

CPC**COOPERATIVE PATENT CLASSIFICATION****C08L****COMPOSITIONS OF MACROMOLECULAR COMPOUNDS**

(pesticides, herbicides [A01N](#); pharmaceuticals, cosmetics [A61K](#); explosives [C06B](#); compositions based on polymerisable monomers [C08F](#), [C08G](#); paints, inks, varnishes, dyes, polishes, adhesives [C09](#); lubricants [C10M](#); detergents [C11D](#); artificial filaments or fibres [D01F](#); textile treating compositions [D06](#))

NOTE

1. Compositions classified in [C08K](#) according to note 3 of [C08K](#), are not classified in [C08L](#).
2. Documents classified before 09.2003: Classification is given in the form of C-Sets. The polymer in majority is given a [C08L](#) symbol, and the minor components are characterised by Indexing Codes taken from the list below. The Indexing Codes are linked. The polymer in majority is always first in the C-set. List of [C08L](#) codes: [C08L 23/00](#) , [C08L 23/26](#) , [C08L 25/00](#) , [C08L 27/00](#) , [C08L 27/04](#) , [C08L 27/12](#) , [C08L 29/00](#) , [C08L 31/00](#) , [C08L 33/00](#) , [C08L 35/00](#) , [C08L 37/00](#) , [C08L 51/00](#) , [C08L 53/00](#) , [C08L 55/02](#) , [C08L 61/04](#) , [C08L 61/20](#) , [C08L 63/00](#) , [C08L 67/00](#) , [C08L 67/02](#) , [C08L 67/025](#) , [C08L 67/03](#) , [C08L 67/04](#) , [C08L 67/06](#) , [C08L 67/07](#) , [C08L 69/00](#) , [C08L 69/005](#) , [C08L 71/00](#) , [C08L 75/04](#) , [C08L 77/00](#) , [C08L 77/08](#) , [C08L 77/12](#) , [C08L 79/08](#) , [C08L 79/085](#) , [C08L 81/00](#) , [C08L 83/00](#) , [C08L 85/00](#) , [C08L 91/06](#) , [C08L 95/00](#) or [C08L 2666/00](#) - [C08L 2666/86](#) . Documents from group [C08L 23/00](#) - [C08L 23/36](#) , [C08L 45/00](#) - [C08L 45/02](#) and [C08L 49/00](#) have all been reclassified following Note 3 below. An additive is classified in the last appropriate place in the list as selected for each [C08L](#) group. Examples:
 - a. A composition based on a polyamide and a graft polymer is classified in ([C08L 77/00](#) , [C08L 2666/24](#)).
 - b. A composition based on polyvinylchloride and containing CaCO₃ is classified according to note 4 of [C08K](#), i.e. in ([C08K 3/26](#) , [C08L 27/06](#)). If this composition contains also a polyamide, then the classification will be ([C08L 27/06](#) , [C08L 77/00](#) , [C08K 3/26](#)).
 - c. A composition based on a polysiloxane ([C08L 83/04](#)) and containing a second polysiloxane, a phenol and silica is classified in ([C08L 83/04](#) , [C08L 83/04](#) , [C08L 2666/34](#) , [C08L 2666/58](#)).
3. From 01.09.2003 until April 2012: Classification is given in the form of C-Sets. The polymer in majority is given a [C08L](#) class, and the minor components are characterised by Indexing Codes taken from [C08L](#) or [C08K](#) and they are linked or unlinked. The polymer in majority is always first in the C-Set. List of [C08L](#) codes in the C-Set: [C08L 1/00](#) , [C08L 81/00](#) , [C08L 83/00](#) , [C08L 91/06](#) , [C08L 95/00](#) or [C08L 2666/02](#) - [C08L 2666/08](#) , [C08L 2666/14](#) - [C08L 2666/26](#) . Examples:
 - a. A blend of 60 parts polyvinylchloride ([C08L 27/06](#)) and 40 parts polyamide is classified in ([C08L 27/06](#) , [C08L 2666/20](#)) and [C08L 77/00](#) .
 - b. A blend of 50 parts polyvinylchloride ([C08L 27/06](#)) and 50 parts polyamide ([C08L 77/00](#)) is classified in ([C08L 27/06](#) , [C08L 2666/20](#)) and [C08L 77/00](#) , as well as in ([C08L 77/00](#) , [C08L 2666/04](#)) and [C08L 27/06](#) .

C08L

(continued)

- c. A composition based on polyvinylchloride and containing CaCO₃ is classified according to [N: Note 4 of [C08K](#), i.e. in ([C08K 3/26](#) , [C08L 27/06](#)). If this composition contains also a polyamide, then the classification will be ([C08L 27/06](#) , [C08L 2666/20](#)) and [C08K 3/26](#) .
 - d. A composition based on a first polysiloxane ([C08L 83/04](#)) and containing a second polysiloxane, a phenol and silica is classified in ([C08L 83/04](#) , [C08L 83/04](#) , [C08K 5/13](#) , [C08K 3/36](#)) and [C08L 2205/02](#) .
- 4. From April 2012 onwards, after the notation [C08L](#), notations concerning the other constituents of the composition may be added, in the form of C-Sets. The further constituent is added with an indexing code. The indexing codes are chosen from [C08L 1/00](#) -[C08L 2555/86](#) or [C08K](#) and they may be linked or unlinked: - [C08L 1/00](#) - [C08L 101/10](#) are linked. - [C08L 2201/00](#) - [C08L 2555/86](#) are unlinked. The polymer in majority is always first in the C-Set. Examples:
 - a. A blend of 60 parts polyvinylchloride ([C08L 27/06](#)) and 40 parts polyamide ([C08L 77/00](#)) is classified in ([C08L 27/06](#) , [C08L 77/00](#)).
 - b. A blend of 50 parts polyvinylchloride ([C08L 27/06](#)) and 50 parts polyamide ([C08L 77/00](#)) is classified in ([C08L 27/06](#) , [C08L 77/00](#)) and ([C08L 77/00](#) , [C08L 27/06](#)).
 - c. A composition based on polyvinylchloride and containing CaCO₃ is classified according to [N: Note 4 of [C08K](#), i.e. in ([C08K 3/26](#) , [C08L 27/06](#)). If this composition contains also a polyamide, then the classification will be ([C08L 27/06](#) , [C08L 77/00](#) , [C08K 3/26](#)).
 - d. A composition based on a first polysiloxane ([C08L 83/04](#)) and containing a second polysiloxane, a phenol and silica is classified in ([C08L 83/04](#) , [C08L 83/00](#) , [C08K 5/13](#) , [C08K 3/36](#)) and [C08L 2205/02](#) .
 - e. A composition containing a polyamide in majority, a polyester and a polyethylene is classified in ([C08L 77/00](#) , [C08L 67/00](#) , [C08L 23/06](#)) and [C08L 2205/03](#) .
- 5. "Rubber" includes:
 - natural or conjugated diene rubbers;
 - rubber in general (for a specific rubber, other than a natural rubber or a conjugated diene rubber, see the group provided for compositions of such macromolecular compounds).
- 6. In this subclass:
 - a. compositions are classified according to the mutual proportions by weight of only the macromolecular constituents;
 - b. compositions are classified according to the macromolecular constituent or constituents present in the highest proportion: if all these constituents are present in equal proportions the composition is classified according to each of these constituents.

