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Note: This document applies to Kratos RT Logic, Inc.

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Statement

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KRATOS

Kratos REACH Statement

Kratos is committed to manufacturing products in a manner that minimizes risk to the health and safety of human beings and the environment. Regarding REACH, we confirm that Kratos is aware of obligations under the REACH regulation No 1907/2006 of the European parliament and of the Council of 18 December 2006 concerning the Registration, Authorisation and Restriction of Chemicals (REACH)—in particular to Annex XVII, which restricts the use of certain Substances of Very High Concern (SVHC).

Under the REACH regulation, Kratos would be considered a downstream user whose products are categorized as *articles*. An article is *"an object which during production is given a special shape, surface or design which determines its function to a greater degree than its chemical composition"*. Registration of an article is only required if a chemical substance is intended to be released from the product during normal and reasonable use and/or if the total amount of the chemical substance in all imported articles exceeds 1 ton per year. These conditions are not relevant to Kratos products; therefore, Kratos is not subject to the REACH regulation's registration requirements.

With regard to substances, there are certain chemical substances identified under REACH as of particular concern because they may have very serious effects on human health and the environment. These substances can be found in the *Candidate List of substances of very high concern for Authorisation (Candidate List)* on the European Chemicals Agency (ECHA) website. If a substance on the Candidate List is contained in articles at a concentration of above 0.1%, then there are obligations for companies producing, importing, and supplying these articles. Notification of the presence of an SVHC in an article, as well as relevant safety information about the SVHC used, is required.

Kratos has conducted research to understand which SVHCs are most commonly found in electronic components. Based on that general research, and the expected levels of SVHCs that might be in electronic product components, we have concluded the following:

- We do not believe Kratos products contain the requisite levels of SVHC's to necessitate registration or reporting under REACH.
- Even if there were minimal levels of SVHC's in some components, we believe that our products are safe to human health and the environment when used in accordance with product documentation.

We continue to monitor the development of the REACH Directive to ensure that our company remains compliant.

Kratos Substances of Very High Concern (SVHC) List

The Substances of Very High Concern (SVHC) List is presented in Table 1 and contains all SVHC as of June 25th, 2020, per the ECHA website. Kratos provides the SVHC list with a High/Medium/Low risk rating of them likely being present in electronic equipment.

Table 1. Substances of Very High Concern (SVHC) List

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	Carcinogenic (Article 57a). used in **inks**, dyes, **paints,** and **pigments, dyeing** a variety of materials, such as **paper,** cosmetic products. Is not expected in concentrations above 0.1% w/w in articles. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_c_i_basic_blue_26_pub_en.pdf	Low	No
[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	548-62-9	Carcinogenic (Article 57a). dye in ink applied in cartridges for printers and in ball pens and as dyestuff for paper colouring. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_c_i_basic_violet_3_pub_en.pdf	Low	No
[Phthalato(2-)]dioxotrilead	69011-06-9	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Professional use of plastics, PVC processing. https://echa.europa.eu/documents/10162/c667c4e8-6a8a-4434-a6bc-f4d23e068e0a	Medium	No
1,2,3-Trichloropropane (1,2,3-TCP)	96-18-4	Carcinogenic and toxic for reproduction (articles 57 a and 57 c). Used as in Pesticides, Chlorinated solvents, Polysulfide elastomers (cross-linking agent), Hexafluoropropylene (cross-linking agent). 1,2,3-TCP seemed to be used as an intermediate in the synthesis of other chemical substances. The lifecycle of 1,2,3-TCP ends in this synthesis. Therefore, it is assumed that no 1,2,3-TCP is used in articles. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_echa_cmr_123-tcp_publ_en.pdf	Low	No
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	68515-51-5, 68648-93-1	Toxic for reproduction (article 57c). uses are for example in **adhesives,** lubricants, coatings, building material, **cable** compounding, **polymer foils, PVC compounds** and artist supply. https://echa.europa.eu/documents/10162/a29d1d03-af35-4c82-9775-0723ab337b3f	High	Yes
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	Toxic for reproduction (article 57c). Plasticiser in **PVC,** Plasticiser in sealants and printing inks. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_echa_cmr_dihp_en.pdf	High	Yes
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	Toxic for reproduction (article 57c). Electrical **cables,** as a plasticizer, polyvinyl chlorides (**PVC**) and foam; automotive sealant; urethane, **glass,** and transmission adhesive; roof coatings, barrier coatings, exterior trim, and tarps; cement, caulk, and sealer; and high-end luggage. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_dk_cmr_dhnup_en.pdf	High	Yes
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	Toxic for reproduction (Article 57 c). There is no reported use of this substance in electrotechnical products. However, the substance is chemically **similar to DEHP, DBP, DIBP and BBP**, and may be used as a substitute for these phthalates in **PVC plastic, adhesive and inks** since their use becomes phased out. https://www.echa.europa.eu/documents/10162/21636556/annex_xv_svhc_ec_271-093-5_12_benzenedicarboxylic_acid_en.pdf	Medium	Yes
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	Toxic for reproduction (Article 57 c). Used as plasticizers in **plastic** material. http://www.panasonic.com/jp/corporate/eco/chem_info/pdf/en/13th_SVHC_E.pdf	Medium	Yes
1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	Toxic for reproduction (Article 57 c). Solvent or process chemical. Glymes are also reported to be used in the formulation of electrolyte systems for **lithium batteries**. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_tegdme_203-977-3_en.pdf	Medium	No
1,2-dichloroethane	107-06-2	Carcinogenic (article 57 a). Intermediate in the manufacture of vinyl chloride monomer (VCM). Manufacture of fine chemicals, an extraction agent, a solvent in the preparation of mixtures for biochemical applications (e.g. liquid media and cell cultures) and as an inhibitor. It is also used as a dispersant in **rubber and plastics**, as a wetting and penetrating agent. Is not expected above 0.1% w/w in EEE products. https://www.epa.gov/sites/production/files/2016-09/documents/ethylene-dichloride.pdf	Low	Yes
1,2-Diethoxyethane	629-14-1	Toxic for reproduction (Article 57 c). Used as solvent and diluent for detergents, for eter gum and some resins, and ink formultations, polyurethanes epoxies. https://echa.europa.eu/documents/10162/c52546c1-89ad-4b0e-a141-b33bc279d853	Medium	No
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	Toxic for reproduction (Article 57 c), in **lithium manganese batteries**. EGDME is also used as cleaning solvent and within **solder** fluxes within the microelectronics industry. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_egdme_203-794-9_en.pdf	High	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	Mutagenic (Article 57b). Is used as a hardener in resins and coatings. Manufacture of polyester powder paint coatings for metal finishing. Electrical insulation materials, resin-molding systems, laminated sheetings, silk-screen printing coatings, tools, inks, adhesives, lining materials, and stabilizers for plastics. In solder “mask” inks in the printed circuit board industry. During the heat treatment processes, the TGIC becomes fully cross-linked into the resin or coating to form a solid matrix and is not detectable in articles. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_beta_tgic_en.pdf	Low	No
1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC)	59653-74-6	Mutagenic (Article 57b). Hardener in resins and coatings, polyester powder coatings for metal finishing, powder coating electrical equipment, refrigerators, washing machines and ovens. The substance may also be used in inks in the printed circuit board industry, for example two-part inks used for solder-masking can contain up to around 60% TGIC in the hardener component. include in electrical insulation materials, resin moulding systems, laminated sheeting, silk-screen printing coatings, tools, adhesives, lining materials and stabilisers for plastics. During the heat treatment processes, the TGIC becomes fully cross-linked into the resin or coating to form a solid matrix and is not detectable in artticles. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_beta_tgic_en.pdf	Low	No
1,3-propanesultone	1120-71-4	It is used as a chemical intermediate in the production of fungicides, insecticides, cation-exchange resins, dyes, vulcanization acccelerators, detergents, lathering agents, bacteriostats, and a variety of other chemicals and as a corrosion inhibitor for mild. https://ntp.niehs.nih.gov/ntp/roc/content/profiles/propanesultone.pdf	Medium	No
1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one; 3-benzylidene camphor; 3-BC	15087-24-8	Endocrine disrupting properties. Used in personal care products and cosmetics as a UV filter. https://chemicalwatch.com/8343/france-bans-3-benzylidene-camphor-in-cosmetics https://academic.oup.com/toxsci/article/93/2/311/1707808	Low	No
1-bromopropane (n-propyl bromide)	106-94-5	Toxic for reproduction (Article 57 c). It is a solvent. It is used in dry cleaning, vapor decreasing, auto parts cleaning, spray adhesive applications, and **electronic parts** manufacturing. However, evaporates during use and so is not present in supplied articles for use in hardware and electrical and electronic equipment. http://www.lni.wa.gov/Safety/Research/Files/BromopropaneFactSheet.pdf	Low	Yes
1-Methyl-2-pyrrolidone (NMP)	872-50-4	Toxic for reproduction (article 57c). Solvent in various processes in a wide variety of applications, High temperature coating, urethane dispersions, acrylic and styrene latexes, Paint removers, floor strippers, graffiti remover, industrial degreasing, injection head and cast-molding equipment cleaning, Solvent for herbicide, pesticide and fungicide formulations, Electronics Cleaning, de-fluxing, edge bead removal, photoresist stripping, Lube oil processing, natural and synthetic gas purification. However it is used as a solvent that evaporates and is not detected in finished articles. https://echa.europa.eu/documents/10162/13641/nmp_annex_xv_report_en.pdf https://echa.europa.eu/documents/10162/01e8a6d8-ba7a-474d-a640-49053005ec99	Low	No
1-vinylimidazole	1072-63-5	Intermediate and monomer for polymer production of paints, lacquers, varnishes, surface treatment, and cleaning/washing agents. Impurities in mixtures above 0.1% are reported. https://echa.europa.eu/documents/10162/940d9168-1689-ab7f-ea3b-1de2f5f5530c	Medium	No
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	UV-stabilisers, especially for transparent **plastic** materials, **polyurethanes and rubber**, as well as constituent in formulations used for **coating** of surfaces. https://echa.europa.eu/documents/10162/0a09c8af-c7d2-4524-a880-6cb10ddcd1ac	Medium	Yes
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) (MDTP)	25973-55-1	PBT (Article 57 d), vPvB (Article 57 e). Additive in a variety of **plastics, UV absorber** (packaging…): styrene homo- and copolymers, acrylic polymers, unsaturated polyesters, polyvinylchloride, polyolefins, polyurethanes, polyacetals, polyvinyl butyral, elastomers, and **adhesives.** http://pharosproject.net/uploads/files/sources/1828/1371648647.pdf	High	Yes
2,2-bis(4'-hydroxyphenyl)-4-methylpentane; BisP-MIBK	6807-17-6	Toxic for reproduction. May be used in thermal paper, like receipts. Possible traces in plastics and epoxy resins. https://pubchem.ncbi.nlm.nih.gov/compound/4_4_-_4-Methylpentane-2_2-diyl_diphenol#section=Use-and-Manufacturing	Low	No
2,2'-dichloro-4,4'-methylenedianiline	101-14-4	Carcinogenic (article 57 a). Has been used as a curing agent for **polyurethane, in resins and hardner .** https://echa.europa.eu/documents/10162/60a7fca7-7291-45bb-b854-a1be7aa8cd76	Medium	Yes
2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof); HFPO-DA	-	In the manufacturing process of fluoropolymer resins that are used in many applications such as wire cables or PTFE (Teflon) coating. https://echa.europa.eu/-/four-new-substances-added-to-the-candidate-list	Low	No
2,4-Dinitrotoluene	121-14-2	Carcinogenic (article 57a). used as a chemical intermediate in the production of toluene diisocyanate (4-methyl-m-phenylenediisocyanate), also named toluene-2,4-diisocyanate	Low	Yes

