

This heading comprises only the following subject matter:

- . polymers derived by opening cyclic ether rings in compounds (monomeric or polymeric) containing more than one such ring per molecule
- . polymers containing more than one cyclic ether ring per molecule
- . polymers obtained by condensing epihalohydrins or dihalohydrins with polyhydroxyl compounds
- . intermediates of indeterminate composition containing on the average more than one cyclic ether ring per molecule, which are precursors for the above polymers
- . processes for producing, purifying and stabilizing the above substances and obtaining them in special physical form
- . processes for the chemical and physical modification of the above products
- . compositions based on the above products
- . compositions based on polymers containing more than one cyclic ether ring per molecule intended for conversion to polymers of the first type above
- . articles made from, and uses of, the above products and compositions, not covered by other headings, *insofar as novelty resides in the choice of material*

NB. From the operative date of Edition B of the Key inventions in polymer additives, whether restricted to the polymers of this heading or of more general application which extends to a polymer of this heading, are to be found in heading C3K, Polymer &c additives
 Additionally, while polymer blends wherein the polymer components consist solely of polymers of this heading or of one or more polymers of this heading and one or more polymers of headings C3H, C3T and/or C3U are subject matter for this heading, all other polymer blends involving one or more polymers of this heading are to be found in heading C3M, Polymer &c blends

Further excluded are:

- . cellular products and their preparation—C3C, Cellular polymeric materials
- . coated, laminate and other composite structures, and processes for making them—*headings for the structures, e.g.* B2E, Coated products; B5N, Laminated products; D1R, Non-woven fibrous materials &c
- . compositions comprising particulate refractory materials for use in making foundry cores and moulds—C3N, Plastic compositions &c
- . constructional details of articles—*headings for the articles*
- . graft polymers obtained by the carbon-to-carbon polymerization of one or more olefinically or acetylenically unsaturated compounds on to an epoxy resin—C3P, Addition polymers &c
- . processes and apparatus for casting and moulding plastic and powdered materials—B5A, Moulding plastic substances &c
- . processes for obtaining polymers containing more than one cyclic ether ring per molecule by preparing or modifying polymers of types specifically covered by other headings (*other than* phenol-aldehyde polycondensates)—*headings for polymer types, eg,* C3P, Addition polymers &c; C3R, Condensation polymers &c; C3T, Organo-silicon polymers
- . processes for the superficial after-treatment of fibres and films—B5B, Making artificial fibres, films &c
- . use of novel pigments in the mass pigmentation of epoxy resins—C4P, Dyes and pigments

The exclusion references listed in this heading are not exhaustive. Reference should be made to the appropriate general heading/s for processes, materials, elements or devices which may be more widely applicable than can appropriately be classified in this heading

Relationship with the Universal Indexing Schedules (heading U1S)

In addition to recording uses and applications of inventions classified in this heading, U1S is used, subject to its indexing rules, to record significant properties of materials with which this heading is concerned

Operative date for Key entries

The operative date of the terms in this heading is earlier than that of Edition A

Classifying, indexing and searching notes

Matter clearly well known or conventional at the time of publication is not classified, ie, is not represented by any of the classifying terms

Disclosure ancillary to the subject matter of the invention, *eg*, composition details in a specification relating to the choice of cross-linking agent, is only classified if it is of interest in its own right. It therefore follows that a search under the relevant classifying term for matter which is suspected of being well known or conventional will not reveal all (or in extreme cases any) of the prior references to such matter. Similarly, having regard to the character of some of the matter that has to be classified, assignment of such matter to classifying terms cannot be wholly certain or consistent

Indexed matter is indexed under all applicable indexing terms. No term is applied unless there is an explicit or clearly implicit disclosure appropriate to the term