Compositions of polysaccharides or of their derivatives**C08L 1/00****Compositions of cellulose, modified cellulose or cellulose derivatives**

C08L 1/02

. Cellulose; Modified cellulose

C08L 1/04

.. {Oxycellulose; Hydrocellulose, e.g. microcrystalline cellulose}

C08L 1/06	.. Cellulose hydrate
C08L 1/08	. Cellulose derivatives
C08L 1/10	.. {Esters of organic acids, i.e. acylates}
C08L 1/12	... Cellulose acetate
C08L 1/14	... Mixed esters, e.g. cellulose acetate-butyrate
C08L 1/16	.. Esters of inorganic acids
C08L 1/18	... {Cellulose nitrate, i.e. nitrocellulose}
C08L 1/20	.. Esters of both organic acids and inorganic acids
C08L 1/22	.. Cellulose xanthate
C08L 1/24	... Viscose
C08L 1/26	.. Cellulose ethers
C08L 1/28	... Alkyl ethers
C08L 1/282	.... {with halogen-substituted hydrocarbon radicals}
C08L 1/284	.... {with hydroxylated hydrocarbon radicals}
C08L 1/286	.... {substituted with acid radicals, e.g. carboxymethyl cellulose [CMC] (C08L 1/282 takes precedence)}
C08L 1/288	.... {substituted with nitrogen-containing radicals}
C08L 1/30	... Aryl ethers; Aralkyl ethers
C08L 1/32	.. Cellulose ether-esters

C08L 3/00 **Compositions of starch, amylose or amylopectin or of their derivatives or degradation products**

C08L 3/02	. Starch; Degradation products thereof, e.g. dextrin
C08L 3/04	. {Starch derivatives, e.g. crosslinked derivatives}
C08L 3/06	.. Esters
C08L 3/08	.. Ethers
C08L 3/10	.. Oxidised starch
C08L 3/12	. Amylose; Amylopectin; Degradation products thereof
C08L 3/14	. Amylose derivatives; Amylopectin derivatives
C08L 3/16	.. Esters
C08L 3/18	.. Ethers
C08L 3/20	.. Oxidised amylose; Oxidised amylopectin

C08L 5/00 **Compositions of polysaccharides or of their derivatives not provided for in groups C08L 1/00 or C08L 3/00**

C08L 5/02	. Dextran; Derivatives thereof
C08L 5/04	. Alginic acid; Derivatives thereof
C08L 5/06	. Pectin; Derivatives thereof
C08L 5/08	. Chitin; Chondroitin sulfate; Hyaluronic acid; Derivatives thereof
C08L 5/10	. Heparin; Derivatives thereof
C08L 5/12	. {Agar or agar-agar, i.e. mixture of agarose and agarpectin; Derivatives thereof}
C08L 5/14	. Hemicellulose; Derivatives thereof

[C08L 5/16](#) . Cyclodextrin; Derivatives thereof

Compositions of rubber or of their derivatives

C08L 7/00 Compositions of natural rubber

[C08L 7/02](#) . Latex

C08L 9/00 Compositions of homopolymers or copolymers of conjugated diene hydrocarbons

[C08L 9/02](#) . Copolymers with acrylonitrile

[C08L 9/04](#) . . Latex

[C08L 9/06](#) . Copolymers with styrene

[C08L 9/08](#) . . Latex

[C08L 9/10](#) . Latex ([C08L 9/04](#) , [C08L 9/08](#) take precedence)

C08L 11/00 Compositions of homopolymers or copolymers of chloroprene

[C08L 11/02](#) . Latex

C08L 13/00 Compositions of rubbers containing carboxyl groups

[C08L 13/02](#) . Latex

C08L 15/00 Compositions of rubber derivatives ([C08L 11/00](#) , [C08L 13/00](#) take precedence)

[C08L 15/005](#) . {Hydrogenated nitrile rubber}

[C08L 15/02](#) . Rubber derivatives containing halogen

C08L 17/00 Compositions of reclaimed rubber

C08L 19/00 Compositions of rubbers not provided for in groups [C08L 7/00](#) to [C08L 17/00](#)

[C08L 19/003](#) . {Precrosslinked rubber; Scrap rubber; Used vulcanised rubber}

[C08L 19/006](#) . {Rubber characterised by functional groups, e.g. telechelic diene polymers}

[C08L 19/02](#) . Latex

C08L 21/00 Compositions of unspecified rubbers

[C08L 21/02](#) . Latex

Compositions of macromolecular compounds obtained by reactions involving only carbon-to-carbon unsaturated bonds

NOTE

Groups [C08L 23/00](#) to [C08L 49/00](#) are to be interpreted in accordance with Notes 2), 3) and 4 a) following the title of subclass [C08F](#)]