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
		(TDI), from toluene-diamine (4-methyl-m-phenylenediamine) also named toluene-2,4-diamine (TDA) which is used to make flexible polyurethane foams. Used as gelatinizing-plasticizing agent. https://echa.europa.eu/documents/10162/b1176fd0-799d-4c08-a908-755a1c82181f		
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	UV-protection agent in **plastics, rubber and polyurethanes. In polymers** such as polypropylene, high density **polyethylene,** unsaturated **polyester,** styrene-based thermoplastic **elastomer,** polyamide, acrylonitrile butadienc styrene, impact polystyrene, polyvinylidenchloride, chloropride, cyhloroprene **rubber**. https://echa.europa.eu/documents/10162/755b24e4-40dc-455b-afc0-b5e4e9045701	Medium	Yes
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	PBT (Article 57 d), vPvB (Article 57 e). Used as **UV-absorbers for plastics, rubber, polyurethanes**. https://echa.europa.eu/documents/10162/13638/annex_xv_svhc_ec_223-346-6_uv320_en.pdf	Medium	Yes
2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	119313-12-1	Is a photosensitive agent in the manufacture of printing inks, pigmented coatings and photopolymers for imaging applications. These uses involve industrial and professional workers. The mechanism of photo-curing is initiated by UV-induced cleavage of the substance. https://echa.europa.eu/documents/10162/82edd904-8cb3-c4aa-cc14-e1ce8c5813c0	Low	No
2-Ethoxyethanol	110-80-5	Toxic for reproduction (article 57c). 2-Ethoxyethanol is used as a solvent and a chemical intermediate for the synthesis of ethylene glycol monoethyl ether acetate. Used as an industrial solvent for nitrocellulose, varnish removers, cleansing solutions, and dye baths. It has been used for the formulation of **paints**, lacquers, varnishes and **printing inks**. Evaporates during use is not detectable as a substance in harware products. https://ntp.niehs.nih.gov/ntp/htdocs/st_rpts/tox026.pdf http://www.ecy.wa.gov/programs/hwtr/rtt/cspa/pdf/110805.pdf	Low	No
2-Ethoxyethyl acetate (2-EEA)	111-15-9	Toxic for reproduction (article 57c). Was mainly used as a solvent in the chemical industry and for the formulation of paints, lacquers and varnishes for industrial use. This information is based on historic information and seems to have no relevance at present. https://echa.europa.eu/documents/10162/d02e2d1c-0f53-4cf6-aec8-f1697fcf2db3	Low	No
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	Toxic for reproduction. Used as heat stabiliser for **PVC.** https://echa.europa.eu/documents/10162/21732369/annex_xv_svhc_ec_239-622-4_dote_en.pdf	Medium	No
2-Methoxyaniline; o-Anisidine	90-04-0	Carcinogenic (article 57 a). As an intermediate for a number of direct yellow, red and blue azo dyes and pigments and some acid dyes. printing inks (e.g. books, packings, cans), colouring of polymers (e.g. PVC, polyolefines, foam material, rubber), textile printing, paints for automobiles, walls). However, in all these applications, o-Anisidine is reacted to form the dye, and is not present in concentrations > 0.1% w/w in hardware articles. https://echa.europa.eu/documents/10162/c556ccd6-05be-41ab-a896-058ca6b8fae3	Low	No
2-Methoxyethanol (ethylene glycol monomethyl ether; EGME)	109-86-4	Toxic for reproduction (article 57c) -A wide application as a solvent, chemical intermediate and solvent coupler of mixtures and water-based formulations. Is now mainly used as a chemical intermediate or as additive for fuels. In addition, it can also be used as industrial processing aid in different areas (e.g. in the manufacture of medical devices). Is also used for certain production steps of surface coating in aeronautics. Evaporates during use and is not detected in hardware products. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_austria_cmr_2-methoxyethanol_en.pdf	Low	No
2-methoxyethyl acetate	110-49-6	Was historically used as a process solvent for gums, resins, waxes, oils, manufacture of semiconductors, textile, painting, photographic films. etc. Was used as intermediate in industrial applications. https://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=9F0069F1-1#s4	Low	No
2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	71868-10-5	Used in polymer production. Photoinitiator in coatings, adhesives and inks for industrial and professional use (etch resists, printing plates and solder masks). Used as an initiator in a photo-curable material UV-curable coatings and inks. https://www.chemicalbook.com/CASEN_71868-10-5.htm	Low	No
2-methylimidazole	693-98-1	Catalyst, starting material, chemical intermediate or component in the manufacture of pharmaceuticals, photographic and photothermographic chemicals, dyes and pigments, agricultural chemicals and rubber Polymerization crosslinking accelerator and hardener for epoxy resin systems for semiconductor potting compounds and soldering mask as well as a component of numerous polymers including epoxy resin pastes, acrylic rubber-fluororubber laminates, films, adhesives, textile finishes, and epoxy silane coatings Dyeing auxiliary for acrylic fibers and plastic foams Mainly used in the manufacturing of fabricated metal products, machinery and equipment, transport equipment, and chemicals and	High	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
		chemical products (mainly paints, lacquers and varnishes) https://echa.europa.eu/documents/10162/6ee8909e-9353-fb64-f903-517c862c4f4f		
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	Toxic for reproduction (Article 57 c). Moisture scavenger for use in urethane coatings, sealants and elastomers. http://trc-canada.com/detail.php?CatNum=E679630&CAS=143860-04-2&Chemical_Name=3-Ethyl-2-methyl-2-(3-methylbutyl)-oxazolidine&Mol_Formula=C11H23NO&Synonym=3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine;%20Zoldine%20MS-PLUS	Low	No
4-(1,1,3,3-tetramethylbutyl)phenol	140-66-9	Equivalent level of concern having probable serious effects to the environment (article 57 f). Used as an intermediate for the production of phenolic **resins,** non-ionic surfactants and rubber additives. OP is also used for the manufacturing of antioxidants, fuel oil stabilizers, **adhesives,** inks, dyestuffs, fungicides, bactericides, and for vulcanizing **synthetic rubber. At least 95-98% is chemically altered before reaching the consumer market. The remaining 2-5% are uspposed to be used in fuel for aeroplanes in the USA.** http://www.inchem.org/documents/sids/sids/140669.pdf	Medium	No
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues] (4-tert-Octylphenol ethoxylates) (4-tertOPnEO)	-	Equivalent level of concern having probable serious effects to the environment (Article 57 f). Used in formulation of paints, industrial end-use of paints, varnish or adhesive, consumer and professional end-use of paints and other products, in emulsion polymerisation, and as an intermediate in the production of ethersulphates. Not expected above 0.1% w/w in EEE. http://echa.europa.eu/documents/10162/acedb3ea-0cf5-40d0-8f97-6881d73bfee1	Low	Yes
4,4'- Diaminodiphenylmethane (MDA)	101-77-9	Carcinogenic (article 57a). Intermediate in the manufacture of **high performance polymers**. Intermediate in processing to 4-4'methylenebis(cyclohexaneamine) and other polymeric isocyanates which are used to manufacture **polyurethane** foams. Hardener in **epoxy** resins. Hardener in **adhesives.** MDA is also used as a curing agent for epoxy resins and urethane elastomers, as a corrosion preventative for **iron,** as an antioxidant for lubricating oils, as a **rubber** processing chemical, as an intermediate in the manufacture of elastomeric fibers (e.g., **Spandex**), and in the preparation of azo dyes. However, the substance becomes fully reacted in a polymerisation process. https://www.epa.gov/sites/production/files/2016-09/documents/4-4-methylenedianiline.pdf	Low	Yes
4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	561-41-1	Carcinogenic (Article 57a). Used in inks and dyes - ball point pens, computer cartridges, typewriter, ribbons, paper (copying, carbon), packaging, distemper, wood, lacquers, plastics, and feathers. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_ec_209-218-2_pub_en.pdf	Low	No
4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	Carcinogenic (Article 57a). Important intermediate in the manufacture of triphenylmethane dyes, in the production of polymers, additive in dyes and pigments, acting as photosensitizer, as a process chemical for electronic circuit board manufacture. Michler's Ketone is not expected in concentrations > 0.1% w/w in articles. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_michlers_ketone_pub_en.pdf	Low	No
4,4'-methylenedi-o-toluidine	838-88-0	Carcinogenic (Article 57a). Chemical intermediate for dyes. http://wfcache.advantech.com/www/csr/pdf/quality_assurance/advantech%20reach%20declaration.pdf	Low	No
4,4'-oxydianiline and its salts	101-80-4	Carcinogenic (Article 57a); Mutagenic (Article 57b). Used as a chemical intermediate in the manufacture of high temperature-resistant straight polyimide and poly(esterimide) **resins.** These types of resins have wide application as insulating enamels in **wire and electrical equipment**, as binders in **laminates for printed circuits** and honeycomb structures, and in the molding of grinding wheels. The fluorine-modified polyimide polymers are also used as adhesives in metal-to-metal bonding of airplane parts. Since this is an intermediate, it is not exepcted above 0.1% w/w in EEE articles. https://ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr205.pdf	Low	No
4-Aminoazobenzene	60-09-03	Carcinogenic (Article 57a). Is used as a dye for lacquer, varnish, wax products, oil stains and **styrene resins**. It is used in insecticides. It is also used as an intermediate in the manufacture of acid yellow, diazo dyes and indulines. It can also be found in yellow pigments and inks, including inks for inkjet printers. Further research may identify additional product or industrial usages of this chemical. http://www.dormer.com/Allergens/PDF/P_InfoEn/A-005.pdf	Medium	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
4-heptylphenol, branched and linear (4-HPbl)	6465-71-0, 6465-74-3, 6863-24-7, 1987-50-4, 72624-02-3, 1824346-00-0, 1139800-98-8, 911371-07-8, 911371-06-7, 911370-98-4, 861011-60-1, 861010-65-3, 857629-71-1, 854904-93-1, 854904-92-0, 102570-52-5, 100532-36-3, 72861-06-4, 71945-81-8, 37872-24-5, 33104-11-9, 30784-32-8, 30784-31-7, 30784-27-1, etc.	Usually used in lubricant additives in vehicles or machinery. https://echa.europa.eu/documents/10162/66ddc850-4255-445e-ad36-94c3d4d9aa5e	Low	No
4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	Carcinogenic (Article 57a). Used in making dyes for furs, textiles and hair, and as an intermediate in making polyurethanes. http://nj.gov/health/eoh/rtkweb/documents/fs/0613.pdf	Low	No
4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	-	Equivalent level of concern having probable serious effects to the environment (Article 57 f). Used as floating agent in mining applications; formulation and use of **paints;** emulsion **polymerisation;** and potentially as reducing agent in surface treatment), and professional and consumer uses of products such as paints. Are used in articles (e.g. when the article is painted with a **paint** that includes the substance). Not expected above 0.1% w/w in EEE. https://echa.europa.eu/documents/10162/ec3c30dc-b9c2-40ed-ac63-618981fc29e3	Medium	No
4-Nonylphenol, branched and linear, ethoxylated	-	In many industrial sectors, including industrial laundering, textile processing, pulp and paper processing, paint and resin formulation, oil and gas recovery, steel manufacturing, pest control and power generation. NPEs are also utilized in the production and formulation of many commercially sold products: as an industrial and commercial detergent, as an emulsifier in wax for fruit and vegetables, as a polymer resin in plastic food packaging and **polyethylene plastic**, in cosmetic products (such as skin cream, deodorant, makeup, hair dye, and shampoo), and even in spermicide. http://www.jcaa.org/news/references/Sierra%20Club%20a%20safer%20alternative%20nonylphenol_ethoxylates3%5B1%5D.pdf	Low	Yes
4-tert-butylphenol	98-54-4	Plasticizer. Industrial intermediate in some resins and plastics. Also used in insecticides and industrial perfumes. http://www.inchem.org/documents/sids/sids/98544.pdf	Medium	No
4-tert-pentylphenol (PTAP), p-(1,1-dimethylpropyl)phenol	80-46-6	Used in paints and varnishes and as printing ink resins. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/290845/scho0208bnqr-e-e.pdf	Low	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual isomers of [1] and [2] or any combination thereof]	117933-89-8, 343934-04-3, 343934-05-4, 676367-02-5, 676367-03-6, 676367-04-7, 676367-05-8, 676367-06-9, 676367-07-0, 676367-08-1, 676367-09-2, 186309-28-4, etc	vPvB (Article 57 e). Trade name Karanal is used as a fragrance agent, in soaps and detergents.	Low	Yes
