PALL CORPORATION

Document Number: **E962**

Revision: **BA**

Document Title: **PALL GLOBAL DISALLOWED & CONTROLLED SUBSTANCES**

Document Type: **SUPPLIER DOCUMENTATION**

Effective Date: **21st January 2025**

Pall Corporation ('Pall') wishes to control or limit use of various substances, either in, or in contact with articles and materials used in the manufacture of the products Pall supplies. We therefore request vendors advise Pall if they know of certain substances of interest being present in the item(s) they supply to us.

This document contains the substances of current interest. These lists can change. Therefore, Pall has made available this web site copy of the latest listings. In this way Pall hopes to ensure you are kept informed of our current requirements.

Pall has been specifically requested by suppliers and users to highlight changes made to this web posted document by use of red colored text. To facilitate ease of identification of changes from the previously posted revision.

This web posted document is marked 'uncontrolled' as it is only valid on the day of printing.

A Supplier, by acceptance of a purchase order from a Pall company, acknowledges they have read and understood this latest revision of Pall document number "E962.
The Supplier also undertakes to advise Pall if any of the substances referred in this latest revision of E962 are known to be present in the goods they intend to supply in advance of shipment of those goods to Pall and provide Pall with applicable SCIP registration numbers for articles they place on the market in Europe.

I. Application

This document identifies certain substances that Pall, its business units, and manufacturing sites (herein referred to as Pall) wish to control or prohibit use of in/or in contact with Pall purchased raw materials, raw materials it specifies for use, components, materials, and primary packaging used in the manufacture of products to be supplied to Pall. Thereby enabling Pall to inform its customers and users of the presence of these substances in items supplied by Pall.

II. Scope

A. Pall needs to be aware of use of certain substances in the manufacture of their filtration and separation products, parts, and accessories. The scope of this requirement is all raw materials, purchased components and parts supplied to Pall. In the event the Supplier undertakes a process employing materials specified by Pall, the Supplier shall undertake a review of the requirements of E962 in respect to any substances or mixtures additionally employed in contact with the specified material or additions to that specified material.

B. The Supplier shall certify by completion of a Pall QAO270 form, or provide a written **Declaration of Conformity**, that current and future shipments of the subject component or material meet the requirements of this document, as invoked on the Pall purchase order. This document shall be submitted to the appropriate Pall Manufacturing Site Quality group. In the event of a change to the subject component or material (formulation or manufacturing process) a renewal of this certification / declaration will be required.

C. Where an 'article' is to be supplied to Pall contains a substance of concern to Pall at a concentration of greater than 0.1% w/w, the Supplier provide Pall with the applicable European 'Waste Framework Directive' requirements for a SCIP registration number for the part (if the supplier places the item on the market in Europe).

D. Unless a concession has been previously granted, it is the Suppliers' responsibility "**not to ship**" and to notify Pall if they have current knowledge, indication, or suspicion, that the supplied component or material may contain a Pall **Disallowed substance**(s) (as defined in Table 2) – wherein failure "not to ship" and to notify is in violation of the Pall Purchase Order and this document, however Pall shall reserve the right to grant concessions once they have been notified.

E. It is the Supplier's responsibility to notify Pall if they have current knowledge, indication, or suspicion, that the supplied component or material may contain a Pall **Controlled substance**(s) (as defined in Table 1) wherein failure to notify is in violation of the Pall Purchase Order and this document.

Note: The "**notification of use**" (referred to in paragraphs **II.C**. and **II.D**. above) is limited to Suppliers' in house level of material and process control. This means that "notification of use" is required if the substance is known or suspected by the Supplier to be an ingredient, used in the Suppliers' process, or comes in contact" (including by accidental exposure) with the Pall purchased component.

III. Requirements

A. Pall purchased packaging materials - includes bags, boxes, labels and inserts – require compliance to:

- **CONEG (USA Coalition of North Eastern Governors)**: Toxics in Packaging
- **EU directive 94/62/EC** and amendments on packaging and packaging waste.
- EU requirements for registration, evaluation & authorization of chemicals **EU Regulation 1907/2006** (REACH) and its amendments, in respect of any substance listed an SVHC shall be below 0.1% of the material or article supplied unless otherwise specified in Annex XVII of the requirements.
- EU requirement for Restriction of Hazardous Substances in Electronic and Electrical Equipment **EU directive 2011/65/EU** (ROHS2) and its amendments (ROHS3).
- European Commission **Regulation 2019/1021** (POPs) and its amendments, in respect of Persistent Organic Pollutants, including delegated regulation 2020/784 giving a limit of 25ppb for PFOA and its salts, and 1000ppb for PFOA-related compounds.
- European Commission **Directive 2008/98/EC** 'Waste Framework Directive' in respect registration in the ECHA database for articles subject to Substances of Concern in Products (SCIP).