C08L 23/00	Compositions of homopolymers or copolymers of unsaturated aliphatic hydrocarbons having only one carbon-to-carbon double bond; Compositions of derivatives of such polymers
C08L 23/02	. not modified by chemical after-treatment
C08L 23/025	.. {Copolymer of an unspecified olefin with a monomer other than an olefin}
C08L 23/04	.. Homopolymers or copolymers of ethene
C08L 23/06	... Polyethene
C08L 23/08	... Copolymers of ethene (C08L 23/16 takes precedence)
C08L 23/0807	.... {Copolymers of ethene with unsaturated hydrocarbons only containing more than three carbon atoms}
C08L 23/0815	..... {Copolymers of ethene with aliphatic 1-olefins}
C08L 23/0823	..... {Copolymers of ethene with aliphatic cyclic olefins}
C08L 23/083	..... {Copolymers of ethene with aliphatic polyenes, i.e. containing more than one unsaturated bond}
C08L 23/0838	..... {Copolymers of ethene with aromatic monomers}
C08L 23/0846	.... {Copolymers of ethene with unsaturated hydrocarbons containing other atoms than carbon or hydrogen atoms}
C08L 23/0853	..... {Vinylacetate}
C08L 23/0861	..... {Saponified vinylacetate}
C08L 23/0869	..... {Acids or derivatives thereof}
C08L 23/0876	..... {Neutralised polymers, i.e. ionomers}
C08L 23/0884	..... {Epoxide containing esters}
C08L 23/0892	..... {containing monomers with other atoms than carbon, hydrogen or oxygen atoms}
C08L 23/10	.. Homopolymers or copolymers of propene
C08L 23/12	... Polypropene
C08L 23/14	... Copolymers of propene (C08L 23/16 takes precedence)
C08L 23/142	.... {at least partially crystalline copolymers of propene with other olefins}
C08L 23/145	.... {Copolymers of propene with monomers having more than one C=C double bond}
C08L 23/147	.... {Copolymers of propene with monomers containing other atoms than carbon or hydrogen atoms}
C08L 23/16	.. {Elastomeric} ethene-propene or ethene-propene-diene copolymers, {e.g. EPR and EPDM rubbers}
<u>NOTE</u>	
This group is used for polymers comprising both ethylene and propylene	
C08L 23/18	.. Homopolymers or copolymers of hydrocarbons having four or more carbon atoms
C08L 23/20	... having four to nine carbon atoms

- C08L 23/22 Copolymers of isobutene; Butyl rubber {; Homo- or copolymers of other iso-olefins}
- C08L 23/24 having ten or more carbon atoms
- C08L 23/26 modified by chemical after-treatment
- C08L 23/28 by reaction with halogens or compounds containing halogen (C08L 23/32 takes precedence)
- C08L 23/283 {Halogenated homo- or copolymers of iso-olefins}
- C08L 23/286 {Chlorinated polyethylene}
- C08L 23/30 by oxidation
- C08L 23/32 by reaction with compounds containing phosphorus or sulfur
- C08L 23/34 by chlorosulfonation
- C08L 23/36 by reaction with compounds containing nitrogen, e.g. by nitration
- C08L 2023/40 {by reaction with compounds changing molecular weight}
- C08L 2023/42 {Depolymerisation, vis-breaking or degradation}
- C08L 2023/44 {Coupling; Molecular weight increase}

C08L 25/00 **Compositions of, homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by an aromatic carbocyclic ring; Compositions of derivatives of such polymers**

- C08L 25/02 Homopolymers or copolymers of hydrocarbons
- C08L 25/04 Homopolymers or copolymers of styrene
- C08L 25/06 Polystyrene
- C08L 25/08 Copolymers of styrene (C08L 29/08 , C08L 35/06 , C08L 55/02 take precedence)
- C08L 25/10 with conjugated dienes
- C08L 25/12 with unsaturated nitriles
- C08L 25/14 with unsaturated esters
- C08L 25/16 Homopolymers or copolymers of alkyl-substituted styrenes
- C08L 25/18 Homopolymers or copolymers of aromatic monomers containing elements other than carbon and hydrogen

C08L 27/00 **Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a halogen; Compositions of derivatives of such polymers**

- C08L 27/02 not modified by chemical after-treatment
- C08L 27/04 containing chlorine atoms
- C08L 27/06 Homopolymers or copolymers of vinyl chloride
- C08L 27/08 Homopolymers or copolymers of vinylidene chloride
- C08L 27/10 containing bromine or iodine atoms
- C08L 27/12 containing fluorine atoms
- C08L 27/14 Homopolymers or copolymers of vinyl fluoride
- C08L 27/16 Homopolymers or copolymers or vinylidene fluoride

- C08L 27/18 . . . Homopolymers or copolymers or tetrafluoroethene
- C08L 27/20 . . . Homopolymers or copolymers of hexafluoropropene
- C08L 27/22 . modified by chemical after-treatment
- C08L 27/24 . . halogenated

- C08L 29/00** **Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by an alcohol, ether, aldehydo, ketonic, acetal or ketal radical; Compositions of hydrolysed polymers of esters of unsaturated alcohols with saturated carboxylic acids; Compositions of derivatives of such polymers**
 - C08L 29/02 . Homopolymers or copolymers of unsaturated alcohols ([C08L 29/14 takes precedence](#))
 - C08L 29/04 . . Polyvinyl alcohol; Partially hydrolysed homopolymers or copolymers of esters of unsaturated alcohols with saturated carboxylic acids
 - C08L 29/06 . . Copolymers of allyl alcohol
 - C08L 29/08 . . . with vinyl-aromatic monomers
 - C08L 29/10 . Homopolymers or copolymers of unsaturated ethers ([C08L 35/08 takes precedence](#))
 - C08L 29/12 . Homopolymers or copolymers of unsaturated ketones
 - C08L 29/14 . Homopolymers or copolymers of acetals or ketals obtained by polymerisation of unsaturated acetals or ketals or by after-treatment of polymers of unsaturated alcohols

- C08L 31/00** **Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by an acyloxy radical of a saturated carboxylic acid, of carbonic acid or of a haloformic acid (of hydrolysed polymers [C08L 29/00](#)); Compositions of derivatives of such polymers**
 - C08L 31/02 . Homopolymers or copolymers of esters of monocarboxylic acids
 - C08L 31/04 . . Homopolymers or copolymers of vinyl acetate
 - C08L 31/06 . Homopolymers or copolymers of esters of polycarboxylic acids
 - C08L 31/08 . . of phthalic acid