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	vPvB (article 57e). Ingredient in fragrance compositions. https://echa.europa.eu/documents/10162/dc1a179e-699e-44c2-b4ad-371b9b89efab	Low	Yes
6-methoxy-m-toluidine (p-cresidine)	120-71-8	Carcinogenic (Article 57a). Is used exclusively as a synthetic chemical intermediate to produce azo dyes and pigments, such as FD&C red no. 40 and C.I. direct black 17, direct blue 67, direct blue 126, direct green 26, direct orange 34, direct orange 83, direct red 79, direct violet 51, direct yellow 41, disperse black 2, direct orange 72, and direct violet 9. The dyes made with p-cresidine have been produced commercially in the United States and are used in the food and textile industries https://ntp.niehs.nih.gov/ntp/roc/content/profiles/cresidine.pdf	Low	No
Acetic acid, lead salt, basic	51404-69-4	**Is a RoHS subtance.** Toxic for reproduction (Article 57 c). ph-regulators, flocculants, precipitants, neutralisation agents, **paints, coatings, thinners,** paint removers, fillers, putties and plasters. The sectors of use reported in the registrations include manufacture of chemicals, formulation and packaging of mixtures and **production of computer, electronic/optical products and electrical equipment**. https://www.qsartoolbox.org/documents/10162/3d3acd38-cf45-44a4-b1ee-a65e98e06848	Medium	No
Acids generated from chromium trioxide and their oligomers. Names of the acids and their oligomers: Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid.	13530-68-2, 7738-94-5	RoHS substances. Carcinogenic (article 57a). Metal finishing for electroplating e. g. hard chrome plating, decorative or bright-chrome plating, conversion coatings, e.g. passivation of zinc, aluminium, cadmium and brass, manufacture of wood preservation products, pigment manufacture, manufacture of paints, varnishes and inks putty (anticorrosive , dye), production of polyethylene and other plastics. Because of rinising or reduction processes these substances are not detectable in finished hardware products. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_germany_cmr_acids_cr-trioxide_en.pdf	Low	Yes
Acrylamide	79-06-1	Used in the production of polyacrylamides (flocculator) https://echa.europa.eu/documents/10162/50218bf9-ba0f-4254-a0d9-d577a5504ca7 http://enhs.umn.edu/current/5103/acryl/uses.html	Low	No
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins, SCCPs)	85535-84-8	PBT and vPvB (articles 57 d and 57 e). In metal working fluids (as an extreme pressure additive in metal working fluids), sealants, as **flame retardants** in **rubbers** and textiles, in leather processing and **in paints** and coatings. Also found multiple times **in plastic cables** https://echa.europa.eu/documents/10162/f343cb93-2c44-4f19-91e8-4c0730edf604	High	No
Aluminosilicate Refractory Ceramic Fibres <i> are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide	-	Carcinogenic (article 57 a). RCF is a high-temperature insulating fibre sold chiefly for industrial applications as insulation for industrial furnaces, pipes, ducts, and **cables,** as fire protection for buildings and industrial process equipment, as aircraft/aerospace heat shields, and in automotive uses, such as catalytic converters, metal reinforcements, **heat shields**, brake pads, and air bags. RCF is produced in the United States, Mexico, Canada, Brazil, Venezuela, South Africa, Australia, Japan, China, Korea, Malaysia, and Taiwan and several countries in Europe. https://echa.europa.eu/documents/10162/47c8a92c-8fb4-4b0f-85b8-64037ad542ad	Medium	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
and alkali earth oxide (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight</i>				
Ammonium dichromate	7789-09-5	Is a Cr6+ compound. Carcinogenic, mutagenic and toxic for reproduction (articles 57 a, 57 b and 57 c). Magnetic tape manufacture, catalyst manufacture, mordant in dyeing and pigment manufacture. Also used in cathode ray tude but below 0.1% w/w. https://echa.europa.eu/documents/10162/f5f958a9-8ec8-45ba-b30a-0d7a143b6a12	Low	Yes
Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	APFO is used as an emulsion stabilizer to manufacture polyvinylidine fluoride (PVDF) and other fluorinated polymers and elastomers and can be found in concentrations up to 1% w/w in **plastics.** Residues are suspected in several industries textile finishing, electroplating and paper. There are a number of products containing PFOA such as textiles, carpets, upholstery, paper, leather, toner, cleaning agents and carpet care solutions, sealants, floor waxes, paints, impregnating agents, **electrical wire insulation**, specialist **circuit boards**, **fire fighting foam** etc. https://echa.europa.eu/documents/10162/13638/annex_xv_svhc_ec_223-320-4_apfo_en.pdf	Medium	No
Anthracene	120-12-7	PBT (article 57d). Anthracene is used in the artificial production of the red dye alizarin. It is also used in wood preservatives, insecticides, and coating materials. Anthracene is colorless but exhibits a blue fluorescence under ultraviolet light. Plastics such as polyvinyltoluene can be doped with anthracene to produce a plastic scintillator. https://deq.mt.gov/Portals/112/Land/hazwaste/documents/Anthracene.pdf	Low	No
Anthracene oil	90640-80-5	Carcinogenic, PBT and vPvB (articles 57a, 57d and 57e). No uses known in electrical equipment. http://www.ecsn-uk.org/Legislation/REACH/7REACH-2nd%20batch%20SVHC%20Dec09v2.pdf	Low	Yes
Anthracene oil, anthracene paste	90640-81-6	Carcinogenic, mutagenic, PBT and vPvB (articles 57a, 57b, 57d and 57e) No uses known in electrical equipment. http://www.ecsn-uk.org/Legislation/REACH/7REACH-2nd%20batch%20SVHC%20Dec09v2.pdf	Low	No
Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	Carcinogenic, mutagenic, PBT and vPvB (articles 57a, 57b, 57d and 57e) No uses known in electrical equipment. http://www.ecsn-uk.org/Legislation/REACH/7REACH-2nd%20batch%20SVHC%20Dec09v2.pdf	Low	No
Anthracene oil, anthracene paste,distn. lights	91995-17-4	Carcinogenic, mutagenic, PBT and vPvB (articles 57a, 57b, 57d and 57e) No uses known in electrical equipment. http://www.ecsn-uk.org/Legislation/REACH/7REACH-2nd%20batch%20SVHC%20Dec09v2.pdf	Low	No
Anthracene oil, anthracene-low	90640-82-7	Carcinogenic, mutagenic, PBT and vPvB (articles 57a, 57b, 57d and 57e) No uses known in electrical equipment. http://www.ecsn-uk.org/Legislation/REACH/7REACH-2nd%20batch%20SVHC%20Dec09v2.pdf	Low	No
Arsenic acid	7778-39-4	Carcinogenic (article 57 a). Use as fining agent in the manufacture of **speciality glass**; Use in the production of copper foil for **printed circuit boards**. However arsenic acid decomposes during the manufacture processes. https://echa.europa.eu/documents/10162/b35abcbc-6a00-41d2-99c5-f3b3d389a4f0	Low	Yes
Benz[a]anthracene (BaA)	56-55-3, 1718-53-2	Carcinogenic (Article 57a). PBT (Article 57d). vPvB (Article 57e). Used in research laboratories. Found in coal tar, roasted coffee, smoked foods, domestic heating, automobile exhaust. Is also formed during chemical manufacturing. Traces may be found in plastics and rubber. http://nj.gov/health/eoh/rtkweb/documents/fs/0193.pdf	Low	No
Benzene-1,2,4-tricarboxylic acid 1,2 anhydride; trimellitic anhydride; TMA	552-30-7	Respiratory sensitising properties (Article 57(f) - human health). Used in the synthesis of plasticisers for PVC resins. Smaller amounts are used as a reactant in wire and cable insulation enamels and polyester resins for powder coatings. https://chemicalwatch.com/66110/eu-commission-identifies-tma-as-svhc	Medium	No
Benzo[def]chrysene	50-32-8	Carcinogenic (Article 57a), Mutagenic (Article 57b), Toxic for reproduction (Article 57c), PBT (Article 57 d), vPvB (Article 57 e). Production of substance by distillation of coal tar or as by-product, Use in carbon and graphite industry, Use in the aluminium industry, Use in electro-steel industry / in products in the metallurgic smelting industry, Formulation / end use of **adhesives, paints**, waterproof material, binder in asphalt industry, as fuel, for carbon black production, or for coke / briquette production. May be found in rubber or plastic components (banned use under Reach Annex XVII) https://echa.europa.eu/documents/10162/75eb6bd5-3375-4d68-854c-138fb87f0067	Medium	No
Benzo[ghi]perylene	191-24-2	PBT and vPvB (articles 57 d and 57 e). Only relatively small amounts of benzo(g,h,i)perylene are intentionally manufactured. It is extracted from coal tar to be used in dyes. It is also found (as part of a complex mixture of PAHs) in creosote, tar paints, waterproof membranes	Medium	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
		and other products (plastics, pesticides, explosives and drugs) http://apps.sepa.org.uk/spripa/pages/substanceinformation.aspx?pid=236 https://archive.epa.gov/epawaste/hazard/wastemin/web/pdf/benzoper.pdf		
Benzo[k]fluoranthene	207-08-9	Carcinogenic, PBT, vPvB. Is a polycyclic aromatic hydrocarbon (PAH) substance that is derived from coal or petroleum products and may be found in traces in rubber and plastics as well as carbon black, coatings, adhesives, road & construction applications and cleaning agents. https://echa.europa.eu/documents/10162/06cc1281-efd9-9845-0215-e6b0c94c94db	Low	No
Benzyl butyl phthalate (BBP)	85-68-7	**Is in the RoHS 10 substances list.** Toxic for reproduction (article 57c). Used as a plasticizer of **PVC** or **other polymers, adhesives (based on polyacrylics and polyvinylacetate), sealants and coating products paints (e.g based on polyurethane and polyacrylics)**, inks and lacquers. https://echa.europa.eu/documents/10162/bad5c928-93a5-4592-a4f6-e02c5e89c299	High	Yes
Biphenyl-4-ylamine	92-67-1	Carcinogenic (Article 57a). Because of its carcinogenic effects, 4-aminobiphenyl has not been produced commercially in the USA since the mid-1950s. It was used as a rubber antioxidant and a dye intermediate in the past. https://www.epa.gov/sites/production/files/2016-08/documents/4-aminobiphenyl.pdf	Low	No
Bis (2-ethylhexyl)phthalate (DEHP)	117-81-7	**Is part of EU RoHS 10 subtances list**. Toxic for reproduction (article 57c). Equivalent level of concern having probable serious effects to the environment. **Used as a plasticizer in polymers**, such as **PVC and and vinyl chloride resins.** https://www.epa.gov/sites/production/files/2016-09/documents/bis-2-ethylhexyl-phthalate.pdf	High	Yes
Bis(2-methoxyethyl) ether (Diglyme, DEGDME)	111-96-6	Toxic for reproduction (article 57 c). In the production of **plastic** and **rubber** products. in sealed **batteries** as solvent of **electrolytes.** In electronic coatings as specialty **thinner,** in **adhesives,** and in **syntactic foam for filling composite materials, paints**, as well as in the production of **semiconductor chips**, and in automotive care products, lacquers, diesel fuels, for photolithography. https://echa.europa.eu/documents/10162/4d548701-9a4a-4783-8129-8bb4a517cc8c	High	Yes
Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	Toxic for reproduction (article 57 c). **Plasticiser** in the production of **nitrocellulose, acetyl cellulose, polyvinyl acetate, polyvinyl chloride and polyvinylidene chloride** intended for contact with food or drink, cover floors, shoes (lacquers, varnishes). Was found in **personal communication products**. It is also used as a solvent. DMEP can improve the durability and toughness of cellulose acetate (e.g. in laminated documents and can be used in "enamelled wire, film, high-strength varnish and adhesive. It can also be used in pesticide products internationally. https://echa.europa.eu/documents/10162/38458518-7e1d-49ff-b53d-d07963c1bceb	Medium	Yes
Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	PBT (Article 57 d); vPvB (Article 57 e). Machinery, mechanical appliances, **electrical/electronic articles (Coating and inks application**) http://echa.europa.eu/documents/10162/0239f8aa-787b-42a5-aacc-62a34776f6c4	High	No
Bis(tributyltin)oxide (TBTO)	56-35-9	PBT (article 57d). Biocides, pesticides. Use in polyurethane foam, flooring, tiles and carpeting; back-coating of textiles. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_norway_pbt_tbto_20083006_en.pdf	Medium	No
Bisphenol A, 4,4'-(propane-2,2-diyl)diphenol	80-05-7	Used in the manufacture of polycarbonate plastic products and in **epoxy resins** (residues below 0.01%). Use in a variety of **PVC goods**, CDs AND DVDs. BPA is also used to develop dye in thermal paper. https://echa.europa.eu/chemicals-in-our-life/hot-topics/bisphenol-a https://www.vanderbend.nl/Files/5/17000/17605/Attachments/Product/11j69cq469zM36r8S7o0083dF4c97016.pdf	High	No