If any of the above requirements are not met, the Supplier must notify the Pall immediately in writing defining the substance and any other available information relative to concentration present.

B. All plastic resins purchased directly by Pall require compliance to:

- **EU requirements for registration, evaluation & authorization of chemicals** EU Regulation 2006/1907 **(REACH) and its amendments in respect of any substance listed an SVHC shall be below 0.1% of the material or article supplied** unless otherwise specified in Annex XVII of the requirements.
- EU requirement for Restriction of Hazardous Substances in Electronic and Electrical Equipment **EU directive 2011/65/EU** (ROHS2) and amendment **2015/863** (ROHS3), in respect of prescribed metals levels and other substances specified in ROHS2 / ROHS3 shall be below the required levels.

Using generally available industrial test methods and/or equipment, residues of metal catalysts from processes used by the Supplier, i.e. in relation to polymerization process, shall be "below detectable limits".

If any of the above requirements are not met, the Supplier must notify the Pall immediately in writing defining the substance and any other available information relative to concentration present.

C. **Animal derived materials** – all components or materials purchased by Pall:

The Supplier is responsible for consulting with their material suppliers to determine if and how animal derived materials are used in the material / article to be supplied to Pall. If the presence of direct materials of animal origin, or animal derived materials, are confirmed the Supplier must notify the Pall Corporation ordering facility in writing. The Supplier must also advise Pall of: animal source (bovine / ovine / caprine / poultry / porcine etc.), how the animal derived material is used, how it is processed to minimize the risk of transmission of TSE (transmissible spongiform encephalopathy) / BSE (bovine spongiform encephalopathy) such as identified by the **U.S. Code of Federal Regulations**, Title 9 of part 94.18, which sets forth restrictions on the source of products and the CPMP's Note or guidance (**EMEA/410/01**), quantity present (volume %) and its source (animal type, part of the animal and country of origin).

D. **Controlled Substances** – applicable to all materials provided by the supplier:

If any of the Pall Controlled substances (See Table 1) are known or suspected to be present in the article / materials supplied, are used in the Suppliers' processes, and/or come in contact with during the manufacture of Pall purchased component or material, the Supplier must notify the Pall, in writing defining the substance and any other available information relative to concentration and how the substance is used.

E. **Disallowed Substances** – applicable to all materials provided by the supplier:

If any of the Pall Disallowed substances (See Table 2) are known or suspected to be present in the article / materials supplied, are used in the Suppliers' processes, and/or come in contact with during the manufacture and subsequent handling of Pall purchased component or material, the Supplier must not ship the material or component unless a concession has been previously granted. Supplier must notify the Pall immediately in writing defining the substance and any other available information relative to concentration and how the substance is used.

F. **Conflict Minerals** – applicable to all materials provided by the supplier

The United States has enacted the **Dodd-Frank Wall Street Reform and Consumer Protection Act** ('The Act) which imposes certain additional reporting and due diligence requirements on US companies related to 'Conflict Minerals' - particular minerals of concern when originating from the Democratic Republic of Congo, Angola, Burundi, the Central African Republic, Congo, Rwanda, Sudan, Uganda, the United Republic of Tanzania or Zambia.

The minerals of concern are:

Columbite- tantalum (a source of tantalum)
Cassiterite (a source of tin)
Wolframite (a source of tungsten)
Gold

and their derivatives.

Pall requests that the Supplier advises Pall, in writing, if any of the above minerals or their derivatives are present in the material /article to be provided to Pall or are used in the production of that material / article by their supply chain. If so used or present, please conduct a country-of-origin determination of that mineral and advises Pall if the source indicates it to be a 'Conflict Mineral'.

G. **Jatropha Derived Material** – applicable materials provided by the vendor

The supplier is responsible for consulting with their materials suppliers to determine if materials derived from Jatropha plant (such as oils, glycerine, or proteins) are used in the materials/article to be supplied to Pall. If the presence of materials derived from Jatropha plant is confirmed, the supplier must notify the appropriate Pall ordering facility in writing.

