



REACH SVHC CANDIDATE LIST

ECHA released the first candidate list of 15 SVHCs for authorization in Aug. 2008, the second SVHC candidate list in Jan. 2010, the third candidate list in June 2010, the fourth candidate list in December 2010, the fifth candidate list in June 2011, the sixth candidate list in December 2011, the seventh candidate list in June 2012, the eighth candidate list in December 2012, the ninth candidate list in June 2013, the tenth candidate list in December 2013, the eleventh candidate list in June 2014, the twelfth candidate list in December 2014, the thirteenth list in June 15, 2015 and the fourteenth list in December 2015, the fifteenth list in June 2016, the sixteenth list in January 2017, the seventeenth list in July 2017, the eighteenth list in January 2018, the nineteenth list in June 2018, the twentieth list in January 2019, the twenty-first list in July 2019. The twenty-second list in January 2020.

■ The Announcement of the First 15 SVHCs List

The European Chemical Agency (ECHA) has formally included 15 substances identified as Substances of Very High Concern (SVHC) in the candidate list of authorization on 28 October 2008.

The list of these 15 SVHC and possible applications are shown below:

| Substance Name | CAS No. | EC No. | Possible Applications |
|---|--|----------------------------|--|
| 4,4'-Diaminodiphenylmethane (MDA) | 101-77-9 | 202-974-4 | Curing agent for epoxy resin in PCB, preparation of PU, azo dyes in garments. |
| Benzyl butyl phthalate (BBP) | 85-68-7 | 201-622-7 | Plasticizer for resin, PVC, acrylics. |
| Bis (2-ethylhexyl) phthalate (DEHP) | 117-81-7 | 204-211-0 | Plasticizer for resin, PVC, blister |
| Dibutyl phthalate (DBP) | 84-74-2 | 201-557-4 | Plasticizer, in adhesives and paper coatings; insect repellent for textiles. |
| Anthracene | 120-12-7 | 204-371-1 | Source of dyestuff |
| 5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene) | 81-15-2 | 201-329-4 | Cosmetics and soap perfumes. |
| Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) | 85535-84-8 | 287-476-5 | Leather coating, plasticizer in PVC and chlorinated rubber, flame retardant in plastic & textiles. |
| Cobalt Dichloride | 7646-79-9 | 231-589-4 | Moisture indicator in silica gel, absorbent. |
| Hexabromocyclododecane (HBCDD) | 25637-99-4 3194-55-6 (134237-50-6) (134237-51-7) (134237-52-8) | 247-148-4 and 221-695-9 | Flame retardant used in HIPS and textiles. |
| Sodium dichromate | 7789-12-0 10588-01-9 | 234-190-3 | Chrome-tanning of leather, corrosion inhibitor in paints, mordant in textile dyein. |



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| Bis(tributyltin) oxide (TBTO) | 56-35-9 | 200-268-0 | Pesticizer, fungicide in paint. |
| Diarsenic pentoxide | 1303-28-2 | 215-116-9 | Insecticides, weed killer, wood preservatives, coloured glass, dyeing and printing. |
| Diarsenic trioxide | 1327-53-3 | 215-481-4 | Weed killers, timber preservatives, manufacture of special glass. |
| Triethyl arsenate | 15606-95-8 | 427-700-2 | Intermediates for semi-conductor. |
| Lead hydrogen arsenate | 7784-40-9 | 232-064-2 | Insecticides. |

■ The Announcement of the Second 13 SVHCs List

The European Chemical Agency (ECHA) officially published the second SVHC candidate list which includes a total of 29 substances on January 13th, 2010.

ECHA added the substance "Acrylamide" back to the candidate list on March 30th.

ECHA comprised a consolidation of the entries of aluminosilicate refractory ceramic fibres (Al-RCF) and zirconia aluminosilicate refractory ceramic fibres (ZrAl-RCF) included in the List in January 2010 and December 2011 on June 18th, 2012.

The list of these 13 SVHC and possible applications are shown below:

| Substance Name | (CAS No.) | EC No. | Possible Applications |
|---|------------|-----------|--|
| 2,4-Dinitrotoluene | 121-14-2 | 204-450-0 | 2,4-dinitrotoluene is used in the production of toluene diisocyanate, which is used for the manufacture of flexible polyurethane foams. The substance is also used as gelatinizing-plasticizing agent |
| Anthracene oil | 90640-80-5 | 292-602-7 | The substances are mainly used in the manufacture of other substances such as anthracene and carbon black. They may also be used as reducing agents in blast furnaces, as components in bunker fuel, for impregnating, sealing and corrosion protection. |
| Anthracene oil, anthracene paste, distn.lights | 91995-17-4 | 295-278-5 | |
| Anthracene oil, anthracene paste, anthracene fraction | 91995-15-2 | 295-275-9 | |
| Anthracene oil, anthracene-low | 90640-82-7 | 292-604-8 | |
| Anthracene oil, anthracene paste | 90640-81-6 | 292-603-2 | |
| Diisobutyl phthalate (DIBP) | 84-69-5 | 201-553-2 | Diisobutyl phthalate is used as plasticiser for nitrocellulose, cellulose ether, polyacrylate and polyacetate dispersions, and as a gelling aid in combination with other plasticisers, which are widely used for plastics, lacquers, adhesives, explosive material and nail polish. |
| Lead chromate | 7758-97-6 | 231-846-0 | Lead chromate is used for manufacturing pigments and dyes, and as a pigment or |