Boric acid	10043-35-3, 11113-50-1	Toxic for reproduction (article 57 c). Boric acid is used in industrial fluids – metalworking fluids, water treatment chemicals, fuel additives, welding, brazing, **soldering fluxes, paints and coatings**. This substance is also added in **metallurgy process** to prevent oxidation of metal surfaces. Boric acid is used to produce insulation, textile, **fiber glass** and borosilicate glass. Boric acid is **added to adhesives** derived from starch to achieve increased viscosity, quicker tack and better fluid properties. Boric acid makes long-lasting protection against wood destroying organisms therefore is the active substance in biocides. The enzyme stabilizing features of boric acid results in its addition to detergents, cosmetics and pharmaceuticals. Boric acid and other borates used in fertilizers deliver an essential micronutrient for plants. The substance is also used in photographic applications, laboratory chemicals, automotive lubricants and fluids. https://echa.europa.eu/documents/10162/13626/clh_report_boric_acid_en.pdf Reported use in polystyrene beads and PVC Hazardous substances in plastic materials, COWI in cooperation with Danish Technological Institute, 2013	Medium	No
Butyl 4-hydroxybenzoate	94-26-8	In cosmetics, personal care products, and pharmaceuticals Heat/pressure transfer fluid in closed systems	Low	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
		Transfer of chemicals, closed batch processing in synthesis or formulation, mixing in open batch processes, closed processes https://echa.europa.eu/documents/10162/4b52d00f-e629-5746-904c-64ef318c92a4		
Cadmium	7440-43-9	**Is a RoHS substance.** Cadmium is used as a **pigment in plastics,** as a **heat stabiliser**, in NiCd **Batteries,** in **alloys,** as a **plating** for plugs/connectors, contacts and **switches,** and in **optical glass** and filters. https://echa.europa.eu/documents/10162/13641/annex_xv_dossier_cd_in_plastics_en.pdf Hazardous substances in plastic materials, COWI in cooperation with Danish Technological Institute, 2013	High	No
Cadmium carbonate	513-78-0	**Is a RoHS Substance.** Carcinogenic (Article 57a). Mutagenic (Article 57b). Specific target organ toxicity after repeated exposure (Article 57(f) - human health). May be used in fungicides and in chemical reagents. http://nj.gov/health/eoh/rtkweb/documents/fs/4090.pdf	Low	No
Cadmium chloride	10108-64-2	**Is a RoHS substance.** Carcinogenic (Article 57a); Mutagenic (Article 57b); Toxic for reproduction (Article 57c); Equivalent level of concern having probable serious effects to human health (Article 57 f). Is not normally found in concentrations > 0.1% w/w in articles (e.g. parts, components, sub-assemblies etc) which are supplied for use in hardware products and electrical and electronic equipment. is used in the manufacture of fungicides, in deying and printing textiles and in metal finishing baths. http://nj.gov/health/eoh/rtkweb/documents/fs/0308.pdf	Low	No
Cadmium fluoride	7790-79-6	**Is a RoHS substance.** Carcinogenic (Article 57 a). Mutagenic (Article 57 b). Toxic for reproduction (Article 57 c). In research applications. In certain phosphorus for **luminescent screens**. Other uses are for **manufacturing of glass**, in nuclear reactor control, for electric brushes, high-temperature dry-film lubricant, **optical applications**, and as starting material for crystals for lacer. https://echa.europa.eu/documents/10162/21732369/annex_xv_svhc_ec_232-222-0_cadmium_fluoride_en.pdf	Medium	No
Cadmium hydroxide	21041-95-2	**Is a RoHS Substance.** Carcinogenic (Article 57a). Mutagenic (Article 57b). Specific target organ toxicity after repeated exposure (Article 57(f) - human health). Is found in industrial Nickel Cadmium storage batteries, and may be used in Cadmium plating and in arking Cadmium Salt. http://nj.gov/health/eoh/rtkweb/documents/fs/4089.pdf	High	No
Cadmium nitrate	10022-68-1, 10325-94-7	**Is a RoHS Substance.** Carcinogenic (Article 57a). Mutagenic (Article 57b). Specific target organ toxicity after repeated exposure (Article 57(f) - human health). Is used to give a reddish-yellow luster to glass and porcelain, in photographic emulsion and as a laboratory reagent. http://nj.gov/health/eoh/rtkweb/documents/fs/4088.pdf	Low	No
Cadmium oxide	1306-19-0	**Is a RoHS substance.** Cadmium oxide is used as a heat stabiliser, in high quality power switching contacts and relays, and as photoelectric applications. Used in **electroplating semi-conductors**, **metal alloys, and batteries**, as a catalyst, intermediate and vermicide, and in making **glass.** http://nj.gov/health/eoh/rtkweb/documents/fs/2200.pdf	High	No
Cadmium sulphate	10124-36-4; 31119-53-6	**Is a RoHS substance.** Carcinogenic (Article 57 a). Mutagenic (Article 57 b). Toxic for reproduction (Article 57 c). Used in Phospors and Glass. Uses Mainly used dyeing on cotton, also used dyeing on cambric, viscose and vinylon. Cadmium alloys are used as a control absorber and shield in nuclear reactors. Some cadmium compounds are used in batteries, semiconductors, and photoconductive cells. Cadmium sulfide photoconductive cell provides a high dark-light resistance ratio. Cadmium silver oxide cell is an alkaline-electrolyte cell which is used as a primary battery or a secondary-battery than can be rechargeable. Cadmium telluride is used in photoconductive cell which can be operated at ambient temperatures up to 400 C. It is used in solar cells and infrared, nuclear-radiation, and gamma-ray detectors. Cadmium selenide is a photoconductive and semiconductor material used in a cell where a fast response time and high sensitivity to longer wavelengths of light is required. Cadmium is used to produce luminous pigment and fluorescent pigment which absorb light energy and electromagnetic radiations and release visible light as energy of desired wavelength. The principal cadmium pigments are consisted of cadmium sulfides and sulfoselenides. Cadmium sulfide is responsible for yellow color and cadmium selenide is for red. cadmium pigments are used in the coloring of plastics and paints which hot temperature resistance is required. Cadmium is used in the production of various salts. However Cadmium shulphate is not exepected above 0.1% w/w in EEE articles or batteries. http://nj.gov/health/eoh/rtkweb/documents/fs/3073.pdf	Low	No
Cadmium sulphide	1306-23-6	**Is a RoHS substance.** Cadmium sulphide is used as a **yellow colorant in plastics, glass and ceramics**, and is found in photoelectric devices including **photoresistors,** solar cells and **piezoelectric transducers**. Is used in **photoconductors,** dandruff shampoos, **pigments, electronic components** and solar cells. http://nj.gov/health/eoh/rtkweb/documents/fs/3081.pdf	High	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
Calcium arsenate	7778-44-1	Carcinogenic (article 57 a). Herbicide, insecticide, molluscicide and fungicide. Weather-resistant wood treatment. http://nj.gov/health/eoh/rtkweb/documents/fs/0310.pdf	Low	No
Chromium trioxide	1333-82-0	Is a RoHS substance. Carcinogenic and mutagenic (articles 57 a and 57 b). Metal finishing, manufacture of wood preservation products, catalyst manufacture, chromium dioxide manufacture and pigment manufacture. However is used in water. Because of the rinsing processes, it is not detectable in articles. https://echa.europa.eu/documents/10162/f5f958a9-8ec8-45ba-b30a-0d7a143b6a12	Low	Yes
Chrysene (Benzo(a)phenanthrene)	218-01-9, 1719-03-5	Carcinogenic (Article 57a). PBT (Article 57d). vPvB (Article 57e). Chrysene is found in the coal tar pitch that industry uses to join electrical parts. Chrysen is also used in the manufacture of some dyes. It is also found in creosote, a chemical used to preserve wood. However, is it most often used as a by-product from imcomplete combustion and may be found in traces in rubber, plastics and black colourants. https://www.sciencedirect.com/topics/chemistry/chrysene	Medium	No
Cobalt dichloride	7646-79-9	Carcinogenic and toxic for reproduction (articles 57 a and 57 c). Cobalt-based pigments, additives and **drying agents in paints**. Catalyst/promoter in resins and plastics. Printing inks. Cobalt is present in magnets, welding rods (also in the smoke) and **welding stainless steel, glass,** lubricating oils and animal feeds. Cobalt is used in the **rubber tire** industry as an oxidizing agent in automobile exhaust control and as a catalyst or accelerator for the production of terephthalate, **polyester and acrylate plastics**. https://www.smartpractice.com/dermatologyallergy/pdfs/allergens/Cobalt-Dichloride.pdf	High	No
Cobalt(II) carbonate	513-79-1	Carcinogenic and toxic for reproduction (articles 57 a and 57 c). Use in the manufacture of other chemicals, as fertilisers, calcination/sintering process in the context of the manufacture/production of inorganic pigments & frits, glass, ceramic ware, surface treatment processes passivation / anti-corrosion electroplating / electroforming colour anodizing, catalyst, animal food supplement but is not detectable as a substance in EEE. https://echa.europa.eu/documents/10162/13640/backgroundoc_cobalt_carbonate_en.pdf	Low	No
Cobalt(II) diacetate	71-48-7	Carcinogenic and toxic for reproduction (articles 57 a and 57 c). Manufacture of catalysts, Hydrotreating; Oxidation catalyst; Hydrodesulphurisation; Fischer Tropsch (GTL), Surface treatment Alloys, Production of pigments, Dyes, Adhesion, Animal food supplement. But not detectable in finished products. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_netherlands_cmr_co-diacetate_en.pdf	Low	No
Cobalt(II) dinitrate	10141-05-6	Carcinogenic and toxic for reproduction (articles 57 a and 57 c). used in the manufacture of other chemicals including catalysts. Further applications may include surface treatment and in LiOn, NiCd and NiMH batteries. Is not detectable in theses finished produts. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_netherlands_cmr_co-dinitrate_en.pdf	Low	No
Cobalt(II) sulphate	10124-43-3	Carcinogenic and toxic for reproduction (articles 57 a and 57 c). Cobalt(II) sulphate is mentioned to be used in the manufacture of active substances for the production of batteries (it seems that production of batteries requires prior manufacture of another cobalt compound from cobalt(II) sulphate). This use concerns for example Li-ion and alkaline rechargeable (such as NiCd) batteries, which are used e.g. in the automotive market (HEV Vehicle and Electric Vehicle) and storage applications (for intermittent renewable energy generation; photovoltaic and wind). Surface treatment processes: Passivation / Anti-corrosion (e.g. conversion layers/coatings on automotive parts, aerospace, military, electrical etc.). Electroplating / Electroforming (e.g. technical / magnetic / decorative plating; application in aerospace, automotive, telecommunication, electronics, storage media, military, metal logos, buckles, medical technology . For colour anodizing, ceramic pigments, fusible glass pigment. Is not detectable in finished produts. https://www.echa.europa.eu/documents/10162/ef958831-f28c-47f1-b159-ab4a32b53b2f	Low	No
Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry]	85-42-7, 13149-00-3, 14166-21-3	Equivalent level of concern having probable serious effects to human health (Article 57 f). Used in the manufacture of polyester and alkyd resins and plasticizers for thermoplastic polymers. The anhydrides are also used as hardeners for epoxy resins and chain cross-linkers for thermoplastic polymers. For HHPA specific the following uses are identified: Manufacture of alkyd resins, plasticizers, insect repellents, rust inhibitors and as hardener in epoxy resins. Used as an intermediate and react to form other substances therefore are not detectable. https://www.echa.europa.eu/documents/10162/6a9bf645-3e36-4540-b9b8-48da3afb8245	Low	No
Decamethylcyclopentasiloxane; D5	541-02-6	PBT and vPvB (articles 57 d and 57 e). Intermediate in the production of PDMS polymers and a small number of commercial dry cleaners. Use in electronics applications, personal care products, nonmetal surface treatment, household care products, dry cleaning. https://www.dowcorning.com.cn/zh_CN/content/about/aboutehs/EHSPortalFiles/GPS_Safety_Report_541-02-6_D5.pdf;	High	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
		https://echa.europa.eu/documents/10162/29085596/20200305_annexXIV_recommendation_consultation.pdf/27400793-f191-261a-6e35-e03cabb39b41		
Diarsenic pentaoxide	1303-28-2	Carcinogenic (article 57a). Wood preservation, **glass**, intermediate. https://echa.europa.eu/documents/10162/13640/prioritisation_diarsenic_pentaoxide_en.pdf	Medium	Yes
Diarsenic trioxide	1327-53-3	Carcinogenic (article 57a). **Glass (tubes, bulbs, optical glass, LCD panels)** , wood preservation, paints enamels. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_france_cmr_trias_20083006_en.pdf https://www.qsartoolbox.org/documents/10162/dfb7745d-4e27-408f-89bb-3f44c97467e2	High	Yes
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	Equivalent level of concern having probable serious effects to human health (Article 57 f). Plastic articles (Parquet underlay material in short-roll form, Wallpaper) http://echa.europa.eu/documents/10162/04bb48dc-6b6a-4cab-abd6-6f3b3d8d744c	Low	No