H. **"State of California Environmental Protection Agency 'Office of Environmental Health Hazard Assessment - Safe Drinking Water and Toxic Enforcement Act of 1986'**

The State of California, USA has certain labelling and notification requirements relating to chemicals known to the State to cause cancer, birth defects or reproductive harm, which are listed on Prop-65.

If any substance on the current Prop-65 list or its derivatives, are known or suspected to be present in the article / materials supplied, are used in the Suppliers' processes, and/or come in contact with during the manufacture of Pall purchased component or material, the

Supplier must notify the Pall, in writing, defining the substance and any other available information relative to concentration and how the substance is used such that Pall may provide 'clear and reasonable' warnings as required by the State of California, USA, of any substance known in that State to cause cancer, birth defects or reproductive harm.

I. GMO and Allergen substances.

If a substance, known to be present in the material or article to be supplied to Pall, is derived from a genetically modified material source (GMO), or from of the following sources – considered potential allergens:

- Celery (root, leaves, stalk, not seeds)
- Cereals containing gluten (i.e. wheat, rye, barley, oats, spelt, kamut or their hybridized strains)
- Crustaceans
- Eggs or egg products (whites, yolks, meringue, mayonnaise, etc.)
- Fish (cod, flounder, salmon, trout, tuna, etc.)
- Lupin
- Milk and milk (dairy) derivatives
- Mollusks
- Mustard
- Peanuts or Peanut products (butter, oil, flour)
- Sesame Seeds
- Soybean or Soy Products (soy derived vegetable protein, tofu, etc.)
- Tree Nuts (including Almond, Brazil, Cashew, Chestnut, Filbert or Hazelnut, Hickory, Macadamia, Pecan, Pine, Pistachio, Queensland or Walnut)
- Sulphur dioxide and sulfites, at concentrations greater than 10 m/kg or 10 mg/l expressed as SO_2.

Or if any GMO or Allergenic substances listed above, are known or suspected to be present in the article / materials supplied, are used in the Suppliers' processes, and/or come in contact with during the manufacture of Pall purchased component or material.

The Supplier must notify Pall, in writing, defining the substance and any other available information relative to concentration and how the substance is used.

J. Rare Earth materials

If any goods to be supplied to Pall are known to contain any of the following 'Rare Earth' materials either as substances or part of formulations or in components. This information must be made known to Pall in writing.

- Lanthanum
- Cerium
- Praseodymium
- Neodymium
- Promethium
- Samarium
- Europium
- Gadolinium
- Terbium
- Dysprosium
- Holmium
- Erbium
- Thulium
- Ytterbium
- Lutetium
- Scandium
- Yttrium

K. US EPA FIFRA Requirements

Where the goods to be supplied are available for sale in the US and have an 'organism control' claim applied by the Seller, the goods shall be labelled with the applicable US EPA establishment number in accordance with US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The Seller shall also provide all information required by Pall to facilitate 'Notice of Arrival' into the US, including but not limited to:

- Copies of product labels showing US EPA establishment number
- Part number and batch number listings

L. Iron or steel from Russia

Where the goods to be supplied contain iron or steel parts, or are themselves iron or steel products, the supplier shall warrant that they have identified the source of those iron or steel materials. If the supplier identifies that the parts or products they intend to ship contain iron or steel known to, or suspected to, have originated from Russia, or exported from Russia, they shall immediately advise Pall Corporation in writing and NOT ship the items to Pall Corporation.