Classifying Schedule

- BA polymerisation by means of the epoxide group in polyepoxides
 . reactions of epoxy groups with stoichiometric amounts of material—See term BE *below*
 . catalysts for hardening—See term BH *below*
 epoxy resins characterised by the presence of a novel or unusual epoxy compound or mixture of epoxy compounds—
- BB1 . monoglycidyl compounds
 BB2 . other epoxy compounds
- BC methods of making epoxy monomers and partial polymers (which still contain epoxy groups)
- BD chemical modification of epoxy monomers *other than* by reactions involving the epoxy groups
 cross-linking agents—
- BE1 . polyamines
 BE2 . polycarboxylic acids and anhydrides
 BEX . others
- BF non-cross-linking reactions involving the epoxy groups
- BG epoxy resins characterised solely by the epoxy monomer—cross-linking agent combination
- BH accelerators of cross-linking
- BJ cross-linking procedures
- BK chemical after-treatment of final resin
- BM blends of C3B polymers; blends of one or more C3B polymers with C3T and/or C3U polymers only
 . with C3H polymer(s)—See term BN *below*
 . other polymer blends—See heading C3M, Polymer &c blends
- BN other compositions
- BP methods of working up polymers and polymer compositions
 . *This classifying term includes disclosures relating to the separation of polymers from liquid media and the choice of steps whereby additives are incorporated in polymers*
- BQ articles and applications of epoxy resins whose sole novelty resides in the choice of resin
- BX other subjects

Indexing Schedule

- B1A articles made from
compositions containing as specified non-reactive ingredients—
. *Ingredients are indexed under all appropriate subdivisions*
. *Ingredients defined chemically*
. albumens and lignin-free carbohydrates—
- B1C2A . . celluloses and cellulose derivatives
B1C2X . . unclassified
B1C3 . . asphalts, bitumens, tars, and pitches
B1C4 . . fats, fatty oils, animal and vegetable waxes, and corresponding fatty acids and their salts and esters
. *Metal salts are indexed also under term B1C13M below*
- B1C7 . . gums and natural resins (*other than* rubber, balata, and guttapercha)
. . inorganic compounds and non-metallic elements—
. . carbon—
. . . carbon black
B1C6A1 . . . other forms of carbon
B1C6AX . . . titanium dioxide
B1C6B . . water
B1C16 . . unclassified
B1C6X . . lignin and ligneous materials (*including* cork)
B1C17A . . metals
B1C1 . . mixed synthetic resins (*defined as in the present heading and in headings C3P, C3R, and C3T*)—
- B1C8P . . addition polymers
B1C8R . . condensation polymers
B1C8T . . organo-silicon polymers
B1C8B . . two or more epoxy resins
. . . two or more compounds containing more than one vicinal epoxy group per molecule— *See term B1D6 below*
. organic compounds of known constitution (*other than those above*)—
. . containing in substituent groups—
. . . *Carbon, hydrogen and ring elements are ignored*
- B1C10 . . . halogens
B1C13M . . . metals
B1C11 . . . nitrogen
B1C12 . . . oxygen
B1C13P . . . phosphorus
B1C13S . . . sulphur
B1C13X . . . unclassified elements
. . heterocyclic compounds containing as hetero-element—
. . . nitrogen
B1C9N . . . oxygen
B1C9Q . . . sulphur
B1C9S . . . unclassified elements
B1C9X . . hydrocarbons, unsubstituted—
. . . acyclic
B1C9A . . . cyclic
B1C9B . . rubber, balata, and guttapercha (*including* synthetic rubbers and rubber derivatives)
B1C15 . . water— *See term B1C16 above*
- B1C17X . . unclassified materials
. *Ingredients (including the base polymer) defined physically*
- B1C31 . . gases (*other than* gases solely giving rise to porous products)
B1C32 . . liquids (*other than* solvents and dispersion media)
. materials defined by numerically specified physical properties—
. . of specified dimensions
B1C33A . . of specified molecular weight or viscosity
B1C33B . . unclassified
B1C33X . . solids—
. . of composite structure (*e.g.* coated particles)
. . of specified shape—
- B1C5B1 . . . fibrous
B1C5B2 . . . non-fibrous
. *Ingredients defined functionally*
- B1C19 . . abrasives
. colouring materials—
. . *Unless otherwise specified, dyes are presumed to be organic and pigments inorganic*
- B1C14A . . inorganic
B1C14B . . organic
B1C21 . . dispersing and emulsifying agents