Diboron trioxide	1303-86-2	Toxic for reproduction (Article 57 c). Glass Production, **Glass fibre**, Frits production, **Flame retardants, inks, paints, adhesive, crystal** growth. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_diboron_trioxide_en.pdf	High	No
Dibutyl phthalate (DBP)	84-74-2	**Is part of the RoHS 10 substances list.** Toxic for reproduction (article 57c). Used as a **plasticizer in polymers**, such as **PVC**. DBP can also be used as a gelling aid, as a solvent, as an antifoam agent or as a lubricant. https://echa.europa.eu/documents/10162/13641/dbp_echa_review_report_2010_6_en.pdf	High	Yes
Dibutylbis(pentane-2,4-dionato-O,O')tin	22673-19-4	In adhesives, sealants, coatings and paints, thinners, paint removers, paper, and board treatment products, dyes, finishing and impregnation products including bleaches and other processing aids, polymer preparations in production of resins and rubber, and textile dyes for the manufacture of textiles, leather, fur, wood and wood products, pulp, paper and paper products, rubber products, computer, electronic and optical products, electrical equipment, building & construction work and general manufacturing, e.g. machinery, equipment, vehicles, other transport equipment. https://echa.europa.eu/documents/10162/65690557-4271-c418-e139-538bfd00d1cd	High	No
Dibutyltin dichloride (DBTC)	683-18-1	Toxic for reproduction (Article 57 c). Industrial use as an additive for the production of rubber tyres, stabiliser in **PVC plastics** (water pipes, packing materials, textile products), catalyser in the production of polyurethanes and silicones, (foam plastics, glue/sealants), glass (coatings), **insulators in electronics and cables**, deworming agent for poultry, polyurethanes, transparent plastic use in insulations and coatings, medical equipment. https://www.echa.europa.eu/documents/10162/8a520ac1-f460-447f-9ac4-388768fe0784	High	No
Dichromium tris(chromate)	24613-89-6	Carcinogenic (article 57 a). Surface treatment of metals, industrial surface treatment of metals- reactive anti-corrosion primer for steel and aluminium. However, it is not detectable as a substance in finished parts. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_france_cmr_dichromium_tris_chromate_20110829_en.pdf	Low	Yes
Dicyclohexyl phthalate; DCHP	84-61-7	Toxic for reproduction (Article 57c) and Endocrine disrupting properties (Article 57(f) - human health). Plasticizer to modify the properties of synthetic resins (nitrocellulose, ethyl cellulose, chlorinated rubber, polyvinyl acetate, polyvinyl chloride, and other polymers resins). In paper finishes it makes printers ink water-resistant. Plasticiser for plastics and rubber, phlegmatiser for organic peroxides https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+5246 https://echa.europa.eu/documents/10162/13626/clh_report_dicyclohexyl_phthalate_en.pdf; https://echa.europa.eu/documents/10162/29085596/20200305_annexXIV_recommendation_consultation.pdf/27400793-f191-261a-6e35-e03cabb39b41	High	No
Diethyl sulphate	64-67-5	Carcinogenic (Article 57a); Mutagenic (Article 57b). Diethyl sulfate is an important chemical, used in the production of other commercial chemicals, detergents, dyes, agricultural chemicals, pharmaceuticals and a variety of other products. Diethyl sulfate is primarily used as an ethylating agent, and also as an accelerator in the sulfation of ethylene and in some sulfonations. (1,6) Diethyl sulfate is also a chemical intermediate for ethyl derivatives of phenols, amines, and thiols, and as an alkylating agent. https://www.epa.gov/sites/production/files/2016-09/documents/diethyl-sulfate.pdf http://apps.sepa.org.uk/spripa/Pages/SubstanceInformation.aspx?pid=40	Low	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
Dihexyl phthalate (DnHP)	84-75-3	Dihexyl phthalate (DnHP) is used as a **plasticiser in polyvinyl chloride PVC and other plastic polymers**. https://echa.europa.eu/documents/10162/0fc1bf32-1cd4-4294-a7fc-7ba778f78f13	High	Yes
Diisobutyl phthalate (DIBP)	84-69-5	**Is part of the RoHS 10 substances list**. Toxic for reproduction (article 57c). Used as a plasticizer (in **PVC**), for coating products, fillers, putties, plasters, modelling clay and polymers. It is used in nail polish, cosmetics, **lubricants,** floor carpets, tapestry, clothing treatments, rubber dentistry settings, as a fuel stabilizer, in leather varnishes and lacquers, as a concrete additive, as an **adjusting agent for lead chromate paint pigments**, explosive material, lacquer manufacturing, and methyl methacrylate applications. DiBP is also used in printing inks for paper and packaging. In Australia, DiBP is imported for use a plasticizer in the manufacture of PVC and **rubber** and as a component of industrial adhesives and catalyst systems for polypropylene and fiberglass manufacture. https://echa.europa.eu/documents/10162/c6781e1e-1128-45c2-bf48-8890876fa719	High	Yes
Diisohexyl phthalate (DIHP)	71850-09-4	Lubricant in steering fluid and plasticizers: auto transmission lubricants rubber, plastics products and others. https://echa.europa.eu/documents/10162/a062e3f3-80b9-4e90-9848-dd73c42764df	Medium	No
Diisopentylphthalate (DIPP)	605-50-5	Toxic for reproduction (Article 57 c). Propellants and explosives. Plasticiser **PVC.** http://echa.europa.eu/documents/10162/dda9f6bb-3803-453e-8e67-ef2918d75d50	High	Yes
Dimethyl sulphate (DMS)	77-78-1	Carcinogenic (Article 57a). Mainly used as a chemical intermediate, in the manufacturing of dyes, perfumes, pharmaceuticals, for the separation of mineral oils, and for the analysis of automobile fluids. https://echa.europa.eu/documents/10162/3d2e4243-8264-4d09-a4ab-92dde5abfadd	Low	No
Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	Toxic for reproduction (Article 57 c). Herbicide, insecticide. http://www.pic.int/Portals/5/DGDs/DGD_Dinoseb%20and%20salts%20and%20esters_EN.pdf	Low	No
Dioxobis(stearato)trilead	12578-12-0	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Professional use of **plastics (PVC processing, professional use of plastics)**. http://echa.europa.eu/documents/10162/38849185-8b5d-41ce-bc04-6e2e7944b33e	Medium	No
Dipentyl phthalate (DPP)	131-18-0	Dipentyl phthalate (DPP) is used as a **plasticiser in PVC and other plastic polymers**. https://echa.europa.eu/documents/10162/d55c182b-f063-4955-969d-5684584d17b2	Medium	Yes
Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	C.I. Direct Red 28 , also known as Congo Red, is used to color **plastics,** textiles, paper and PVA Polyvinyl acetate. https://echa.europa.eu/documents/10162/13640/ec_209-358-4_ci_direct_red_28_annex_xv_svhc_pub_en.pdf	Medium	No
Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38)	1937-37-7	C.I. Direct Black 38 is used to dye cellulose, wool, silk, bast, and hog's hair; print cellulose, wool and silk; dye leather, **plastics,** vegetable-ivory buttons and wood flour used as a resin filler; stain wool, silk, acetate, **nylon,** wood and biological materials, and produce aqueous inks. It has reportedly been used in hair dyes. https://echa.europa.eu/documents/10162/13640/ec_217-710-3_ci_direct_black_38_annex_xv_svhc_pub_en.pdf	Medium	No
Disodium octaborate	12008-41-2	Toxic for reproduction (Article 57c). Anti-freeze products, heat transfer fluids, lubricants and greases and washing & cleaning products (furniture, toys, construction materials, curtains, foot-wear, leather products, paper and cardboard products, electronic equipment, machine wash liquids/detergents, automotive care products, paints and coating or adhesives, fragrances and air fresheners, metal, wooden and plastic construction and building materials). This substance has an industrial use resulting in manufacture of another substance (use of intermediates). Coatings, paints, construction materials, adhesives, fertilisershttps://echa.europa.eu/substance-information/-/substanceinfo/100.031.388; https://echa.europa.eu/documents/10162/29085596/20200305_annexXIV_recommendation_consultation.pdf/27400793-f191-261a-6e35-e03cabb39b41	High	No
Disodium tetraborate, anhydrous (Borax)	1303-96-4, 1330-43-4, 12179-04-3	Toxic for reproduction (article 57 c). Wide-dispersiveness of uses: Micronutrient, **flame retardant**, complexing agent, stabiliser, corrosion inhibitor, **flux agent, lubricant**, buffering agent / pH-regulator, viscosity adjustor, oxidising agent, **metal surface cleaning**, etc. https://www.qsartoolbox.org/documents/10162/4a3e7046-abf0-4361-8a9a-28cb2227d480	High	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) covering any of its individual anti- and syn-isomers or any combination thereof	-	vPvB (Article 57e). Flame retardant in electronic wiring and cables, automobiles, hard plastic connectors and plastic roofing materials. Is an alternative for Decabromodiphenyl ether (DecaBDE). https://www.canada.ca/en/health-canada/services/chemical-substances/fact-sheets/chemicals-glance/declorane-plus.html	High	No
Dodecamethylcyclohexasiloxane, D6	540-97-6	PBT and vPvB (articles 57 d and 57 e). Electronic articles, nonmetal surface treatment. Washing & cleaning products, polishes and waxes and cosmetics and personal care products. Widespread uses. https://echa.europa.eu/substance-information/-/substanceinfo/100.007.967; https://echa.europa.eu/documents/10162/29085596/20200305_annexXIV_recommendation_consultation.pdf/27400793-f191-261a-6e35-e03cabb39b41	Low	No
Ethylenediamine; EDA	107-15-3	Respiratory sensitising properties (Article 57(f) - human health). Use in the production of fungicides, chelating agents, wet-strength resins, epoxy curing agents, polyamide resins, surfactants, softeners, corrosion inhibitors, lubricating oil and fuel additives, and asphalt emulsifiers. https://www.osha.gov/dts/sltc/methods/organic/org060/org060.html	Medium	No
Fatty acids, C16-18, lead salts	91031-62-8	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). PVC Processing. Professional use of plastics. **PVC** stabiliser. https://www.nicnas.gov.au/chemical-information/imap-assessments/imap-assessments/tier-ii-environment-assessments/lead-salts-of-long-chain-carboxylic-acids	Medium	No
Fluoranthene	206-44-0, 93951-69-0	PBT, vPvB. Is a polycyclic aromatic hydrocarbon (PAH) substance that is derived from coal or petroleum products and may be found in traces in rubber and plastics as well as carbon black, coatings, adhesives, road & construction applications and cleaning agents. https://echa.europa.eu/documents/10162/0d1ee6d4-1a47-0737-35c7-3503f0fca417 http://www.chemicalland21.com/specialtychem/finechem/FLUORANTHENE.htm	Low	No
Formaldehyde, oligomeric reaction products with aniline (Polymeric MDA, PMDA)	25214-70-4	Carcinogenic (article 57 a). Curing agent for polymers and hardener in epoxy resins and adhesives (e.g. pipes, moulds). However PMDA is reacted during the production process and not found in finished articles). https://www.echa.europa.eu/documents/10162/13640/draft_backgdoc_technical_mda_en.pdf	Low	Yes
Formamide	75-12-7	Toxic for reproduction (Article 57 c). For manufacture of sulfa drugs, other pharmaceuticals, herbicides, pesticides and the manufacture of hydrocyanic acid. It has been used as a softener for paper and fiber. It is a solvent for many ionic compounds. It has also been used as a solvent for resins and plasticizers. http://www.chemicalsubstanceschimiques.gc.ca/challenge-defi/summary-sommaire/batch-lot-5/75-12-7-eng.php	Low	No
Furan	110-00-9	Carcinogenic (Article 57a). Furan is used primarily as an intermediate in the synthesis and production of tetrahydrofuran, pyrrole, and thiophene. Hydrogenation of furan over a nickel catalyst produces high yields of tetrahydrofuran and is a source of commercial tetrahydrofuran. Furan is also used in the formation of lacquers, as a solvent for resins, and in the production of agricultural chemicals, stabilizers, and pharmaceuticals. No expected in EEE. https://www.fda.gov/ohrms/dockets/ac/04/briefing/4045b2_07_NAS%20furan%20report.pdf	Low	No
Henicosafluoroundecanoic acid	2058-94-8	vPvB (Article 57 e). Used in the production of fluoropolymers (e.g. **teflon)** and Fluorotelomers and as additives and components in consumer and industrial products (paints, inks, coatings). Should not be present above 0.1% w/w per EEE article. https://echa.europa.eu/documents/10162/13638/SVHC_ACCHECK_AXVREP_pub_218-165-4_Henicosafluoroundecanoic_acid_en.pdf	Low	No
Heptacosafluorotetradecanoic acid	376-06-7	vPvB (Article 57 e). In the production of fluoropolymers and fluorotelomers and as additives and components in consumer and industrial products (paints, inks, coatings). Should not be present above 0.1% w/w per EEE article. https://www.echa.europa.eu/documents/10162/bd9c539e-19e0-4f67-a31a-0a6f5e8c9b8d	Low	No
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified: Alpha-hexabromocyclododecane Beta-hexabromocyclododecane Gamma-hexabromocyclododecane	25637-99-4, 3194-55-6 (134237-50-6)	PBT (article 57d). Brominated flame retardant used in Expanded Polystyrene (EPS), Extruded Polystyrene (XPS), High Impact Polystyrene (HIPS), Polymer dispersion for textiles. https://echa.europa.eu/documents/10162/13640/tech_rep_hbcdd_en.pdf	Medium	Yes