- C08L 33/00** **Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and only one being terminated by only one carboxyl radical, or of salts, anhydrides, esters, amides, imides or nitriles thereof; Compositions of derivatives of such polymers**
 - C08L 33/02 . Homopolymers or copolymers of acids; Metal or ammonium salts thereof
 - C08L 33/04 . Homopolymers or copolymers of esters {([C08L 43/04 takes precedence](#))}
 - C08L 33/06 . . of esters containing only carbon, hydrogen and oxygen, which oxygen atoms are present only as part of the carboxyl radical
 - C08L 33/062 . . . {Copolymers with monomers not covered by [C08L 33/06](#)}
 - C08L 33/064 {containing anhydride, COOH or COOM groups, with M being metal or onium-cation}
 - C08L 33/066 {containing -OH groups}
 - C08L 33/068 {containing glycidyl groups}

- C08L 33/08 . . . Homopolymers or copolymers of acrylic acid esters
- C08L 33/10 . . . Homopolymers or copolymers of methacrylic acid esters
- C08L 33/12 Homopolymers or copolymers of methyl methacrylate
- C08L 33/14 . . of esters containing halogen, nitrogen, sulfur, or oxygen atoms in addition to the carboxy oxygen
- C08L 33/16 . . . Homopolymers or copolymers of esters containing halogen atoms
- C08L 33/18 . Homopolymers or copolymers of nitriles
- C08L 33/20 . . Homopolymers or copolymers of acrylonitrile ([C08L 55/02](#) takes precedence)
- C08L 33/22 . . Homopolymers or copolymers of nitriles containing four or more carbon atoms
- C08L 33/24 . Homopolymers or copolymers of amides or imides
- C08L 33/26 . . Homopolymers or copolymers of acrylamide or methacrylamide

- C08L 35/00** **Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a carboxyl radical, and containing at least one other carboxyl radical in the molecule, or of salts, anhydrides, esters, amides, imides or nitriles thereof; Compositions of derivatives of such polymers**
- C08L 35/02 . Homopolymers or copolymers of esters ([C08L 35/06](#) , [C08L 35/08](#) take precedence)
- C08L 35/04 . Homopolymers or copolymers of nitriles ([C08L 35/06](#) , [C08L 35/08](#) take precedence)
- C08L 35/06 . Copolymers with vinyl aromatic monomers
- C08L 35/08 . Copolymers with vinyl ethers

- C08L 37/00** **Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a heterocyclic ring containing oxygen (of cyclic esters of polyfunctional acids [C08L 31/00](#) ; of cyclic anhydrides of unsaturated acids [C08L 35/00](#)); Compositions of derivatives of such polymers**

- C08L 39/00** **Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a single or double bond to nitrogen or by a heterocyclic ring containing nitrogen; Compositions of derivatives of such polymers**
- C08L 39/02 . Homopolymers or copolymers of vinylamine
- C08L 39/04 . Homopolymers or copolymers of monomers containing heterocyclic rings having nitrogen as ring member
- C08L 39/06 . . Homopolymers or copolymers of N-vinyl-pyrrolidones
- C08L 39/08 . . Homopolymers or copolymers of vinyl-pyridine

- C08L 41/00** **Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and at least one being terminated by a bond to sulfur or by a heterocyclic ring containing sulfur; Compositions of derivatives of such polymers**

C08L 43/00	Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and containing boron, silicon, phosphorus, selenium, tellurium or a metal; Compositions of derivatives of such polymers (of metal salts, e.g. phenolates, alcoholates, see the parent compounds)
C08L 43/02	. Homopolymers or copolymers of monomers containing phosphorus
C08L 43/04	. Homopolymers or copolymers of monomers containing silicon
C08L 45/00	Compositions of homopolymers or copolymers of compounds having no unsaturated aliphatic radicals in side chain, and having one or more carbon-to-carbon double bonds in a carbocyclic or in a heterocyclic ring system; Compositions of derivatives of such polymers (of cyclic anhydrides or imides C08L 35/00 ; of cyclic esters of polyfunctional acids C08L 31/00)
C08L 45/02	. of coumarone-indene polymers
C08L 47/00	Compositions of homopolymers or copolymers of compounds having one or more unsaturated aliphatic radicals, at least one having two or more carbon-to-carbon double bonds; Compositions of derivatives of such polymers (C08L 45/00 takes precedence; of conjugated diene rubbers C08L 9/00 to C08L 21/00)
C08L 49/00	Compositions of homopolymers or copolymers of compounds having one or more carbon-to-carbon triple bonds; Compositions of derivatives of such polymers
C08L 51/00	Compositions of graft polymers in which the grafted component is obtained by reactions only involving carbon-to-carbon unsaturated bonds (for ABS polymers C08L 55/02); Compositions of derivatives of such polymers
C08L 51/003	. {grafted on to macromolecular compounds obtained by reactions only involving unsaturated carbon-to-carbon bonds (C08L 51/04 , C08L 51/06 take precedence)}
C08L 51/006	. {grafted on to block copolymers containing at least one sequence of polymer obtained by reactions only involving carbon-to-carbon unsaturated bonds}
C08L 51/02	. grafted on to polysaccharides
C08L 51/04	. grafted on to rubbers
C08L 51/06	. grafted on to homopolymers or copolymers of aliphatic hydrocarbons containing only one carbon-to-carbon double bond
C08L 51/08	. grafted on to macromolecular compounds obtained otherwise than by reactions only involving unsaturated carbon-to-carbon bonds
C08L 51/085	. . {on to polysiloxanes}
C08L 51/10	. grafted on to inorganic materials
C08L 53/00	Compositions of block copolymers containing at least one sequence of a polymer obtained by reactions only involving carbon-to-carbon unsaturated bonds; Compositions of derivatives of such polymers
C08L 53/005	. {Modified block copolymers}
C08L 53/02	. of vinyl-aromatic monomers and conjugated dienes
C08L 53/025	. . {modified}

C08L 55/00 **Compositions of homopolymers or copolymers, obtained by polymerisation reactions only involving carbon-to-carbon unsaturated bonds, not provided for in groups [C08L 23/00](#) to [C08L 53/00](#)**

[C08L 55/005](#) . {Homopolymers or copolymers obtained by polymerisation of macromolecular compounds terminated by a carbon-to-carbon double bond}