Table 1. Controlled Substances

A	B	C	D
Antimony and antimony compounds[1] including; Pryochlor, antimony lead yellow **Arsenic and arsenic compounds[1]** including: Triethyl arsenate Trilead diarsenate Calcium arsenate **Anthracene and Anthracene compounds[1]** including: Anthracene paste Anthracene Benz[a]anthracene Acrylonitrile Acrylamide including n-(hydroxymethyl)acrylamide Alkanes C_{10-13} (Short chain parafins) and their chlorinated compounds Medium chain chlorinated parafins (MCCPs) 4-chloroaniline 2-methoxyaniline (o-anisidine) N,N,N',N'-tetramethyl-4,4'-methylene dianiline Acetic acid Methoxyacetic acid (MAA) 2-Ethoxyethyl acetate Dioctyl adipate 4,4'-oxydianiline and its salts 2-methoxy ethyl acetate 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	Barium diboron tetraoxide **Beryllium and beryllium compounds[1]** **Bis(α,α-dimethylbenzyl) peroxide** **Bismuth and Bismuth compounds[1]** **Bisphenol compounds** including: Bis(2,3-epoxypropyl ethers (BADGE compounds) Bisphenol A (BPA) Bisphenol B Bisphenol P Bis(4-chlorophenyl) sulphone 2-bromopropane 2,2 bis(4-hydroxyphenyl) propane Boric acid Borax 1,3-butadiene 1,2-dibromoethane Benzyl chloride **Biocidal materials or substances** Benzo[abioacc]pyrene Diboron trioxide Tetraboron disodium heptaoxide, hydrate n-propylbromide Tert-butyl 4-[({[(EO-(1,3-dimethyl-5-phenoxy-1H-pyrazol-4-yl) methylene] aminooxymethyl] benzoate	**Cadmium or cadmium compounds[1]** including: Cadmium sulphide Cadmium oxide Cadmium chloride Cadmium fluoride Cadmium sulphate Cadmium nitrate Cadmium hydroxide Cadmium carbonate **Cobalt and cobalt compounds[1]** including: Cobalt chloride Cobalt dichloride Cobalt sulphate Cobalt dinitrate Cobalt carbonate Cobalt diacetate **Chromium and chromium compounds[1]** and **Hexavalent chromium and Hexavalent chromium compounds[1]** including: Chromic acid Chromic acid-calcium salts Chromium (III) chromate Chromic acid-magnesium salts Dichromic acid Oligomers of chromic and dichromic acids Calcium chromate Calcium dichromate Carbon monoxide Cyanuric acid Cyclododecane Chrysene	Disodium octaborate Disodium octaborate anhydride Disodium octaborate tetrhydrate 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) Reaction Mass of DOTE and MOTE[2] 1.2-Benezenedicarboxylic acid, dihexyl ester, branched and linear 5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane[1],5-sec-butyl-2-(4,6-dimehtylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane[2][covering any of the individual stereoisomers of [1]and[2] or any combination thereof] Pentacosafluorotridecanoic acid Pentadecafluorooctanoic acid Tricosafluorododecanoic acid Henicosafluoroundecanoic acid Heptacosafluorotetradecanoic acid Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts Perfluorohexane-1-sulfonic acid (PFHxS) and its sodium and ammonium salts Perfluorobutane sulfonic acid (PFBS) and its salts Dodecachloropentacyclodecane 2-(dimethylamino)-2-[(4-methylphenyl)methyl]-1[4-morpholin-4-yl)phenyl]butan-1-one

	Benzenamine, N-phenyl-, Reaction Products with Styrene and 2,4,4-Trimethylpentene (BNST) 3-benzylidene camphor (3-BC) Bumetrizole (UV-326) 2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol (UV-329)		
E Epoxydised Soybean Oil (ESBO) **Glycol ethers and acetates** including: Ethylene glycol ethers and acetates Ethylene glycol ethyl ether acetate Ethylene glycol methyl ether acetate Ethylene glycol methyl ether Ethylene glycol mono ethyl ether Ethylene glycol dimethyl ether Ethylene oxide Butyl Glycidyl Ether (BGE) Diethylene glycol dimethyl ether Triglyme (TEGDME) 1,2-dimethoxyethene, ethene glycol dimethyl ether (EGDME) Bis(2-(2-methoxyethoxy)ethyl)ether 2-ethoxyethanol Epichlorohydrin (1-chloro-2,3-epoxypropane) 1,2-Diethoxyethane Tetrachloroethylene Pentchlorobenzenethiol Ethylene diamine (EDA)	**F** Fenpyroximate (ISO) **Fluorocarbon (solvents, release agents and lubricants)** Basic Flavin Formamide	**G** Gallium arsenide Glycidol Glutaral	**H** **Hydrofluorocarbons (HFCs)** Hydrazine Cyclohexane-1,2-dicarboxylicanhydride Hexahydrophthalic anhydride (HHPA) Hexahydromethylphthalic anhydride Hexahydro-4-methylphthalic anhydride Hexahydro-1-methylphthalic anhydride Hexahydro-3-methylphthalic anhydride 2,2-bis(bromomethyl)propane1,3-diol (BMP); 2,2-dimethylpropan-1-ol, tribromo / derivative/3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA) 2,3-dibromo-1-propanol (2,3-DBPA) 4,4'-(1-methylpropylidene) bisphenol Hexabromocyclodecane (HBCD) group 6-[(C10-C13)-alkyl-(branched, unsaturated)-2,5-

