ECLA EUROPEAN CLASSIFICATION

D01F CHEMICAL FEATURES IN THE MANUFACTURE OF ARTIFICIAL FILAMENTS, THREADS, FIBRES, BRISTLES OR RIBBONS; APPARATUS SPECIALLY ADAPTED FOR THE MANUFACTURE OF CARBON FILAMENTS

D01F1/00 General methods for the manufacture of artificial filaments or the like

D01F1/02 . Addition of substances to the spinning solution or to the melt (addition of substances to viscose D01F2/08 to D01F2/20)
D01F1/04 . . Pigments
D01F1/06 . . Dyes
D01F1/07 . . for making fire- or flame-proof filaments
D01F1/08 . . for forming hollow filaments
D01F1/09 . . for making electroconductive or anti-static filaments
D01F1/10 . . Other agents for modifying properties
D01F1/10B . . . [N: Agents inhibiting growth of micro-organisms]
D01F1/10C . . . [N: Radiation shielding agents (e.g. absorbing, reflecting agents)]

D01F2/00 Monocomponent artificial filaments or the like of cellulose or cellulose derivatives; Manufacture thereof

D01F2/02 . from solutions of cellulose in acids, bases or salts
D01F2/04 . . from cuprammonium solutions
D01F2/06 . from viscose (preparation of alkali cellulose C08B)
D01F2/08 . . Composition of the spinning solution or the bath (preparing or dissolving cellulose xanthate C08B)
D01F2/10 . . . Addition to the spinning solution or spinning bath of substances which exert their effect equally well in either
D01F2/12 . . . Addition of delustering agents to the spinning solution
D01F2/14 . . . . Addition of pigments
D01F2/16 . . . Addition of dyes to the spinning solution
D01F2/18 . . . Addition to the spinning solution of substances to influence ripening
D01F2/20 . . . for the manufacture of hollow threads
D01F2/22 . . by the dry spinning process
D01F2/24 . from cellulose derivatives
D01F2/26 . . from nitrocellulose
D01F2/28 . . from organic cellulose esters or ethers, e.g. cellulose acetate
D01F2/30 . . . by the dry spinning process

D01F4/00 Monocomponent artificial filaments or the like of proteins; Manufacture thereof

D01F4/02 . from fibroin

D01F4/04 . from casein

D01F4/06 . from globulins, e.g. groundnut protein

D01F6/00 Monocomponent artificial filaments or the like of synthetic polymers; Manufacture thereof

D01F6/02 . from homopolymers obtained by reactions only involving carbon-to-carbon unsaturated bonds

D01F6/04 . . from polyolefins

D01F6/06 . . . from polypropylene

D01F6/08 . . from polymers of halogenated hydrocarbons

D01F6/10 . . . from polyvinyl chloride or polyvinylidene chloride

D01F6/12 . . . from polymers of fluorinated hydrocarbons

D01F6/14 . . from polymers of unsaturated alcohols, e.g. polyvinyl alcohol, or of their acetals or ketals

D01F6/16 . . from polymers of unsaturated carboxylic acids or unsaturated organic esters, e.g. polyacrylic esters, polyvinyl acetate

D01F6/18 . . from polymers of unsaturated nitriles, e.g. polyacrylonitrile, polyvinylidene cyanide

D01F6/20 . . from polymers of cyclic compounds with one carbon-to-carbon double bond in the side chain

D01F6/22 . . . from polystyrene

D01F6/24 . . from polymers of aliphatic compounds with more than one carbon-to-carbon double bond

D01F6/26 . . from other polymers

D01F6/28 . from copolymers obtained by reactions only involving carbon-to-carbon unsaturated bonds

Note
For the purposes of groups D01F6/30 to D01F6/96, the percentage for determining the major constituent is expressed in mole percent.