[C08L 55/02](#) . ABS [Acrylonitrile-Butadiene-Styrene] polymers

[C08L 55/04](#) . Polyadducts obtained by the diene synthesis

C08L 57/00 **Compositions of unspecified polymers obtained by reactions only involving carbon-to-carbon unsaturated bonds**

[C08L 57/02](#) . Copolymers of mineral oil hydrocarbons

[C08L 57/04](#) . Copolymers in which only the monomer in minority is defined

[C08L 57/06](#) . Homopolymers or copolymers containing elements other than carbon and hydrogen

[C08L 57/08](#) . . containing halogen atoms

[C08L 57/10](#) . . containing oxygen atoms

[C08L 57/12](#) . . containing nitrogen atoms

Compositions of macromolecular compounds obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds

C08L 59/00 **Compositions of polyacetals; Compositions of derivatives of polyacetals (of polyvinyl acetals [C08L 29/14](#))**

[C08L 59/02](#) . Polyacetals containing polyoxymethylene sequences only

[C08L 59/04](#) . Copolyoxymethylenes

C08L 61/00 **Compositions of condensation polymers of aldehydes or ketones (with polyalcohols [C08L 59/00](#) ; with polynitriles [C08L 77/00](#)); Compositions of derivatives of such polymers**

[C08L 61/02](#) . Condensation polymers of aldehydes or ketones only

[C08L 61/04](#) . Condensation polymers of aldehydes or ketones with phenols only

[C08L 61/06](#) . . of aldehydes with phenols

[C08L 61/12](#) . . . with polyhydric phenols

[C08L 61/14](#) . . . Modified phenol-aldehyde condensates

[C08L 61/16](#) . . of ketones with phenols

[C08L 61/18](#) . Condensation polymers of aldehydes or ketones with aromatic hydrocarbons or their halogen derivatives only

[C08L 61/20](#) . Condensation polymers of aldehydes or ketones with only compounds containing hydrogen attached to nitrogen (with aminophenols [C08L 61/04](#))

[C08L 61/22](#) . . of aldehydes with acyclic or carbocyclic compounds

[C08L 61/24](#) . . . with urea or thiourea

[C08L 61/26](#) . . of aldehydes with heterocyclic compounds

[C08L 61/28](#) . . . with melamine

[C08L 61/30](#) . . of aldehydes with heterocyclic and acyclic or carbocyclic compounds

- C08L 61/32 . . . Modified amine-aldehyde condensates
- C08L 61/34 . . . Condensation polymers of aldehydes or ketones with monomers covered by at least two of the groups [C08L 61/04](#) , [C08L 61/18](#) and [C08L 61/20](#)

C08L 63/00**Compositions of epoxy resins; Compositions of derivatives of epoxy resins**

- C08L 63/04 . . . Epoxynovolacs
- C08L 63/06 . . . Triglycidylisocyanurates
- C08L 63/08 . . . Epoxidised polymerised polyenes
- C08L 63/10 . . . Epoxy resins modified by unsaturated compounds

NOTE

In groups [C08L 65/00](#) to [C08L 85/00](#) , in the absence of an indication to the contrary, compositions of macromolecular compounds, obtained by reactions forming two different linkages in the main chain, are classified only according to the linkage present in excess

C08L 65/00**Compositions of macromolecular compounds obtained by reactions forming a carbon-to-carbon link in the main chain ([C08L 7/00](#) to [C08L 57/00](#) , [C08L 61/00](#) take precedence); Compositions of derivatives of such polymers**

- C08L 65/02 . . . Polyphenylenes
- C08L 65/04 . . . Polyxylenes

C08L 67/00**Compositions of polyesters obtained by reactions forming a carboxylic ester link in the main chain (of polyester-amides [C08L 77/12](#) ; of polyester-imides [C08L 79/08](#)); Compositions of derivatives of such polymers**

- C08L 67/02 . . . Polyesters derived from dicarboxylic acids and dihydroxy compounds ([C08L 67/06](#) takes precedence)
- C08L 67/025 . . . {containing polyether sequences}
- C08L 67/03 . . . the dicarboxylic acids and dihydroxy compounds having the carboxyl- and the hydroxy groups directly linked to aromatic rings
- C08L 67/04 . . . Polyesters derived from hydroxycarboxylic acids, e.g. lactones ([C08L 67/06](#) takes precedence)
- C08L 67/06 . . . Unsaturated polyesters
- C08L 67/07 . . . having terminal carbon-to-carbon unsaturated bonds
- C08L 67/08 . . . Polyesters modified with higher fatty oils or their acids, or with resins or resin acids

C08L 69/00**Compositions of polycarbonates; Compositions of derivatives of polycarbonates**

- C08L 69/005 . . . {Polyester-carbonates}

C08L 71/00**Compositions of polyethers obtained by reactions forming an ether link in the main chain (of polyacetals [C08L 59/00](#) ; of epoxy resins [C08L 63/00](#) ; of polythioether-ethers [C08L 81/02](#) ; of polyether-sulfones [C08L 81/06](#)); Compositions of derivatives of such polymers**

- C08L 71/02 . . . Polyalkylene oxides
- C08L 71/03 . . . Polyepihalohydrins

- C08L 71/08 . Polyethers derived from hydroxy compounds or from their metallic derivatives ([C08L 71/02 takes precedence](#)) {not used}
- C08L 71/10 . . from phenols {not used}
- C08L 71/12 . . . Polyphenylene oxides
- C08L 71/123 {not modified by chemical after-treatment}
- C08L 71/126 {modified by chemical after-treatment}
- C08L 71/14 . . Furfuryl alcohol polymers

- C08L 73/00** **Compositions of macromolecular compounds obtained by reactions forming a linkage containing oxygen or oxygen and carbon in the main chain, not provided for in groups [C08L 59/00](#) to [C08L 71/00](#); Compositions of derivatives of such polymers**
- C08L 73/02 . Polyanhydrides