			dioxopyrrolidin-1-yl] hexanoic acid
I Imidizole**,** imidazolidine and imidazole compounds 2-methylimidazole 1-vinylimidazole Imidazolidine-2-thione Isopene	**L** **Lead and lead compounds**[1] including Lead hydrogen arsenate Lead azide Lead acetate Lead diacetate Lead diazide Lead styphnate Lead dipicrate Lead II bis methane sulfonate Lead tetoxide Lead cyanamidate Lead dinitrate Lead monoxide Lead oxide sulphate Lead titanium trioxide Lead titanium zircon oxide Lead bis(tetrafluoroborate) Trilead dioxide phosphonate Trilead bis(carbonate) dihydroxide Tetralead trioxide sulphate Tetraethyl lead Pentalead tetroxide sulphate Dibasic lead salt of sulfurous acid Lead silicate Lead stearate **Latex**	**M** Melamine Melamine formaldehyde **Mercury and mercury compounds**[1] Dimethyl formamide (DMF) Dimethyl acetamide (DMAC) Dimethyl sulfoxide (DMSO) 1-Methyl-2-pyrrolidone (NMP) 4,4'-methylene bis(2-chloraniline) 2-methoxy-1-propanol 2-methoxy ethyl acetate 2-methoxyethanol 4-methyl-m-phenylene diamine 2-methoxypropyl acetate n-methylacetamide (NMA)	**N** **N-Nitrosamine compounds** **Nickel and nickel compounds**[1] including: Nickel sulphate Nickel sulphide Nickel sub sulphide Nickel bis(sulphamidate) Nickel monoxide Nickel dioxide Nickel trioxide Nickel carbonate Nickel carbonyl 2-naphthylamine Trinickel disulphide Tetracarbonyl nickel **Nano-technology materials** Nitrobenzene and dinitrobenzenes Nonyl phenol N-butyl benzene Naphthalene and polychlorinated naphthalenes
O **Oils and corrosion prevention agents** Octamethyltrisiloxane Octylphenol Methyloxirane 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine Ammonium pentadecafluorooctanoate (APFO) Orthoboric acid, sodium salt	P **Phthalates of the type:** Dicyclohexyl phthalate Diethyl phthalate Dipropyl phthalate Dimethyl phthalate Diamyl phthalate Dinonyl phthalate Di-n-octyl-phthalate Di-isodecyl phthlate (DIDP) Dihexyl phthalate (DHP) Dicyclohexyl phthalate (DCHP) Diisohexylphthalate 1,2-benzenedocarboxylic acid, di-C6-10-alkyl ester 2,3- benzenedocarboxylic acid, mixed decyl and hexyl and octyl diesters with greater	**S** Stylene / Styrene **Selenium and selenium compounds**[1] Silicone (oils, release agents and sprays) Sodium formaldehyde sulfoxylate Sodium hydroxide (Industrial) Sodium sulphide Sodium dichromate, dihydrate Sodium perborate	T Dibutyl tin chloride Trialkyl and triaryl tin compounds Dibutylbis(pentane-2,4-dionato-O,O')tin Thiurams Tantalum Tantalite Thallium 1,2,3-trichloropropane Tetraboron disodium heptaoxide hydrate

Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol	than or equal to 0.3% of dihexyl phthalate Phenol (tetrapropenyl) derivatives Phenol, alkylation products (mainly in para position) with C12-rich branched alkyl chains from oligomerisation, covering any individual isomers and/ or combinations thereof (PDDP) Branched dodecyl phenol **Polybrominated flame retardants** including**;** Pentabromodiphenyl ether group Qctabromodiphenyl ether Tetrabromodiphenyl ether group Polybromimated biphenyls (PBB) Polybromimated biphenyl ethers (PBDE) Polybrominated terphenyls (PBTs) Bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof Pericarpium papaveris PVC Vinyl chloride PVDC Potassium bromate Propyl bromide Propyl imine Propyleneimine Propylene oxide Pentachlorophenol, its salts and ethers Perchloroethylene Perfluamine Tri-(2,3-dibromo-propyl) phosphate	Perboric acid, sodium salt, Sodium peroxometaborate Disodium tetraborate anhydrous Sodium thiocyanate Sodium metabisulfite Sulphur (Industrial) Diethyl sulphate Dimethyl sulphate Sulfurous acid, lead salt, dibasic Tributylstannyl benzoate Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety 2-(4-tert-butylbenzyl) propionaldehyde and its individual stereoisomers 4,4’-sulphonyl diphenol	Tar oils and creosotes Toluene 4-nitrotoluene 2,3-dinitrotoluene 2,6-dinitrotoluene 3,5-dinitrotoluene Dinitrotoluene (mixed isomers) 2-aminotoluene 2,4-diaminotoluene Trichlorotoluene Methylphenylenediamine diaminotoluene mixture (CAS 25376-45-8) o-Toluidine 4,4’-methylenedi-o-toluidine 6-methoxy-m-toluidine Trixylyl phosphate TGIC (1,3,5-tris(oxiranylmethyl 1,3,5-triazine-2,4,6-(1H,3H,5H)-trione Beta-TGIC (1,3,5-tris[(2s and 2R)2,3-epoxy propyl)]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) 2,3,3,3,- tetrafluoro-2-(heptafluoropropoxy)propionic acid (HFPO-DA), and its salts and its acyl halides **Very Bioaccumulative substances including**: Reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine 4-tert-butyl phenol 2,4,6-tri-tert-butylphenol Z Zinc and zinc compounds[1] including:

	(TBPP) Tris-(1-aziridinyl) phosphineoxide Tributyl phosphate Triphenyl phosphate (TPP) O,O,O-triphenyl phosphorothioate Phenolphthalein 4-(1,1,3,3-tetramethylbutyl)phenol (4-tert-octylphenol) 1,3-propanesultone 1,2,3-trichloropropane 4,4'-isopropylidenediphenol 4,heptylphenol, branched and linear para-(1,1)dimethylpropyl phenol 2,2-bis(4'-hydroxyphenyl0-4-methyl pentane PFAS – perfluoro and polyfluoroalkyl (long and short chain) substances and compounds Including Bisphenol AF		4-(1,1,3,3-tetramethylbutyl)phenol,(4-tert-octylphenol) Red Phosphorus
UV adsorbers: 2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl) phenol (UV-327) 2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl) phenyl (UV-350) 2-benotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	**Fibers:** Quartz Ceramic Fibres (CAS 66402-68-4) Aluminosilicate Refractory Ceramic Fibres (RCF) Refractory ceramic fibres (CAS 142844-00-6) Special purpose 475 Glass Fibers Special purpose E-Glass Fibers	**Dye stuffs; (Industrial)** Acid orange Basic Violet 3 Basic Blue 26 Basic Orange Basic yellow Direct Red 28 Direct Black 38 Malachite green Phthalcocyanine Green Sudan Red Solvent Blue 4 Rhodamine B	**Other:** 4,4'-bis-(dimethylamino) benzo phenone 4,4'-bis(dimethylamino)-4''-methylamino) trityl alcohol Silicic acid (H2Si2O5), barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD) Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2],

	Zirconium aluminosilicate Refractory Ceramic Fibres (Zr-RCF) Mica	Azo compounds	trans-cyclohexane-1,2-dicarboxylic anhydride [3] [Individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered Reaction products of 1,3,4-thiadiazolidine-2,5-dithione formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥ 0.1% w/w 4-heptylphenol, branched and linear] (+)-1,7,7-trimethyl-3-[(4-methyl phenyl)methylene]bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and or combinations thereof (4-MBC) Reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives 6,6'-di-tert-butyl-2,2'methylene-p-cresol S-(tricyclo(5.2.1.O'2,6)deca-3-en-8(or 9)-ylO-(isopropyl or isobutyl or 2-ethyl hexyl) O-(isopropyl or isobutyl or 2-ethyl hexyl) phosphorodithioate Tris(2-methoxyethoxy)cresol silane Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

NOTES –

'1', Where stated 'and their compounds' please advise any of compounds of this substance known to be present – please do not limit to the examples given. Beryllium or beryllium compounds, Cadmium or cadmium compounds, Hexavalent chromium or hexavalent chromium compounds, Lead or lead compounds, Mercury or mercury compounds.

CONEG (Coalition of Northern Governors) requirements of less than 100 ppm for total incidental cadmium, chromium, lead and mercury.