| Substance Name | (CAS No.) | EC No. | Possible Applications |
|---|------------|-----------|--|
| | | | coating agent in industrial and maritime paint products or varnishes. Further potential uses may be associated with the formulation of detergents and bleaches, photosensitive materials, the manufacture of pyrotechnic powder or the embalming /restoring of art products. |
| Lead chromate molybdate sulphate red (C.I. Pigment Red 104) | 12656-85-8 | 235-759-9 | Lead chromate molybdate sulphate red (C.I. Pigment Red 104) is used as a colouring, painting and coating agent in sectors such as the rubber, plastic and paints, coatings and varnishes industries. Applications comprise the production of agricultural equipment, vehicles and aircraft as well as road and airstrip painting. |
| Lead sulfochromate yellow (C.I. Pigment Yellow 34) | 1344-37-2 | 215-693-7 | Lead sulfochromate yellow (C.I. Pigment Yellow 34) is used as a colouring, painting and coating agent in sectors such as the rubber, plastic and paints, coatings and varnishes industries. Applications comprise the production of agricultural equipment, vehicles and aircraft as well as road and airstrip painting. The substance is further used for camouflage or ammunition marking in the defence area. |
| Tris(2-chloroethyl)phosphate | 115-96-8 | 204-118-5 | Tris(2-chloroethyl)phosphate is mainly used as an additive plasticiser and viscosity regulator with flame-retarding properties for acrylic resins, polyurethane, polyvinyl chloride and other polymers. Other fields of application are adhesives, coatings, flame resistant paints and varnishes. The main industrial branches to use TCEP are the furniture, the textile and the building industry. |
| Pitch, coal tar, high temp. | 65996-93-2 | 266-028-2 | Pitch, coal tar, high temp. is mainly used in the production of electrodes for Industrial applications. Smaller volumes are dedicated to specific uses such as heavy duty corrosion protection, special |



| Substance Name | (CAS No.) | EC No. | Possible Applications |
|----------------|-----------|-----------|---|
| | | | purpose paving, manufacture of other substances and the production of clay targets. |
| Acrylamide | 79-06-1 | 201-173-7 | Acrylamide is almost exclusively used for the synthesis of polyacrylamides, which are used in various applications, in particular in waste water treatment and paper processing. Minor uses of acrylamide comprise the preparation of polyacrylamide gels for research purposes and as a grouting agent in civil. |

■ **The Announcement of the Third 8 SVHCs List**

The European Chemicals Agency (ECHA) has added 8 extra chemical Substances of Very High Concern (SVHC) to the Candidate List on 18th June 2010 on top of the 15 SVHC that had been regulated in October 2008, and 15 SVHC in January 2010.

The list of these 8 SVHCs and possible applications are shown below:

| Substance Name | CAS No. | EC No. | Possible Applications |
|---|--------------------------------------|-------------------------|---|
| Trichloroethylene | 79-01-6 | 201-167-4 | Trichloroethylene is mainly used as intermediate in the manufacture of chlorinated and fluorinated organic compounds. Other uses are for cleaning and degreasing of metal parts or as solvent in adhesives. |
| Boric acid | 10043-35-3, 11113-50-1 | 233-139-2, 234-343-4 | Boric acid is widely used on account of its consistency-influencing, flame-retarding, antiseptic and preservative properties. It is a component of detergents and cleaners, adhesives, toys, industrial fluids, brake fluids, glass, ceramics, flame retardants, paints, disinfectants, cosmetics, food additives, fertilisers, insecticides and other products. |
| Disodium tetraborate, anhydrous | 1330-43-4 12179-04-3 1303-96-4 | 215-540-4 | Disodium tetraborate and tetraboron disodium heptaoxide form the same compounds in aqueous solutions. |
| Tetraboron disodium heptaoxide, hydrate | 12267-73-1 | 235-541-3 | Uses include a multitude of applications, e.g. in detergents and |



| Substance Name | CAS No. | EC No. | Possible Applications |
|----------------------|-----------|-----------|---|
| | | | cleaners, in glass and glass fibres, ceramics, industrial fluids, metallurgy, adhesives, flame retardants, personal care products, biocides, fertilisers. |
| Sodium chromate | 7775-11-3 | 231-889-5 | Sodium chromate is mainly used as an intermediate in the manufacture of other chromium compounds as well as a laboratory analytical agent, but this use is limited. Other potential uses are mentioned in the literature but whether they occur in the EU is not clear. |
| Potassium chromate | 7789-00-6 | 232-140-5 | Potassium chromate is used as a corrosion inhibitor for treatment and coating of metals, for manufacture of reagents, chemicals and textiles, as a colouring agent in ceramics, in the manufacture of pigments/inks and in the laboratory as analytical agent. |
| Ammonium dichromate | 7789-09-5 | 232-143-1 | Ammonium dichromate is mainly used as an oxidising agent. Other known uses are in the manufacture of photosensitive screens and as mordant in the manufacture of textiles. Minor uses seem to comprise metal treatment and laboratory analytical agent. |
| Potassium dichromate | 7778-50-9 | 231-906-6 | Potassium dichromate is used for chrome metal manufacturing and as corrosion inhibitor for treatment and coating of metals. It is further used as textile mordant, as laboratory analytical agent, for cleaning of laboratory glassware, in the manufacture of other reagents and as oxidising agent in photolithography. |

■ **The Announcement of the Fourth 8 SVHCs List**

The ECHA has added eight more chemical Substances of Very High Concern (SVHC) to the Candidate List on 15th December 2010.