- C08L 75/00** **Compositions of polyureas or polyurethanes; Compositions of derivatives of such polymers**
- C08L 75/02 . Polyureas
- C08L 75/04 . Polyurethanes
- C08L 75/06 . . from polyesters
- C08L 75/08 . . from polyethers
- C08L 75/10 . . from polyacetals
- C08L 75/12 . . from compounds containing nitrogen and active hydrogen, the nitrogen atom not being part of an isocyanate group
- C08L 75/14 . . Polyurethanes having carbon-to-carbon unsaturated bonds
- C08L 75/16 . . . having terminal carbon-to-carbon unsaturated bonds

- C08L 77/00** **Compositions of polyamides obtained by reactions forming a carboxylic amide link in the main chain (of polyhydrazides [C08L 79/06](#) ; of polyamideimides or polyamide acids [C08L 79/08](#)); Compositions of derivatives of such polymers**
- C08L 77/02 . Polyamides derived from omega-amino carboxylic acids or from lactams thereof ([C08L 77/10 takes precedence](#))
- C08L 77/04 . Polyamides derived from alpha-amino carboxylic acids ([C08L 77/10 takes precedence](#))
- C08L 77/06 . Polyamides derived from polyamines and polycarboxylic acids ([C08L 77/10 takes precedence](#))
- C08L 77/08 . . from polyamines and polymerised unsaturated fatty acids
- C08L 77/10 . Polyamides derived from aromatically bound amino and carboxyl groups of amino-carboxylic acids or of polyamines and polycarboxylic acids
- C08L 77/12 . Polyester-amides

- C08L 79/00** **Compositions of macromolecular compounds obtained by reactions forming in the main chain of the macromolecule a linkage containing nitrogen with or without oxygen or carbon only, not provided for in groups [C08L 61/00](#) to [C08L 77/00](#)**
- C08L 79/02 . Polyamines

- C08L 79/04 . Polycondensates having nitrogen-containing heterocyclic rings in the main chain; Polyhydrazides; Polyamide acids or similar polyimide precursors
- C08L 79/06 . . Polyhydrazides; Polytriazoles; Polyamino-triazoles; Polyoxadiazoles
- C08L 79/08 . . Polyimides; Polyester-imides; Polyamide-imides; Polyamide acids or similar polyimide precursors
- C08L 79/085 . . . {Unsaturated polyimide precursors}

C08L 81/00 **Compositions of macromolecular compounds obtained by reactions forming in the main chain of the macromolecule a linkage containing sulfur with or without nitrogen, oxygen or carbon only; Compositions of polysulfones; Compositions of derivatives of such polymers**

- C08L 81/02 . Polythioethers; Polythioether-ethers
- C08L 81/04 . Polysulfides
- C08L 81/06 . Polysulfones; Polyethersulfones
- C08L 81/08 . Polysulfonates
- C08L 81/10 . Polysulfonamides; Polysulfonimides

C08L 83/00 **Compositions of macromolecular compounds obtained by reactions forming in the main chain of the macromolecule a linkage containing silicon with or without sulfur, nitrogen, oxygen or carbon only; Compositions of derivatives of such polymers**

NOTE

In this main group, from 01.09.2010 onwards, new documents are classified according to the following system. The composition is identified with the C-Set, e.g. (C08L 83/04, C08L 83/04) (for a composition containing two or more siloxanes), while the info

- C08L 83/02 . Polysilicates
- C08L 83/04 . Polysiloxanes
- C08L 83/06 . . containing silicon bound to oxygen-containing groups (C08L 83/12 takes precedence)
- C08L 83/08 . . containing silicon bound to organic groups containing atoms other than carbon, hydrogen and oxygen
- C08L 83/10 . Block- or graft-copolymers containing polysiloxane sequences (obtained by polymerising a compound having a carbon-to-carbon double bond on to a polysiloxane C08L 51/08 , C08L 53/00)
- C08L 83/12 . . containing polyether sequences
- C08L 83/14 . in which at least two but not all the silicon atoms are connected by linkages other than oxygen atoms (C08L 83/10 takes precedence)
- C08L 83/16 . . in which all the silicon atoms are connected by linkages other than oxygen atoms
- C08L 85/00** **Compositions of macromolecular compounds obtained by reactions forming a linkage in the main chain of the macromolecule containing atoms other than silicon, sulfur, nitrogen, oxygen and carbon; Compositions of derivatives of such polymers**
- C08L 85/02 . containing phosphorus

C08L 85/04 . containing boron

C08L 87/00 **Compositions of unspecific macromolecular compounds, obtained otherwise than by polymerisation reactions only involving unsaturated carbon-to-carbon bonds**

C08L 87/005 . {Block or graft polymers not provided for in groups [C08L 1/00](#) to [C08L 85/04](#)}

Compositions of natural macromolecular compounds or of derivatives thereof (of polysaccharides [C08L 1/00](#) to [C08L 5/00](#) ; of natural rubber [C08L 7/00](#))

C08L 89/00 **Compositions of proteins; Compositions of derivatives thereof (foodstuff preparations [A23J 3/00](#))**

C08L 89/005 . {Casein}

C08L 89/02 . Casein-aldehyde condensates

C08L 89/04 . Products derived from waste materials, e.g. horn, hoof or hair

C08L 89/06 . . {derived from leather or skin, e.g. gelatin}

C08L 91/00 **Compositions of oils, fats or waxes; Compositions of derivatives thereof (polishing compositions, ski waxes [C09G](#); soaps, detergent compositions [C11D](#))**

C08L 91/005 . {Drying oils}

C08L 91/02 . Vulcanised oils, e.g. factice

C08L 91/04 . Linoxyn

C08L 91/06 . Waxes

C08L 91/08 . . Mineral waxes

C08L 93/00 **Compositions of natural resins; Compositions of derivatives thereof (polishing compositions [C09G](#))**

C08L 93/02 . Shellac (French polish [C09F](#))

C08L 93/04 . Rosin

C08L 95/00 **Compositions of bituminous materials, e.g. asphalt, tar, pitch**

C08L 95/005 . {Aqueous compositions, e.g. emulsions}

C08L 97/00 **Compositions of lignin-containing materials**

C08L 97/002 . {Peat, lignite, coal (ceramic products based on carbon or carbides [C04B 35/00](#) ; working-up peat [C10F 7/00](#) ; briquettes [C10L 5/00](#))}

C08L 97/005 . {Lignin}

C08L 97/007 . {Cork}

C08L 97/02 . Lignocellulosic material, e.g. wood, straw or bagasse {(manufacture of articles made from lignocellulosic material by dry processes [B27N](#))}

