flows into a forehearth, the underside of which is fitted with bushings made of alloys of precious metal (normally of rhodium or of platinum) to withstand the high temperatures. The bushings are pierced by a large number of small holes through which molten glass threads flow. After a sizing treatment (for example, with silicone), these threads are carried on to a high speed mandril which draws them out into very fine parallel filaments. Thus a continuous strand similar to a man-made textile filament yarn is obtained.

Thicker fibres may be obtained by a more or less identical process; these are wound in the form of a web which is used directly as such (heat- or sound-insulation mats).

(II) **Centrifugal drawing**.

In this system, glass melted in pots falls on a refractory clay disc revolving at great speed and fitted along the **periphery** with a very large number of teeth. The glass adheres to this disc, which is heated by the flame from a furnace, but, at the same time it is drawn into filaments by means of centrifugal force. These filaments are blown on to a stationary table and coiled on to a cooling drum.

This process thus yields short fibres known as glass wool, which is used in bulk without spinning.

(III) **Drawing by means of fluids**.

In this process, drawing is achieved by means of jets of high-pressure steam or compressed air blown from either side on to the filaments of molten glass coming from the furnace through a drawing-plate. Under the action of these jets, the filaments are broken into short lengths which are coated with lubricants in the course of manufacture.

The fibres thus obtained are coiled on a drum to form either webs which are used as such (insulation blankets), or continuous slivers or rovings of fibres (similar to slivers or rovings of waste silk) which can subsequently be spun into yarn.

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Glass fibres and articles of glass fibres of this heading may be, in particular, in the following forms :

(A) Glass wool in bulk.

(B) Slivers, rovings, yarn and chopped strands.

(C) Thin sheets (voiles), webs, mats, mattresses, boards and similar nonwoven products.

(D) Woven fabrics, including narrow fabrics.

This heading also covers curtains, draperies and other articles of woven glass fabrics.

It is pointed out that although " chemical embroideries " or embroideries without visible ground, in which the embroidering thread consists of glass fibres, are classified here, embroidery in any of the textiles classified in Section XI, in which some of the effects are obtained by embroidering threads made of glass fibres, is **excluded** (**heading 58.10**).

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The uses of glass fibres are increasing steadily, for example :

(1) In furnishing and interior decoration (e.g., for upholstery, wall hangings, curtains, mosquito-nets), in the form of fabrics, which can be dyed or printed.

(2) For heat-insulation purposes (e.g., for insulating roofs, chimneys, boilers, furnaces, steam piping, steam turbine bodies, tubes or pipes, ice-cupboards, and heat-insulated vans or wagons) in the form of fibres in bulk, nodules, felts, pads, casings (for pipes) or braids, (whether or not impregnated with glue, pitch or other substances, or with paper, textile or wire mesh supports).

(3) For sound-insulation (e.g., for flats, offices, ships' cabins, theatres) in the form of fibres in bulk, felts, mattresses or rigid boards.

(4) For electrical insulation (e.g., for electric wires, cables or other current carrying apparatus) in the form of filaments, yarn, tape, braid, fabric (whether or not impregnated with natural resins, plastics, asphalt, etc.).

(5) For the reinforcement of thermoplastic and thermoset resins for making façade coverings and panellings, domes and flat or corrugated plates for the building industry, tanks, vats and pipes for storing and transporting liquids, machine hoods and other moulded parts for industrial or agricultural use, bumpers for motor vehicles, equipment for track vehicles, railway coaches or aircraft, boat hulls, skis, tennis rackets and other articles for sport, etc.

(6) For the manufacture of miscellaneous other products such as : filtration products for air-conditioning or for the chemical industry, brushes, wicks for lamps and lighters, cinema screens.

The heading **excludes** :

(a) Semi-finished products and articles obtained by compressing glass fibres, or superimposed layers of glass fibres, impregnated with plastics, if having a hard, rigid character and hence having lost the character of articles of glass fibres (**Chapter 39**).

(b) Mineral wools (see Note 4 to Chapter 70) and articles thereof of **heading 68.06**.

(c) Roofing boards with a substrate consisting of glass-fibre web or fabric completely enveloped in, or covered on both sides by, a layer of asphalt or similar material (**heading 68.07**).

(d) Multiple-walled insulating glass with an interlayer of glass fibres (**heading 70.08**).

(e) Optical fibre cables of **heading 85.44**, electrical insulators (**heading 85.46**) and fittings of insulating material (**heading 85.47**).

(f) Optical fibres, bundles and cables of **heading 90.01**.

(g) Dolls' wigs of glass fibres (**heading 95.03**) and fishing rods made of glass fibres agglomerated with synthetic resin (**heading 95.07**).

(h) Brushes of glass fibres (**heading 96.03**).

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Subheading Explanatory Notes.

Subheading 7019.11

Chopped strand is produced by cutting strands containing many parallel filaments. Generally, chopped strands are used to provide strength, for example, to plastics or mortar.

Subheading 7019.12

A **glass roving** consists of a loose assemblage of one or more strands of long (continuous) filaments with little or no twist (less than 5 turns per metre). Roving is generally used in the production of continuous filament glass yarns, but can also be used directly in the weaving of certain glass fabrics, e.g., for draperies.

Subheading 7019.19

This subheading includes **sliver**. A sliver consists of staple fibres of short lengths, usually less than 380 mm in length. The staple fibres are loosely arranged in parallel fashion into a rope-like strand with little or no twist (less than 5 turns per metre). Sliver is generally used to produce staple fibre yarn, but may also go into the manufacture of wire and cable.

Yarnof this subheading is twisted, and of either continuous filament or staple fibre.

Subheading 7019.31

Matsare flat reinforcing products of glass strands consisting of several hundred parallel filaments distributed in random order.

These threads can be cut (mats of discontinuous strands) or not (mats of continuous thread) and are held together by means of a binder, or the needleloom process.

They retain their shape in the form of parallel filaments, which can be individually separated from the mat by hand without damaging it.

Subheading 7019.32

Thin sheets (voiles) are nonwovens made from individual glass fibres (filaments) distributed in random order. The fibres are held together by means of a binder and pressed and may or may not incorporate reinforcement threads which are most often stretched lengthwise throughout the sheets.

Unlike the glass mats, the individual filaments of these products cannot be removed by hand without damaging the sheet.

Thin sheets can be distinguished from webs, mattresses and other insulation products by their regular thickness which does not exceed 5 mm.