EU Restriction of Hazardous Substances in Electronic and Electrical Equipment **EU directive 2011/65/EU** (ROHS2) and amendment 2015/863 requirements for concentrations of lead, cadmium, mercury, hexavalent chromium and requirements for polybrominated biphenyls (PBBs) and polybrominated biphenyl ethers (PBDE) and various phthalate substances, must be less than:

Lead limit	0.1% (1000ppm)
Mercury	0.1% (1000ppm)
Hexavalent chromium	0.1% (1000ppm)
Cadmium	0.01% (100ppm)
Polybrominated biphenyls (PBBs)	0.1% (1000ppm)
Polybrominated biphenyl ethers (PBDE)	0.1% (1000ppm)
DEHP	0.1% (1000ppm)

BBP	0.1% (1000ppm)
DBP	0.1% (1000ppm)
DIBP	0.1% (1000ppm)

Batteries limit Cadmium 20ppm and Mercury 5ppm

'2', Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate(reaction mass of DOTE and MOTE)

Table 2. Disallowed Substances

A	B	C	D
Aldrin	Bis(tributyl tin oxide)	Chlordane	Dyes:
		Chlorinated paraffin	Red 104
Azo compounds including;	Bis(hydroxyphenyl)methane bis(2,3-epoxypropyl) ethers (BFDGE)	Chlordecone	Yellow 34
Azo dicarbonamide			
o-amino azo toluene		Chlorofluorocarbon (CFC)	Dieldrin
Antistaic agents***	**Benzene, its compounds and polyaromatic hydrocarbons (PAH)**	Chromium (VI) trioxide	Dioxins and cogeners including polychlorinated dibenzodioxins (PCDD)
4-aminodiphenyl	Including pentachloro benzene	**Oligomers of chromic and dichromic acids**	1,4-dioxane
Asbestos and asbestos fibres*	Trichlorobenzene	Ammonium dichromate	N,N-ditolyl-p-phenyldiamine
Arsenic acid	1,3-bis(isocyanatomethyl)benzene	Potassium dichromate	Dimethyl fumarate (DMF)
Diarsenic pentoxide	Benzo(k)fluoranthene	Potassium chromate	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich
Diarsenic trioxide	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride	Dichromium (tris) chromate	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)
2,2'-dichloro-4,4'methylenedianiline (MOCA)	Butyl-4-hydroxybenzoate	Potassium hydroxyoctaoxodizincated dichromate	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear
Anthracene oil	Isobutyl4-hydroxybenzoate	Coal tar pitch, high temperature	D-Gluconic acid and its salts D-gluco-Heptonic acid, sodium salt
Black Pitch	1,1'-[ethane-1,2-diylbisoxy]bis[2,4,6-tribromobenzene]	**Diisocyanates:**	o- and p- dichlorobenzene
3-methoxybutyl acetate	Benzidine	4-methyl-m-phenylene diisocyanate	1-Docosanol
	Bis(chlormethyl) ether	Hexamethylene diisocyanate	Dichloroethane
	Beta-naphthylamine	2-methyl-m-phenylene diisocyanate	Trans-1,2-dichloroethylene
	2,2H-1,2,3-benzoytiazol-2-yl-4,6-di-tert-butylphenol	3,3'-dimethylbiphenyl-4,4'-diyl diisocyanate	Dichloropropane
	Benzo[ghi]perylene	4,4'-methylenediphenyl diisocyanate	
	Benzopyran (HHCB)	2,4,6-triisopropyl-m-phenylene diisocyanate	
		m-tolylidene diisocyanate	

	1,bromopropane Tetrabromobisphenol A (TBBPA)	1,3-bis(1-isocyanato-1-methylethyl) benzene 1,5-naphthylene diisocyanate 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate 4,4'-methylenedicyclohexyl diisocyanate	Decanedioic acid -1,10-dibutyl ester Dechlorane Plus™
E **Endocrine disrupting chemicals (EDCs)** Endrin Bis(2-methoxyethyl) ether 1,2-Dichloroethane (EDC)	**F** **Furans and cogeners** including polychlorinated dibenzofurans (PCDF) Sulphur hexafluoride **Fungicides**	**H** **Herbicides** Halogenated biphenyl methane compounds Hexabromobiphenyl Hexabromobiphenyl ether group Heptabromobiphenyl ether group Heptachlor Hexachlorobenzene	**I** **Insecticides** including: DDD DDE DDT Endosulfan and its isomers Dicofol Clofenotane
1-Eicosanol Ethylene dibromide	Freon 150 Formaldehyde, and its oligomeric reaction products with aniline Fluranthene	Hexabromocyclododecane (HBCDD) and its major diastereoisomers αhexachlorocyclohexane βhexachlorocyclohexane Highly volatile halogenated hydrocarbons Hydrochlorofluorocarbon (HCFC) Halon 1211 Halon 1301 2-(2'-hydroxy-3'5'-di-tert-butylphenyl)benzotriazole Hexachlorobuta-1,3-diene (HCBD) 1,2 hexanediol	
L Lead chromate Lindane	**M** Mirex Musk xylene 4,4-diaminodiphenyl methane (MDA)	**N** Novolac glycidyl ethers (NOGE) 4-nitrodiphenyl Nonyl phenolethoxylate (NOE)	**O** **Organic tin compounds** - Tributyl tin Triphenyl tin **Ozone depleting substances**** 1-Octadecanol
P **Pesticides** -	**R** **Radioactive substances**	**S** Sodium chromate	**T** Toxaphene