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
	(134237-51-7) (134237-52-8)			
Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	19438-60-9, 25550-51-0, 48122-14-1, 57110-29-9	Equivalent level of concern having probable serious effects to human health (Article 57 f). Mainly used in in the manufacture of polyester and alkyd resins and plasticizers for thermoplastic polymers. The anhydrides are also used as hardeners for epoxy resins and chain cross-linkers for thermoplastic polymers. electric and electronics field (curing agent for epoxy resin, sealing semiconductors, insultaors, capcitors, LED light emitting diodes, digital displays...). Used as an intermediate and are reacted to form other substances, therefore are not detectable. https://www.echa.europa.eu/documents/10162/96184c0e-245a-49a2-8a69-691e156dbaf7	Low	No
Hydrazine	302-01-2, 7803-57-8	Carcinogenic (article 57a). Intermediate in the production of agricultural chemicals such as maleic hydrazide, in the manufacture of chemical blowing agents which are used in the production of plastics such as vinyl flooring and automotive foam cushioning, as a corrosion inhibitor and water treatment agent, as a rocket propellant, and, to a lesser extent, as a reducing agent, in nuclear fuel reprocessing, as a polymerization catalyst, as a scavenger for gases. https://www.atsdr.cdc.gov/toxprofiles/tp100-c4.pdf	Low	No
Imidazolidine-2-thione	96-45-7	Elastomer accelerator; **chlorinated polyethylene (CPE) rubber** vulcanizing accelerator agent. http://www.chemicalbook.com/ChemicalProductProperty_EN_CB8102852.htm	Medium	No
Lead	7439-92-1	Toxic for reproduction (Article 57c). **Is a EU RoHS substance.** Many applications including in the electrical and electronic equipment.	High	No
Lead bis(tetrafluoroborate)	13814-96-5	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Is mostly used in a water solution. It is used in **electroplating,** and as a curing agent and catalyst. http://nj.gov/health/eoh/rtkweb/documents/fs/1105.pdf	Low	No
Lead chromate	7758-97-6	**Is a RoHS substance.** Carcinogenic and toxic for reproduction (articles 57 a and 57 c). paints, non-consumer **paints** and **coatings,** printing inks, **vinyl** and cellulose acetate plastics, **rubber and plastic**, alkyl resin enamels. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_france_cmr_lead_chromate_sulfate_red_20090831_en.pdf	Medium	Yes
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	**Is a RoHS substance.** Carcinogenic and toxic for reproduction (articles 57 a and 57 c). **Paints and coating**. Industrial paints using lead chromate pigments include automotive finishes, industrial and agricultural equipment, industrial baking enamels and air-dried finishes. https://www.ec.gc.ca/ese-ees/7B993FCF-F4B5-4C6F-885E-61EFD1BB2F8B/batch2_12656-85-8_en.pdf	Medium	Yes
Lead cyanamidate	20837-86-9	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Cyanamide is used in the production of other chemicals, as a fertiliser and as a plant growth regulator, in detergents, as a paper preservative, in photographic chemicals and in some pharmaceuticals. It is also added to textiles (to reduce creases and make them fire proof), to **synthetic rubbers**, to cements, is used as a **metal cleaner or lubricant** and in the refining of ores. http://apps.sepa.org.uk/spripa/Pages/SubstanceInformation.aspx?pid=31	Medium	No
Lead di(acetate)	301-04-2	**Is a RoHS substance.** Coatings and paints, thinners, paint removes, Fillers, putties, plasters, modelling clay, Intermediate. https://echa.europa.eu/documents/10162/13640/ec_206-104-4_lead+diacetate_annex_xv_svhc_pub.pdf	Low	No
Lead diazide, Lead azide	13424-46-9	**Is a RoHS substance.** Toxic for reproduction (article 57 c). Initiator or booster in detonators used for both civilian and military uses, initiator in pyrotechnic devices used in military munitions (fuzes) and space shuttles/satellites. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_echa_cmr_lead_diazide_20110829_en.pdf	Low	No
Lead dinitrate	10099-74-8	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Used in making matches and explosives. In the dye and photography industries, and in process engraving. http://nj.gov/health/eoh/rtkweb/documents/fs/1108.pdf	Low	No
Lead dipicrate	6477-64-1	**Is a RoHS substance**. Toxic for reproduction (article 57 c). Explosives. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_echa_cmr_lead_dipicrate_20110829_en.pdf	Low	No
Lead hydrogen arsenate	7784-40-9	**Is a RoHS substance**. Carcinogenic and toxic for reproduction (articles 57 a and 57 c). Used to kill insects, weeds and rodents. http://nj.gov/health/eoh/rtkweb/documents/fs/1098.pdf	Low	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
Lead monoxide (lead oxide)	1317-36-8	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Consumer use of sealed lead **batteries.** Professional use of batteries. Nut not detectable as a substance in batteries. Professional use of ceramics (including technical ceramics). Consumer use of **rubber protection**. Machinery, mechanical appliances, electrical/**electronic articles** (computer monitors and other devices containing cathode ray tubes). However, no lead monoxide should be expected in finished articles. http://echa.europa.eu/documents/10162/de860512-db1d-426d-8bb6-51e8108c6274	Medium	No
Lead oxide sulfate	12036-76-9	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Used to make other chemicals. Use: in lithography, **battery acid** solution treated fabrics, used in varnishes. https://pubchem.ncbi.nlm.nih.gov/compound/Lead_II__sulfate#section=Top	Medium	No
Lead styphnate - Lead 2,4,6-trinitro-m-phenylene dioxide	15245-44-0	**Is a RoHS substance.** Toxic for reproduction (article 57 c). Military use. munition pyrotechnics, powder actuated devices and detonators. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_echa_cmr_lead_styphnate_20110829_en.pdf	Low	No
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	**Is a RoHS substance.** Carcinogenic and toxic for reproduction (articles 57 a and 57 c). **plastics colouring** and painting/**coatings**. Printing ink. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_france_cmr_lead_sulfochromate_yellow_20090831_en.pdf	Medium	Yes
Lead titanium trioxide	12060-00-3	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Machinery, **mechanical appliances, electrical/ electronic articles** http://echa.europa.eu/documents/10162/783da20b-44ad-4b01-b729-1c75d1098a1d	High	No
Lead titanium zirconium oxide	12626-81-2	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Machinery, mechanical appliances, **electrical/electronic articles. Processing into electro-ceramic components.** http://echa.europa.eu/documents/10162/bd91c829-6576-483d-a4a1-d2d502c8a795	High	No
Lead(II) bis(methanesulfonate)	17570-76-2	Is a RoHS substance. Toxic for reproduction (Article 57 c). Mainly used in plating processes (both electrolytic and electroless) for electronic components (such as printed circuit boards). The substance seems to also be used for batteries in special applications. Is removed from finished articles during wanshing and cleaning processes. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_lead_methanesulfonate_en.pdf	Low	No
Methoxyacetic acid	625-45-6	Toxic for reproduction (Article 57 c). manufacture of chemicals and chemicals products, service to buildings and landscape activities, and category cleaning/washing agents. Other uses with low tonnage but several preparations included manufacture of food products, specialised construction activities, trade and repair of motor vehicles, and manufacture of fabricated metal product. https://www.echa.europa.eu/documents/10162/d7ad3263-83ac-4567-8fee-1a62406c51d2	Low	No
Methyloxirane (Propylene oxide)	75-56-9	Carcinogenic (Article 57a); Mutagenic (Article 57b). Propylene oxide is used in three areas: as a monomer in polymer production; as an intermediate in the synthesis of other substances; and as a stabiliser for dichloromethane. The last of these accounts for only a small proportion of the tonnage used. http://echa.europa.eu/documents/10162/c9918161-1be3-4b76-9088-72eaee9cfaca	Low	No
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	Carcinogenic (Article 57a). Intermediate in the **manufacture of dyes and pigments**, including Methylene red, C.I. Basic **Yellow** 2, Basic Orange 14, Solvent **Orange** 15, and Solvent Yellow 34. Is not expected in concentrations above 0.1% w/w/ in articles. https://echa.europa.eu/documents/10162/13638/svhc_axvrep_michlers_base_pub_en.pdf	Low	No
N,N-dimethylacetamide (DMAC)	127-19-5	Toxic for reproduction (article 57 c). The substance is mainly used for **polymer** dissolution in the man-made fibre production industry (textiles): acrylic, polyurethanes, meta-aramid fibres. This chemical or product is generally used in the following manner: - In the preparation of chemical formulas for industrial applications (**polyimide chemicals**, **photo-resist compounds**) , - In the manufacture of another chemical substance (used as intermediate e.g pharmaceutical intermediates), - Uses as a solvent in industrial processes. http://www.inchem.org/documents/sids/sids/127-19-5.pdf	Medium	No
N,N-dimethylformamide	68-12-02	Toxic for reproduction (Article 57 c). The primary use of dimethylformamide is as a **solvent with low evaporation rate**. DMF is used **in the production of acrylic fibers and plastics**. It is also used as a solvent in peptide coupling for pharmaceuticals, in the development and production of pesticides, and in the manufacture of **adhesives,** synthetic leathers, fibers, films, and **surface coatings. It is also used as a solvent in condensators.** https://www.epa.gov/sites/production/files/2016-09/documents/n-n-dimethylformamide.pdf	Medium	No
Nitrobenzene	98-95-3	One of the major uses for nitrobenzene is for the production of aniline, which is a chemical intermediate used during the manufacture of polyurethane. Nitrobenzene is also used industrially in the manufacture of some pharmaceuticals, dyes and **rubbers,** as a constituent in some polishes and paint solvents and as a solvent in the refining of petroleum. Exposure of the general public to nitrobenzene is	Low	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
		extremely unlikely as it is not commonly used in the home in substantial quantities. The most common source of exposure to considerable amounts of nitrobenzene is in the workplace, either where it is produced, or during the production of other materials. Therefore Nitrobenzene should not be expected above 0.1% w/w in EEE articles. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/338241/hpa_nitrobenzene_general_information_v1.pdf		
N-methylacetamide	79-16-3	Toxic for reproduction (Article 57 c). Chemical intermediate for the production of pesticide. https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+94	Low	No
N-pentyl-isopentylphthalate	776297-69-9	Toxic for reproduction (Article 57 c). Can be used as plasticizers in **plastic** material. https://www.echa.europa.eu/documents/10162/48f63323-2ed7-453b-b1ca-c42987d0453f	Medium	Yes
o-aminoazotoluene	97-56-3	Carcinogenic (Article 57a). In the manufacture of pigments and for coloring oils, fats, and waxes, such as shoe and other wax polishes. It is also used as a chemical intermediate for the production of the dyes. https://oehha.ca.gov/chemicals/o-aminoazotoluene	Low	No
Octamethylcyclotetrasiloxane, D4	556-67-2	PBT and vPvB (articles 57 d and 57 e). Is used in electronic articles, in nonmetal surface treatment and the manufacture of silicone polymers and copolymers. Is also used in personal care products, such as hair and skin care products and antiperspirants and reported for use as a defoamer, in antiflatulance drugs, as a formulation component of personal care products for hair and skin care, antiperspirants and deodorants, biomedical uses, lubricants, polishes and coatings on a range of substrates including textile, carpeting and paper, sealants, mechanical heat transfer and dielectric fluids and reprography. Silicone polymers that contain D4 are also used in the production of elastomers that are used in biomedical applications, sealants and adhesives, moulded silicone rubber, film and fabric coating and encapsulation. https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/publications/consultation-document-octamethylcyclotetrasiloxane/chapter-3.html; https://echa.europa.eu/documents/10162/29085596/20200305_annexXIV_recommendation_consultation.pdf/27400793-f191-261a-6e35-e03cabb39b41	High	No