D01F6/30 . . comprising olefins as the major constituent

D01F6/32 . . comprising halogenated hydrocarbons as the major constituent

D01F6/34 . . comprising unsaturated alcohols, acetals or ketals as the major constituent

D01F6/36 . . comprising unsaturated carboxylic acids or unsaturated organic esters as the major constituent

D01F6/38 . . comprising unsaturated nitriles as the major constituent

D01F6/40 . . Modacrylic fibres, i.e. containing 35 to 85% acrylonitrile

D01F6/42 . . comprising cyclic compounds containing one carbon-to-carbon double bond in the side chain as major constituent

D01F6/44 . from mixtures of polymers obtained by reactions only involving carbon-to-carbon unsaturated bonds as major constituent with other polymers or low-molecular-weight compounds

D01F6/46 . . of polyolefins

D01F6/48 . . of polymers of halogenated hydrocarbons
D01F6/50 . . of polyalcohols, polyacetals or polyketals
D01F6/52 . . of polymers of unsaturated carboxylic acids or unsaturated esters
D01F6/54 . . of polymers of unsaturated nitriles
D01F6/56 . . of polymers of cyclic compounds with one carbon-to-carbon double bond in the side chain

D01F6/58 . from homopolycondensation products
D01F6/60 . . from polyamides (from polyamino acids or polypeptides D01F6/68)
D01F6/60B . . . [N: from aromatic polyamides]
D01F6/62 . . from polyesters
D01F6/62B . . . [N: derived from hydroxy-carboxylic acids, e.g. lactones]
D01F6/64 . . . from polycarbonates
D01F6/66 . . from polyethers
D01F6/66B . . . [N: from polyetherketones, e.g. PEEK]
D01F6/68 . . from polyaminoacids or polypeptides
D01F6/70 . . from polyurethanes
D01F6/72 . . from polyureas
D01F6/74 . . from polycondensates of cyclic compounds, e.g. polyimides, polybenzimidazoles
D01F6/76 . . from other polycondensation products
D01F6/76B . . . [N: from polyarylene sulfides]

D01F6/78 . from copolycondensation products
D01F6/80 . . from copolyamides
D01F6/80B . . . [N: from aromatic copolyamides]
D01F6/82 . . from polyester amides or polyether amides
D01F6/84 . . from copolyesters
D01F6/86 . . from polyetheresters

D01F6/88 . from mixtures of polycondensation products as major constituent with other polymers or low-molecular-weight compounds
D01F6/90 . . of polyamides
D01F6/90B . . . [N: of aromatic polyamides]
D01F6/92 . . of polyesters
D01F6/94 . . of other polycondensation products

D01F6/96 . from other synthetic polymers

D01F8/00 Conjugated, i.e. bi- or multi-component, artificial filaments or the like; Manufacture thereof

D01F8/02 . from cellulose, cellulose derivatives, or proteins

D01F8/04 . from synthetic polymers
D01F8/06 . . with at least one polyolefin as constituent

D01F8/08 . . with at least one polyacrylonitrile as constituent

D01F8/10 . . with at least one other macromolecular compound obtained by reactions only involving carbon-to-carbon unsaturated bonds as constituent

D01F8/12 . . with at least one polyamide as constituent

D01F8/14 . . with at least one polyester as constituent

D01F8/16 . . with at least one other macromolecular compound obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds as constituent

D01F8/18 . from other substances

D01F9/00 Artificial filaments or the like of other substances; Manufacture thereof; Apparatus specially adapted for the manufacture of carbon filaments

D01F9/02 . of reaction products of rubber with acids or acid anhydrides, e.g. sulfur dioxide

D01F9/04 . of alginates

D01F9/08 . of inorganic material (from softened glass, minerals or slags C03B37/00; [N: obtaining ceramic fibres C04B35/622F]; incandescent bodies F21H, H01K1/02, H01K3/02) [C0009]

D01F9/10 . . by decomposition of organic substances (D01F9/12 takes precedence)

D01F9/12 . . Carbon filaments; Apparatus specially adapted for the manufacture thereof [N: (with fullerene structure, e.g. carbon nanotubes C01B31/02B)] [C0103]