Including Methoxychlor™ Phenanthrene Pyrene Polychlorinated biphenyls (PCBs) group Polychlorinated terphenyls (PCTs) Polychlorinated napthalenes Polychlorinated and polybrominated dioxins & furans PFOS, its salts & PFOS-related compounds PFOSF Perfluorooctanoic acid its salts & PFOA-related compounds Perfluoroheptanoic acid and its salts Triphenyl phosphate (TPP) Phthalic anhydride(1,3-isobenzofurandione) Propanedioic acid, 1,3-diethyl ester Propanedioic acid, 1,3-dimethyl ester Phenol 2,4,6-tri-tert-butylphenol (2,4,6-TTBP) Phenol, Isopropylated phosphate (PIP (3:1)) Pentachlorothiophenol (PCTP) 2-(2H-benzotriazol-2-yl)-4,6-ditertpentyl phenol (UV-328) 2,2'6,6'-tetrabromo-4,4'-isopropylidenediphenol	**Rodenticides**	Sodium dichromate, anhydrate Strontium chromate Octamethyl cyclotetrasiloxane (D4) Decamethyl cyclopentasiloxane (D5) Dodecamethyl cyclohexasiloxane (D6) Short chain chlorinated paraffins (SCCPs)	Thiocyanic acid (2-benzothiazolythiomethylester) (TCMTB) 2,4,6-tri-tert-butylphenol Trichloroethylene 1,1,2- trichloroethane m-tolyidene diisocyanate 2,4-dinitrotoluene Tris(2-chloroethyl) phosphate (TECP) Triton X-100 4-(1,1,3,3-tetramethylbutyl) phenol ethoxylated (OPE) 4-nonylphenol branched and linear 4-nonylphenol branched and linear ethoxylated Terphenyl hydrogenated
Phthalates of the type: Butyl benzyl phthalate (BBP) Dibutyl phthalate (DBP) Diisobutyl phthalate (DIBP) Dioctyl phthalate (DOP) Bis(2-ethylhexyl) phthalate (BEHP) Di-2-ethylhexyl-phthalate (DEHP) Di-iso-nonyl phthalate (DINP)	**Y** Yellow phosphorus	**Z** Pentazinc chromate octahydroxide	2,6,10,15,19,23-hexamethyl tetracosane Decabromodiphenyl ether (Deca-BDE) OTHER:

Diisopentylphthalate (DIPP) Bis(2-methoxyethyl) phthalate Dipentyl phthalate (DPP) N-pentyl-isopentylphthalate Dicyclohexyl phthalate 1,1'-oxybis-2-propanol Oxybis-propanol Propanol, 1(or2)-(2-methoxymethylethoxy)-acetate Propanol, [2,(2-butoxymethylethoxy)methylethoxyl]- Propanol, [1-methyl-1,2-ethanediyl)bis(oxy)]bis			o-(p-isocyanatobenzyl) phenyl isocyanate 2,2'-methylenediphenyl diisocyanate

NOTES –

*__Asbestos / Asbestos fibers__ – Material must not contain any asbestos fibers or be in contact with material containing asbestos during processing.

** **Ozone depleting substances** (general) including but not limited to: Polybrominated flame retardants, Polybromobiphenyl (PBBs), Polybromobiphenyl ethers (PBBE), Polychlorobiphenyls (endos), Polychloroterphenyls (PCTs)

*** **Antistatic agents** – activated carbon is permitted for use. Please therefore advise Pall of the nature of the antistatic to confirm it is specifically disallowed.