C08L 99/00 **Compositions of natural macromolecular compounds or of derivatives thereof not provided for in groups [C08L 89/00](#) to [C08L 97/00](#)**

C08L 101/00 **Compositions of unspecified macromolecular compounds**

C08L 101/005 . {Dendritic macromolecules}

C08L 101/02	. characterised by the presence of specified groups, {e.g. terminal or pendant functional groups}
C08L 101/025	. . {containing nitrogen atoms}
C08L 101/04	. . containing halogen atoms
C08L 101/06	. . containing oxygen atoms {(C08L 101/025 takes precedence)}
C08L 101/08	. . . Carboxyl groups
C08L 101/10	. . containing hydrolysable silane groups
C08L 101/12	. characterised by physical features, e.g. anisotropy, viscosity or electrical conductivity (liquid crystal materials or compositions C09K 19/00)
C08L 101/14	. . the macromolecular compounds being water soluble or water swellable, e.g. aqueous gels
C08L 101/16	. the macromolecular compounds being biodegradable

C08L 2201/00**Properties**

C08L 2201/02	. Flame or fire retardant/resistant
C08L 2201/04	. Antistatic
C08L 2201/06	. Biodegradable
C08L 2201/08	. Stabilised against heat, light or radiation or oxydation
C08L 2201/10	. Transparent films; Clear coatings; Transparent materials
C08L 2201/12	. Shape memory
C08L 2201/14	. Gas barrier composition
C08L 2201/22	. Halogen free composition
C08L 2201/50	. Aqueous dispersion, e.g. containing polymers with a glass transition temperature (Tg) above 20°C
C08L 2201/52	. Aqueous emulsion or latex, e.g. containing polymers of a glass transition temperature (Tg) below 20°C
C08L 2201/54	. Aqueous solutions or dispersions
C08L 2201/56	. Non-aqueous solutions or dispersions

Properties; Applications; Other features**C08L 2203/00****Applications**

C08L 2203/02	. for biomedical use
C08L 2203/10	. used for bottles
C08L 2203/12	. used for fibers
C08L 2203/14	. used for foams
C08L 2203/16	. used for films
C08L 2203/162	. . sealable films
C08L 2203/18	. used for pipes
C08L 2203/20	. use in electrical or conductive gadgets
C08L 2203/202	. . use in electrical wires or wirecoating
C08L 2203/204	. . use in solar cells

C08L 2203/206	.. use in coating or encapsulating of electronic parts
C08L 2203/30	. used for thermoforming
C08L 2203/40	. used as motor oil additive
C08L 2205/00	Polymer mixtures characterised by other features
C08L 2205/02	. containing two or more polymers of the same C08L -group
C08L 2205/025	.. containing two or more polymers of the same hierarchy C08L , and differing only in parameters such as density, comonomer content, molecular weight, structure
C08L 2205/03	. containing three or more polymers in a blend
C08L 2205/035	.. containing four or more polymers in a blend
C08L 2205/04	. containing interpenetrating networks
C08L 2205/05	. containing polymer components which can react with one another
C08L 2205/06	. having improved processability or containing aids for moulding methods
C08L 2205/08	. containing additives to improve the compatibility between two polymers
C08L 2205/12	. containing additives being liquid crystalline or anisotropic in the melt
C08L 2205/14	. containing polymeric additives characterised by shape
C08L 2205/16	.. Fibres; Fibrils
C08L 2205/18	.. Spheres
C08L 2205/20	... Hollow spheres
C08L 2205/22	. Mixtures comprising a continuous polymer matrix in which are dispersed crosslinked particles of another polymer
C08L 2205/24	. Crystallisation aids
C08L 2205/242	.. Beta spherulite nucleating agents
C08L 2207/00	Properties characterising the ingredient of the composition
C08L 2207/02	. Heterophasic composition
C08L 2207/04	. Thermoplastic elastomer
C08L 2207/06	. Properties of polyethylene
C08L 2207/062	.. HDPE
C08L 2207/064	.. VLDPE
C08L 2207/066	.. LDPE (radical process)
C08L 2207/068	.. Ultra high molecular weight polyethylene
C08L 2207/07	.. Long chain branching
C08L 2207/10	. Peculiar tacticity
C08L 2207/12	.. Syndiotactic polypropylene
C08L 2207/14	.. Amorphous or atactic polypropylene
C08L 2207/20	. Recycled plastic
C08L 2207/22	.. Recycled asphalt
C08L 2207/24	.. recycling of old tyres and caoutchouc and addition of caoutchouc particles
C08L 2207/26	.. recycling of glass in bitumen
C08L 2207/32	. containing low molecular weight liquid component

C08L 2207/322	..	Liquid component is processing oil
C08L 2207/324	..	Liquid component is low molecular weight polymer
C08L 2207/53	.	Core-shell polymer
C08L 2308/00		Chemical blending or stepwise polymerisation process with the same catalyst
C08L 2310/00		Masterbatches
C08L 2312/00		Crosslinking
C08L 2312/02	.	with dienes
C08L 2312/04	.	with phenolic resin
C08L 2312/06	.	by radiation
C08L 2312/08	.	by silane
C08L 2314/00		Polymer mixtures characterised by way of preparation
C08L 2314/02	.	Ziegler natta catalyst
C08L 2314/04	.	Philipps catalyst
C08L 2314/06	.	Metallocene or single site catalysts
C08L 2314/08	.	prepared by late transition metal, i.e. Ni, Pd, Pt, Co, Rh, Ir, Fe, Ru or Os, single site catalyst
C08L 2555/00		Characteristics of bituminous mixtures
C08L 2555/10	.	Design or test methods for bitumen or asphalt mixtures, e.g. series of measures, procedures or tests to obtain a bitumen or asphalt mixture having preset defined properties, general or international test methods, procedures or standards
C08L 2555/20	.	Mixtures of bitumen and aggregate defined by their production temperatures, e.g. production of asphalt for road or pavement applications
C08L 2555/22	..	Asphalt produced above 140°C, e.g. hot melt asphalt
C08L 2555/24	..	Asphalt produced between 100°C and 140°C, e.g. warm mix asphalt
C08L 2555/26	..	Asphalt produced between 65°C and 100°C, e.g. half warm mix asphalt, low energy asphalt produced at 95°C or low temperature asphalt produced at 90°C
C08L 2555/28	..	Asphalt produced between 0°C and below 65°C, e.g. cold mix asphalt produced between 0°C and 35°C
C08L 2555/30	.	Environmental or health characteristics, e.g. energy consumption, recycling or safety issues
C08L 2555/32	..	Environmental burden or human safety, e.g. CO ₂ footprint, fuming or leaching
C08L 2555/34	..	Recycled or waste materials, e.g. reclaimed bitumen, asphalt, roads or pathways, recycled roof coverings or shingles, recycled aggregate, recycled tires, crumb rubber, glass or cullet, fly or fuel ash, or slag
C08L 2555/40	.	Mixtures based upon bitumen or asphalt containing functional additives
C08L 2555/50	..	Inorganic non-macromolecular ingredients
C08L 2555/52	...	Aggregate, e.g. crushed stone, sand, gravel or cement
C08L 2555/54	...	Sulfur or carbon black
C08L 2555/60	..	Organic non-macromolecular ingredients, e.g. oil, fat, wax or natural dye