D01F9/127 . . . by thermal decomposition of hydrocarbon gases or vapours [N: or other carbon-containing compounds in the form of gas or vapour, e.g. carbon monoxide, alcohols] [C1102]

D01F9/127B . . . . [N: Alkanes or cycloalkanes]

D01F9/127B2 . . . . . [N: Methane]

D01F9/127D . . . . [N: Alkenes, alkynes]

D01F9/127D2 . . . . . [N: Butadiene]

D01F9/127D4 . . . . . [N: Acetylene]

D01F9/127F . . . . [N: Aromatics, e.g. toluene]

D01F9/127H . . . . [N: Other organic compounds]

D01F9/127L . . . . [N: Carbon monoxide]

D01F9/133 . . . . Apparatus therefor

D01F9/14 . . . by decomposition of organic filaments

D01F9/145 . . . . from pitch or distillation residues

D01F9/15 . . . . . from coal pitch

D01F9/155 . . . . . from petroleum pitch

D01F9/16 . . . . from products of vegetable origin or derivatives thereof, e.g. from cellulose acetate (D01F9/18 takes precedence)

D01F9/17 . . . . . from lignin

D01F9/18 . . . . from proteins, e.g. from wool

D01F9/20 . . . . from polyaddition, polycondensation or polymerisation products (D01F9/145, D01F9/16, D01F9/18 take precedence)

D01F9/21 . . . . . from macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds

D01F9/22 . . . . . from polyacrylonitriles

D01F9/22B . . . . . {7 dots} [N: from stabilised polyacrylonitriles]

D01F9/24 . . . . . from macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds

D01F9/24B . . . . . [N: from polyurethanes]

D01F9/26 . . . . . from polyesters

D01F9/28 . . . . . from polyamides

D01F9/30 . . . . . {7 dots} from aromatic polyamides

D01F9/32 . . . . Apparatus therefor

D01F9/32B . . . . . [N: for manufacturing filaments from pitch]

D01F9/32C . . . . . [N: for manufacturing filaments from products of vegetable origin]

D01F9/32D . . . . . [N: for manufacturing filaments from proteins]

D01F9/32E . . . . . [N: for manufacturing filaments from polyaddition, polycondensation, or polymerisation products]

D01F11/00 **Chemical after-treatment of artificial filaments or the like during manufacture** ([N: of artificial filaments from softened glass, minerals or slags C03C; from ceramics C04B]; finishing D06M)

D01F11/02 . of cellulose, cellulose derivatives, or proteins

D01F11/04 . of synthetic polymers

D01F11/06 . . of macromolecular compounds obtained by reactions only involving carbon-to-carbon unsaturated bonds

D01F11/08 . . of macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds

D01F11/10 . of carbon

D01F11/12 . . with inorganic substances [N: Intercalation]

D01F11/12B . . . [N: Halogen, halogenic acids or their salts]

D01F11/12C . . . [N: Oxygen, oxygen-generating compounds (anode oxidising D01F11/16)]

D01F11/12D . . . [N: Oxides]

D01F11/12E . . . [N: Boron, borides, boron nitrides]

D01F11/12F . . . [N: Carbon]

D01F11/12G . . . [N: Carbides (boron-comprising compounds D01F11/12E; nitrogen carbide D01F11/12J)]

D01F11/12H . . . [N: Metals (metal depositing by electrolysis D01F11/16; metal alloys with reinforcing carbon fibres C22C49/14)] [C0210]

D01F11/12J . . . [N: Nitrides, nitrogen carbides (nitrogen borides D01F11/12E)]

D01F11/12K . . . [N: Intercalated carbon- or graphite fibres] [C9501]

D01F11/14 . . with organic compounds, e.g. macromolecular compounds [C9501]

D01F11/16 . . by physicochemical methods

D01F13/00 **Recovery of starting material, waste material or solvents during the manufacture of artificial filaments or the like**

D01F13/02 . of cellulose, cellulose derivatives or proteins [N: (recovery of sodium sulfate from coagulation baths C01D5/00F)]

D01F13/04 . of synthetic polymers