Indexing Schedule—*cont*

- B1C22 . fillers
 B1C23 . fire-retardant agents
 B1C24 . lubricants and mould release agents
 B1C25 . non-aqueous solvents and dispersion media
 B1C18 . optical brightening agents
 B1C26 . pesticides, fungicides, microbicides and other biocides
 B1C27 . plasticizers
 . stabilizers and antioxidants—
 B1C28A . . ultra-violet light absorbers
 B1C28X . . unclassified
 B1C29 . unclassified ingredients of specified function
 compositions described by reference to the preparation, nature, properties or certain applications of, the final
 composition—
 . *Index is made under each appropriate subdivision*
 . *Nature of composition*
 B1L1B . compositions in which the base resin predominates (*i.e.* constitutes at least 50% of total non-volatile
 ingredients)
 . *Physical form*
 B1L2A . emulsion
 B1L2B . paste
 . solid—
 . . film or fibre—*See term B1L6D below*
 B1L2C1 . . particulate (*including* beads, pellets and granules)
 B1L2CX . . unclassified
 B1L2X . unclassified dispersion in liquid media (*including* solution)
 . *Preparation of composition*
 B1L3A . obtained by special methods of blending ingredients
 B1L3B . obtained by special order of blending ingredients
 B1L3C . subjected to irradiation
 . *Properties of the composition as a whole*
 B1L4A . antistatic
 B1L4B . elastomeric
 B1L4C . fire-resistant
 B1L4D . frictional (*including* anti-frictional)
 B1L4E . ion-exchange
 B1L4H . magnetic or magnetizable
 B1L4F . photo-hardening
 B1L4G . thixotropic
 . *Specific numerical values given*
 B1L5A . dimensions
 B1L5B . melting or other transition point
 B1L5C . pH
 B1L5D . viscosity
 B1L5X . of other properties
 . . *Index according to the associated property is also made where appropriate*
 . *Uses of the composition*
 B1L6A . adhesives
 B1L6E . as binders for particulate materials in foundry cores or moulds
 . coating compositions—*See term B1L6G below*
 B1L6B . electrical conductors and insulators
 B1L6C . fertilisers and soil conditioners
 B1L6D . film or fibre forming
 B1L6F . moulding powders
 B1L6G . paints, varnishes, lacquers and other coating compositions
 B1L6H . textile-treating compositions
 compounds (monomeric and polymeric) containing more than one cyclic ether ring per molecule—
 . *Phenoxy resins (high molecular weight polyethers) are indexed as if they were polyepoxides*
 . *Compounds are indexed under all appropriate subdivisions*
 . compounds containing more than one vicinal epoxy group—
 . . compounds containing ethylenic or acetylenic unsaturation
 . . esters (*including* esters of inorganic acids)—
 B1D5 . . . epoxidized glycerol esters of unsaturated monocarboxylic acids.
 B1D1A . . . glycidyl esters (*including* cyanurates)
 B1D1B . . . unclassified
 B1D1X . . . unclassified

Indexing Schedule—cont

- . . ethers (*other than* thioethers)—
- . . . glycidyl ethers of—
- B1D2A alcohols (*including* diglycidyl ether), *other than* phenol-aldehyde polycondensates
- B1D2B phenol-aldehyde polycondensates
- B1D2C phenols, *other than* phenol-aldehyde polycondensates
- B1D2X . . . unclassified
- B1D6 . . mixtures of two or more compounds each containing more than one vicinal epoxy group
- B1D3 . . nitrogen-containing compounds
- . . oxides of hydrocarbons—
- B1D4A . . . butadiene dioxide
- B1D4B . . . vinyl cyclohexene dioxides
- B1D4X . . . unclassified
- B1D7 . . polymers obtained by the carbon-to-carbon polymerization of one or more olefinically or acetylenically unsaturated compounds
- . . thioethers—*See* term B1D10 *below*
- B1D10 . . unclassified
- B1DX . . unclassified
- . . unspecified epoxy resins—*See* term B1D2C *above*
- curing catalysts and reactive modifying agents for compounds containing more than one cyclic ether ring per molecule—
- . *Tautomers are indexed in the reactive form; e.g. aceto-acetic ester would be indexed as an alcohol, an ester, and as a compound containing ethylenic unsaturation*
- . *Two or more stage curing or modifying agents are indexed under the following subdivisions even if the intermediate compound is not a polyepoxide*
- . *Polyepoxides and derivatives thereof (other than secondary curing agents as defined below) are not regarded as curing catalysts and modifying agents and are not indexed under the following subdivisions*
- . *Compounds are indexed under all appropriate subdivisions*
- . macromolecular compounds—
- B1N1F . . aldehyde polycondensates, *including* aldehyde precondensates
- B1N1N . . natural polymers and derivatives thereof
- B1N1G . . polyamides
- B1N1A . . polymers obtained by the carbon-to-carbon polymerization of one or more olefinically or acetylenically unsaturated compounds
- B1N1H . . polysulphides
- B1N1X . . unclassified
- . non-polymeric compounds—
- . . inorganic—
- B1N11 . . . acids
- Friedel-Crafts halides—*See* term B1N10 *below*
- B1N3 . . . alkali metal hydroxides
- . . . compounds containing nitrogen—
- B1N5A ammonia, ammonium hydroxide and salts thereof
- B1N5X other compounds containing nitrogen
- B1N10 . . . Friedel-Crafts halides (*including* complexes thereof)
- *The complexing agent is also indexed as a curing catalyst or reactive modifying agent when appropriate*
- B1N18X . . . unclassified inorganic compounds
- . . organic—
- . . . acids (*including* salts, anhydrides and acid halides thereof)—
- monocarboxylic—
- B1N4B drying oil and resin acids (*including* rosin)
- B1N4C other monocarboxylic acids
- polycarboxylic—
- B1N4F carbocyclic (*including* dimerized and trimerized unsaturated fatty acids, and Diels-Alder adducts)
- *o*-phthalic acid—*See* term B1N4H *below*
- B1N4G halogen-containing
- B1N4H maleic, *o*-phthalic and unspecified polycarboxylic acids
- B1N4A mixtures of polycarboxylic acids
- B1N4J oxalic and unsubstituted alkylene dicarboxylic acids
- cycloalkylene dicarboxylic acids—*See* term B1N4F *above*
- B1N4X unclassified polycarboxylic acids
- B1N12 unclassified organic acids
- phenols. *See* terms B1N16-*below*
- B1N7 . . . compounds containing ethylenic and acetylenic unsaturation