C08L 2555/62	...	from natural renewable resources
C08L 2555/64	....	Oils, fats or waxes based upon fatty acid esters, e.g. fish oil, olive oil, lard, cocoa butter, bees wax or carnauba wax
C08L 2555/70	...	from natural non-renewable resources
C08L 2555/72	....	Petrochemical based or extracted waxes, e.g. paraffin, Montan wax or cracked polyethylene wax
C08L 2555/74	....	Petrochemicals other than waxes, e.g. synthetic oils, diesel or other fuels, hydrocarbons, halogenated or otherwise functionalized hydrocarbons
C08L 2555/80	..	Macromolecular constituents
C08L 2555/82	...	from natural renewable resources, e.g. starch, cellulose, saw dust, straw, hair or shells
C08L 2555/84	...	Polymers comprising styrene, e.g. , polystyrene, styrene-diene copolymers or styrene-butadiene-styrene copolymers
C08L 2555/86	...	Polymers containing aliphatic hydrocarbons only, e.g. polyethylene, polypropylene or ethylene-propylene-diene copolymers

C08L 2666/00 **Composition of polymers characterized by a further compound in the blend, being organic macromolecular compounds, natural resins, waxes or and bituminous materials, non-macromolecular organic substances, inorganic substances or characterized by their function in the composition (not used)**

NOTE

These codes are not used for the classification of new documents. They are a replacement of the combination classes.

C08L 2666/02	.	Organic macromolecular compounds, natural resins, waxes or and bituminous materials
C08L 2666/04	..	Macromolecular compounds according to groups C08L 7/00 to C08L 49/00 ,or C08L 55/00 to C08L 57/00 ; Derivatives thereof
C08L 2666/06	...	Homopolymers or copolymers of unsaturated hydrocarbons; Derivatives thereof
C08L 2666/08	...	Homopolymers or copolymers according to C08L 7/00 to C08L 21/00 ; Derivatives thereof
C08L 2666/10	..	Homopolymers or copolymers according to C08L 39/00 to C08L 49/00 ; Derivatives thereof
C08L 2666/12	..	Homopolymers or copolymers not provided for in C08L 2666/06 to C08L 2666/10
C08L 2666/14	..	Macromolecular compounds according to C08L 59/00 to C08L 87/00 ; Derivatives thereof
C08L 2666/16	...	Addition or condensation polymers of aldehydes or ketones according to C08L 59/00 to C08L 61/00 ; Derivatives thereof
C08L 2666/18	...	Polyesters or polycarbonates according to C08L 67/00 to C08L 69/00 ; Derivatives thereof
C08L 2666/20	...	Macromolecular compounds having nitrogen in the main chain according to C08L 75/00 to C08L 79/00 ; Derivatives thereof
C08L 2666/22	...	Macromolecular compounds not provided for in C08L 2666/16 to C08L 2666/20
C08L 2666/24	..	Graft or block copolymers according to groups C08L 51/00 , C08L 53/00 or C08L 55/02 ; Derivatives thereof

C08L 2666/26	.. Natural polymers, natural resins or derivatives thereof according to C08L 1/00 to C08L 5/00 , C08L 89/00 , C08L 93/00 , C08L 97/00 or C08L 99/00
C08L 2666/28	. Non-macromolecular organic substances
C08L 2666/30	.. Hydrocarbons
C08L 2666/32	.. Halogen-containing compounds
C08L 2666/34	.. Oxygen-containing compounds, including ammonium and metal salts
C08L 2666/36	.. Nitrogen-containing compounds
C08L 2666/38	.. Sulfur-, selenium- or tellurium-containing compounds
C08L 2666/40	.. Phosphorus-containing compounds
C08L 2666/42	... Compounds containing phosphorus and sulfur
C08L 2666/44	.. Silicon-containing compounds
C08L 2666/46	.. Boron-containing compounds
C08L 2666/48	.. Organo-metallic compounds, i.e. organic compounds containing a metal-to-carbon bond
C08L 2666/50	.. Arsenic- or antimony-containing compounds
C08L 2666/52	.. Metal-containing compounds
C08L 2666/54	. Inorganic substances
C08L 2666/55	.. Carbon
C08L 2666/58	.. SiO ₂ or silicates
C08L 2666/60	... Asbestos
C08L 2666/62	... Clay
C08L 2666/64	.. Sulfur
C08L 2666/66	. Substances characterised by their function in the composition
C08L 2666/68	.. Plasticizers; Solvents
C08L 2666/70	.. Organic dyes or pigments; Optical brightening agents
C08L 2666/72	.. Fillers; Inorganic pigments; Reinforcing additives
C08L 2666/74	... Aggregates
C08L 2666/76	... Textured backings, e.g. woven or non-woven
C08L 2666/78	.. Stabilisers against oxidation, heat, light or ozone
C08L 2666/80	... Metal-containing stabilizers
C08L 2666/82	... Phosphorus-containing stabilizers
C08L 2666/84	.. Flame-proofing or flame-retarding additives
C08L 2666/86	.. Antistatics