Orange lead (lead tetroxide)	1314-41-6	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Consumer use of sealed **batteries.** Professional use of **batteries.** Professional use of **ceramics** (including technical ceramics). Consumer use of **rubber protection**. Machinery, mechanical appliances, electrical / **electronic articles** (computer monitors and other devices containing cathode ray tubes) http://echa.europa.eu/documents/10162/ebdb64d6-1d03-45d6-b6e1-af5eb4befaa9	High	No
o-Toluidine	95-53-4	Carcinogenic (Article 57a). In herbicides, **rubber chemicals, dye and pigment** intermediates, **resin hardeners**, fungicide intermediates, pharmaceutical intermediates, and others. However, shoud not be expected above 0.1% w/w in supplied articles. http://www.inchem.org/documents/sids/sids/95534.pdf	Medium	No
Pentacosafluorotridecanoic acid	72629-94-8	vPvB (Article 57 e). Used as polymerization aids in the production of fluoropolymers (e.g Teflon) and fluoroelastomers. and polyvinylidene fluoride, which are used in paints, inks and coating in various sectors, including the automotive, **electronics,** construction and aerospace industries. However, it should be be present above 0.1% w/w in EEE articles. http://www.ec.gc.ca/ese-ees/default.asp?lang=En&n=451C95ED-1	Low	No
Pentadecafluorooctanoic acid (PFOA)	335-67-1	**PFOA (Teflon) is a SVHC ans restricted under the REACh annex XVII, and a POP susbtance.** Insulators, solder sleeves, use in various mechanical components (e.g. semiconductors, wiring, tubing, piping, seals, gaskets, cables, working fluids in mechanical vacuum pumps). Raw material for components such as low-friction bearings & seals, lubricants. Active ingredient in ant baits, enhancers in pesticide formulations. Cable & wiring coating for weathering, flame and soil resistance. Additives in paints and coatings. Film to cover solar collectors due to eatherability. Raw materials for fire-fighting equipment, including protective clothing; fuel repellents for fluoroprotein (FP) foam stabilizers. Wetting agent or surfactant in floor polishes and cleaning agents. Surgical patches cardiovascular grafts, raw material for implants in the human body; stainand water-repellents for surgical drapes and gowns. Photographic and imaging industry. Paper and packaging oil and grease repellent. Skiing wax. Possible exemption for semiconductors. PFOA is a SVHC. https://echa.europa.eu/documents/10162/e9cddee6-3164-473d-b590-8fcf9caa50e7	High	No
Pentalead tetraoxide sulphate	12065-90-6	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Professional use of **plastics (PVC), used in lead batteries.** http://echa.europa.eu/documents/10162/412cfcbd-1ce3-4663-9105-69efbceac538	Medium	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
Pentazinc chromate octahydroxide	49663-84-5	Carcinogenic (article 57 a). the substance is used in the aerospace sector as an anti-corrosion agent for the formulation of primers and jointing compounds (sealants). It is also used in anti-corrosion primers, in fillers and sealants for the construction and maintenance of vehicles. https://www.qsartoolbox.org/documents/10162/321d2646-e065-427e-b0c2-613196891ac2	Low	Yes
Perfluorinated chemical PFDA (nonadecafluorodecanoic acid) and its sodium and ammonium salts	335-76-2, 3108-42-7, 3830-45-3	Lubricant, wetting agent, plasticizer and corrosion inhibitor. May be found in PVDF (Polyvinylidene fluoride) plastic up to 1% w/w of the plastic (PFVD can be found as an insulator for premium wire, in the chemical, semiconductor, medical and defense industries, as well as in lithium-ion batteries). applications. https://echa.europa.eu/documents/10162/13626/clh_report_pfda_en.pdf	Medium	No
Perfluorobutane sulfonic acid (PFBS) and its salts	-	Used as surfactants and repellents (for leather, textile, carpets etc.). Additional applications include: flame retardants in polycarbonate. Used mainly in electrical and electronic equipment, metal plating and pesticides. https://www.miljodirektoratet.no/globalassets/publikasjoner/M759/M759.pdf	High	No
Perfluorohexane-1-sulfonic acid and its salts (PFHxS)	355-46-4	May be used as a plasticiser, lubricant, surfactant, wetting agent, corrosion inhibitor and in fire-fighting foams. Is found as an impurity or a replacement of PFOS (Perfluorooctanesulfonic acid) and used in **electronic parts** (semiconductors), **metal plating**, medical equipment, textile, fire fighting foam, paint. https://echa.europa.eu/documents/10162/40a82ea7-dcd2-5e6f-9bff-6504c7a226c5	High	No
Perfluorononan-1-oic acid (PNFA) and its sodium and ammonium salts (group entry)	375-95-1, 21049-39-8, 4149-60-4	Processing aid for fluoropolymer (e.g. teflon) manufacture/lubricating oil additive/surfactant for fire extinguishers/cleaning agent/textile antifouling finishing agent/polishing surfactant/waterproofing agents and in **liquid crystal display panels**. https://echa.europa.eu/documents/10162/53f4c0a1-3c36-480a-9114-4d239a8e1f98	High	No
Phenanthrene	85-01-08	vPvB. Is a polycyclic aromatic hydrocarbon (PAH) substance that derived from coal or petroleum products and may be found in dyes, pesticides, explosives and drugs and in traces in plastics, in coatings, paints, road & construction applications as well as lubricants and cleaning agents. https://archive.epa.gov/epawaste/hazard/wastemin/web/pdf/phenanth.pdf	Low	No
Phenolphthalein	77-09-8	Carcinogenic (article 57 a). Ph indicator, laxative. https://faculty.missouri.edu/~glaserr/3700s11/SW11A06_Bronze1.pdf	Low	No
Pitch, coal tar, high temp.	65996-93-2	Carcinogenic, PBT and vPvB (articles 57a, 57d and 57e). Binding agent in the production of **carbon electrodes, anodes** and Søderberg electrodes for instance for the aluminium industry (electric arc furnaces). It is also used as a binding agent for refractories, clay pigeons, active carbon, coal briquetting, road construction and roofing. https://echa.europa.eu/documents/10162/13630/trd_rar_env_netherlands_pitch_en.pdf	Low	Yes
Potassium chromate	7789-00-6	Carcinogenic and mutagenic (articles 57 a and 57 b). Metal surface treatment in electroplating (chrome plating) and conversion coatings (passivating and anodizing), passivation process alumunium). However, no detection of the surface of the treated parts. https://www.qsartoolbox.org/documents/10162/02c71a8d-8fc9-4eda-8551-d82e8bf5725d	Low	Yes
Potassium dichromate	7778-50-9	Is a RoHS Cr6+ compound. Carcinogenic, mutagenic and toxic for reproduction (articles 57 a, 57 b and 57 c). Pigment manufacture, manufacture of wood preservation products, dye manufacture, catalyst manufacture, chromium metal manufacture and colouring agent in ceramics. https://echa.europa.eu/documents/10162/f5f958a9-8ec8-45ba-b30a-0d7a143b6a12	Low	Yes
Potassium hydroxyoctaoxodizincatedichromate	11103-86-9	Carcinogenic (article 57 a). Anti-corrosion agent for the formulation of primers and it is further used in jointing compounds (sealants). fleet and commercial vehicles, heavy duty vehicles and trucks, military vehicles and agricultural equipment (excluding personal vehicles). https://echa.europa.eu/documents/10162/13640/svhc_axvrep_france_cmr_potassium_hydroxyoctaoxodizinccatedichromate_20110829_en.pdf	Low	Yes
Pyrene	129-00-0, 1718-52-1	PBT, vPvB. Is a polycyclic aromatic hydrocarbon (PAH) substance that is derived from coal or petroleum products and may be found in traces in rubber and plastics as well as coatings, paints, road & construction applications, lubricants as well as cleaning agents. https://echa.europa.eu/documents/10162/47121daf-04a7-6d4a-b0b6-595794d3e66c	Low	No
Pyrochlore, antimony lead yellow	8012-00-8	**Is a RoHS Cr6+ compound.** Toxic for reproduction (Article 57 c). Main use of the substance is industrial use in **inks** and **ceramics** decorating. Is used in articles (colouring agent and pigment in **ceramic and glass articles**). However, it appears that the release of the substance from these articles might be negligible. https://www.qsartoolbox.org/documents/10162/366617d1-7f71-4159-95cc-c9f00181d7e3 http://echa.europa.eu/documents/10162/a2f9bf5c-7e4b-4a2b-bdbe-a7f35cdcdd57	Medium	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
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)	-	The reaction mass DOTE:MOTE is used in the production of **PVC as heat stabiliser** as PVC is thermally unstable. DOTE:MOTE reaction mass is present in various different consumer products (**packaging**, credit card, plastic pipes, windows, **bags,** bottles, toys, **electric articles**, textiles...) applied for the production of rigid **PVC films and sheets**. Toxic for reproduction (Article 57 c). https://echa.europa.eu/documents/10162/21732369/annex_xv_svhc_dote_mote_reaction_mass_en.pdf	High	No
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 (4-HPbl)	-	Endocrine disrupting properties (Article 57(f) - environment). Used as additive in lubricants and greases.	Low	No
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); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	68784-75-8	Toxic for reproduction (Article 57 c). Used for coating glass lamp bulbs. http://echa.europa.eu/documents/10162/f96c1234-b6d7-4266-bc4f-b457f136dad9	Low	No
Silicic acid, lead salt	11120-22-2	Is a RoHS substance. Toxic for reproduction (Article 57 c). Stone, plaster, cement, glass and ceramic articles. However, it is not detectable as a substance in concentrations > 0.1% w/w in articles for use in hardware and EEE. http://echa.europa.eu/documents/10162/810c9e90-7cbb-4fd8-9a0e-e0df37b328fb	Low	No
Sodium chromate	7775-11-3	**Is a RoHS Cr6+ compound.** Carcinogenic, mutagenic and toxic for reproduction (articles 57 a, 57 b and 57 c). Manufacture of other chromium compounds. However, the metal finishing processes are followed by several rinsing processes to remove excess process solution from the surface of the treated article. https://echa.europa.eu/documents/10162/f5f958a9-8ec8-45ba-b30a-0d7a143b6a12	Low	Yes
Sodium dichromate	7789-12-0, 10588-01-9	**Is a RoHS Cr6+ compound.** Carcinogenic, mutagenic and toxic for reproduction (articles 57a, 57b and 57c) **manufacture of other chromium compounds,** manufacture of wood preservation products, vitamin K manufacture, mordant in **dyeing,** wax manufacture and **metal finishing**. https://echa.europa.eu/documents/10162/f5f958a9-8ec8-45ba-b30a-0d7a143b6a12	Medium	Yes
Sodium perborate; perboric acid, sodium salt	-	Toxic for reproduction (Article 57 c). Is not normally found in concentrations > 0.1% w/w in articles (e.g. parts, components, sub-assemblies etc) which are supplied for use in hardware products and electrical and electronic equipment. Only used in chemical preparations such as bleaching agents, cleaning agents and cosmetic products. No use of PBSs in articles has been identified. https://www.echa.europa.eu/documents/10162/21636556/annex_xv_svhc_ec_239-172-9_234-390-0_sodium_perborate_en.pdf	Low	Yes
Sodium peroxometaborate	7632-04-4	Toxic for reproduction (Article 57 c). Is not normally found in concentrations > 0.1% w/w in articles (e.g. parts, components, sub-assemblies etc) which are supplied for use in hardware products and electrical and electronic equipment. http://www.csst.qc.ca/prevention/reptox/Pages/fiche-complete.aspx?no_produit=261768	Low	Yes
Strontium chromate	7789-06-2	Carcinogenic (article 57a). coil coated galvanised steel (for the protection of steel and zinc) is mainly used in buildings (for wall cladding or roofing). Strontium chromate is also used in much smaller quantities in primers, sealants, jointing compounds and top coat paints for aerospace applications but also in anti-corrosion primers, in fillers and sealants for the construction and maintenance of vehicles (such as heavy duty vehicles and trucks, military vehicles and agricultural equipment (excluding personal vehicles)). http://op.bna.com.s3.amazonaws.com/env.nsf/r%3FOpen%3Dprio-9n8mqw	Low	Yes
Sulfurous acid, lead salt, dibasic	62229-08-7	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Professional use of **plastics. PVC** Processing. https://echa.europa.eu/documents/10162/4f7c2595-d36c-43a7-9791-c7be5feaae9d	Medium	No
Terphenyl, hydrogenated	61788-32-7	vPvB (Article 57e). Can be found in metal, wooden and plastic construction and building materials, in flooring, furniture, toys, construction materials, curtains, foot-wear, leather products, paper and cardboard products, electronic equipment and in food packaging and storage, toys, mobile phones, coating products, adhesives and sealants, fillers, putties, plasters, modelling clay, polymers and laboratory chemicals. Heat transfer fluids, adhesives, sealants, coating, paints https://echa.europa.eu/substance-information/-/substanceinfo/100.057.225;	High	No