Indexing Schedule—*cont*

- . . . compounds containing one vicinal epoxy group—
- B1N8A epichlorohydrin and ethylene, propylene or styrene oxides
- B1N8B glycidyl ethers
- B1N8X unclassified monoepoxides
- . . . containing metals—
- B1N13C titanium
- B1N13X unclassified
- . . . containing the following specified non-metals and metalloids—
- B1N13A boron
 - Friedel-Crafts halide complexes—*See term B1N10 above*
 - nitrogen—
 - amines, imines, amides, and imides, (*including salts thereof*)—
 - thioamides and salts thereof—*See term B1N6X below*
- B1N6A alkylene and phenylene diamines, polyalkylene polyamines and unspecified organic amines
 - cycloalkylene amines—*See terms B1N6D below*
- B1N6E amides (*including sulphonamides*)
 - urea—*See term B1N6B below*
 - amines and salts thereof *not otherwise provided for*—
 - acyclic
 - carbocyclic
 - heterocyclic
 - monoamines
 - polyamines
 - primary
 - secondary
 - tertiary
 - dicyandiamide, guanamines, guanidine, melamine and urea
 - imines and imides
 - guanidine—*See term B1N6B above*
 - quaternary compounds
- B1N6C cyanides
 - dicyandiamide—*See term B1N6B above*
- B1N6J isocyanates and isothiocyanates
- B1N6X unclassified nitrogen-containing compounds
- B1N14 phosphorus
- B1N13B silicon
 - siloxanes—*See term B1N1X above*
- B1N15 sulphur
 - esters of carboxylic acids—
 - glycerol esters of ethylenically and acetylenically unsaturated monocarboxylic acids
- B1N9A unclassified carboxylic esters
- B1N9X hydroxy compounds—
 - alcohols (*including alcoholates, enols and enolates*)—
 - monohydric
 - polyhydric
 - phenols (*including phenolates*)—
 - monohydric
 - polyhydric
- B1N2A unclassified organic compounds
- B1N2B secondary curing agents, polymeric and non-polymeric (*i.e.* a reaction product of excess primary curing agent with a compound containing more than one vicinal epoxy group per molecule).
- B1N16A granular and pulverulent products
- B1N16B compositions—*See term B1L2C1 above*
- B1N19X physical after-treatment of—
 - polymers and compounds containing more than one cyclic ether ring per molecule
 - polymers derived by opening cyclic ether rings in compounds (monomeric and polymeric) containing more than one such ring per molecule
- B1N17 processes for preparing polymers, or intermediates of indeterminate composition, containing more than one cyclic ether ring per molecule