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
		https://echa.europa.eu/documents/10162/29085596/20200305_annexXIV_recommendation_consultation.pdf/27400793-f191-261a-6e35-e03cabb39b41		
Tetraboron disodium heptaoxide, hydrate	12267-73-1	Toxic for reproduction (article 57 c). Used in nuclear power plants, and more specifically in boiling water reactors together with boric acid. The function of tetraboron disodium heptaoxide, hydrate is as a preservative agent for the respective closed cooling systems. Used **in cleaning solutions and alkaline degreasing baths**. https://echa.europa.eu/documents/10162/46eaa3d4-8e85-455a-a17c-13881df5aa0b	Medium	No
Tetraethyllead (TEL)	78-00-2	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Used as anti-know additive in gasoline. http://nj.gov/health/eoh/rtkweb/documents/fs/1817.pdf	Low	No
Tetralead trioxide sulphate	12202-17-4	**Is a RoHS substance**. Toxic for reproduction (Article 57 c). The main uses of tetralead trioxide sulphate appear to be the use **in lead battery** production and the use **in stabilisers production and PVC processing**. The uses in the production of coatings and inks, the application of coatings and inks for mirror backing and the use as an industrial reactant appear to be less significant in terms of tonnages. https://echa.europa.eu/documents/10162/829de684-0a88-498a-95be-9c1cc68a88c4	Medium	No
Trichloroethylene	79-01-6	Carcinogenic (article 57 a). Major use of trichloroethylene is for vapour degreasing and **cleaning of metal parts**. It is also used in **adhesives,** for synthesis in the chemical industry and as a **solvent** for various products, including insecticides and waxes. It is (or has been) used in the leather and textile processing industries and in the **paint,** lacquers and varnishes industry. Trichloroethylene evaporates at a relatively fast rate at room temperature (no detections in hardware products). https://echa.europa.eu/documents/10162/83f0c99f-f687-4cdf-a64b-514f1e26fdc0	Low	Yes
Tricosafluorododecanoic acid	307-55-1	vPvB (Article 57 e). Used in production of fluoropolymers (e.g teflon) and fluorotelomers and as additive. Should not be present above 0.1% w/w of EEE articles. https://www.echa.europa.eu/documents/10162/84bc1dc7-3898-449f-ba44-c20a56ea5452	Low	No
Triethyl arsenate	15606-95-8	Carcinogenic (article 57a). Doping applications in fabricating **semiconductor devices**. Arsenic is an n-type dopant (donor) in silicon. However, The triethyl arsenate is fully reacted during the manufacturing process. https://echa.europa.eu/documents/10162/13640/triethyl_arsenate_en.pdf	Low	No
Trilead bis(carbonate)dihydroxide	1319-46-6	**Is a RoHS substance.** Toxic for reproduction (Article 57 c). Preparation of Positive Temperature Coeffient (PCT) **Ceramic** Materials. http://echa.europa.eu/documents/10162/cf4ed905-0f2f-47e5-978a-7a9bfb06595a	Medium	No
Trilead diarsenate	3687-31-8	**Is a RoHS substance**. Carcinogenic and toxic for reproduction (articles 57 a and 57 c). Found as an arsenic imputity in the manufacture of metal for the **opto-electronics** industry, industrial application of special glass/**crystal**. Is not not found in concentrations > 0.1% w/w in hardware articles. https://echa.europa.eu/documents/10162/13640/svhc_axvrep_norway_cmr_trilead_diarsenate_20110829_en.pdf	Low	No
Trilead dioxide phosphonate	12141-20-7	**Is a RoHS substance**. Toxic for reproduction (Article 57 c). Professional use of **plastics**. http://echa.europa.eu/documents/10162/28cdb2be-743a-4b06-baba-488114152c8b	Medium	No
Tris(2-chloroethyl)phosphate (TCEP)	115-96-8	Toxic for reproduction (article 57c). Plasticizer and viscosity regulator with flame-retarding properties for the production of unsaturated **polyester resins. Flame retardant in polyurethane**. https://echa.europa.eu/documents/10162/f42be21b-33a3-4063-ad4d-2b0f937e41b4	Medium	Yes
Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	-	Used as antioxidant in polymers, electronics, paintings, adhesives, toys, papers, cardboards and other applications. https://echa.europa.eu/documents/10162/40198e13-d1da-0488-0b89-d350e8a6a75e	High	No
Trixylyl phosphate (TXP)	25155-23-1	Functional fluid (fire resistant fluids, hydraulic fluids, **lubricants,** lubricant additives, grease products, metal working fluids). Flame retardant and/or plasticiser in **plastic** production. might be used in articles made of polyvinyl chloride (**PVC**), e.g. **wire/cable**. use in **polyurethane, thermoplastic elastomers, coatings,** textiles, cellulosic resin and **natural and synthetic rubber** as well as for PVC flooring materials are mentioned. https://echa.europa.eu/documents/10162/953524f2-7965-430c-be61-0bb02f08f83c	High	Yes

Substance Name	CAS Number	Where Used	Risks of Having it in EEE's Products	In the Authorisation List of Annex XIV?
Zirconia Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm). c) alkaline oxide and alkali earth oxide (Na2O+K2O+CaO+MgO+BaO) content less or equal to 18% by weight	-	Carcinogenic (article 57 a). RCF is a high-temperature insulating fibre sold chiefly for industrial applications as insulation for industrial furnaces, pipes, ducts, and cables, as fire protection for buildings and industrial process equipment, as aircraft/aerospace heat shields, and in automotive uses, such as catalytic converters, metal reinforcements, **heat shields**, brake pads, and air bags. RCF is produced in the United States, Mexico, Canada, Brazil, Venezuela, South Africa, Australia, Japan, China, Korea, Malaysia, and Taiwan and several countries in Europe. https://echa.europa.eu/documents/10162/47c8a92c-8fb4-4b0f-85b8-64037ad542ad	Medium	No
α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	Carcinogenic (Article 57a). Used in inks and dyes (typewriter ribbons, computer cartridge, etc., ball point pen inks, and stamping inks), fuel cosmetic products https://echa.europa.eu/documents/10162/13638/svhc_axvrep_c_i_solvent_blue_4_pub_en.pdf	Low	No