The list of these 8 SVHCs and possible applications are shown below:

| Substance Name | CAS No. | EC No. | Possible Applications |
|----------------|---------|--------|-----------------------|
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|---|--------------------------|------------------------|---|
| Cobalt(II) sulphate | 10124-43-3 | 233-334-2 | Mainly used in the production of other chemicals. Further applications may include manufacture of catalysts and driers, surface treatments (such as electroplating), corrosion prevention, production of pigments, decolourising (in glass, pottery), batteries, animal food supplements, soil fertilizers, and others. |
| Cobalt(II) dinitrate | 10141-05-6 | 233-402-1 | Mainly used in the production of other chemicals and the manufacture of catalysts. Further applications may include surface treatment and batteries. |
| Cobalt(II) carbonate | 513-79-1 | 208-169-4 | Mainly used in the manufacture of catalysts. Minor uses may include feed additive, production of other chemicals, production of pigments, and adhesion (in ground coat frit). |
| Cobalt(II) diacetate | 71-48-7 | 200-755-8 | Mainly used in the manufacture of catalysts. Minor uses may include production of other chemicals, surface treatment, alloys, production of pigments, dyes, rubber adhesion, and feed additive. |
| 2-Methoxyethanol | 109-86-4 | 203-713-7 | Mainly used as solvent, intermediate and as an additive for fuel. Might also be used in textile finishing. |
| 2-Ethoxyethanol | 110-80-5 | 203-804-1 | Mainly used as solvent and chemical intermediate. Might also be used in textile finishing. |
| Chromium trioxide | 1333-82-0 | 215-607-8 | Used for metal finishing and as a fixing agent in waterborne wood preservatives. |
| Acids generated from chromium trioxide and their oligomers: Chromic acid Dichromic acid Oligomers of chromic acid and dichromic acid | 7738-94-5, 13530-68-2 | 231-801-5 236-881-5 | These acids and their oligomers are generated when chromium trioxide is dissolved in water. Chromium trioxide is mainly used in the form of aqueous solutions. Consequently, the uses of these substances are the same as indicated for chromium trioxide. |

■ **The Announcement of the Fifth 7 SVHCs List**



The ECHA has added seven more chemical Substances of Very High Concern (SVHC) to the Candidate List on 20th June 2011.

The list of these 7 SVHCs and possible applications are shown below:

| Substance Name | CAS No. | EC No. | Possible Applications |
|---|------------------------|-----------|---|
| 2-ethoxyethyl acetate | 111-15-9 | 203-839-2 | Solvent and intermediate, formulation of paints, lacquers and varnishes. |
| strontium chromate | 7789-06-2 | 232-142-6 | Inhibitor, pigments, paints, varnishes, oil-colors, sealants, formulations in aeronautic/aerospace sector, coil coating sector of steel and aluminum and vehicle coating sector. |
| 1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters | 68515-42-4 | 271-084-6 | Adhesives and binding agents, paint, lacquers and varnishes, construction materials |
| Hydrazine | 302-01-2, 7803-57-8 | 206-114-9 | Hydrazine derivatives in pharmaceuticals, agrochemicals, chemical blowing agents, paints, inks and organic dyes, reagents, monomer in polymerizations, corrosion inhibitor, reducing agent in the deposition metals and purification of chemical reagents, stabilizing agent, laboratory chemical reagent; Propellant for aerospace vehicles, fuel in military gas generators. |
| 1-methyl-2-pyrrolidone | 872-50-4 | 212-828-1 | Coatings (paints, printing inks), cleaning products (polymer removers, paint strippers/cleaners), agrochemicals, electronic equipment manufacture, petrochemical processing, pharmaceuticals. |
| 1,2,3-trichloropropane | 96-18-4 | 202-486-1 | Pesticides, chlorinated solvents, polysulfide elastomers, hexafluoropropylene. |
| 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich | 71888-89-6 | 276-158-1 | Plasticiser in PVC, plasticiser in sealants and printing inks, sealants and coatings, printing inks, oil additive. |

■ **The Announcement of the sixth 20 SVHCs List**

The ECHA has added twenty more chemical Substances of Very High Concern (SVHC) to the Candidate List on 19th December 2011.

The list of these 20 SVHC and possible applications are shown below:

| Substance Name | CAS NO. | EC NO. | Potential Uses |
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| Dichromium tris(chromate) | 24613-89-6 | 246-356-2 | Mainly used in mixtures for metal surface treatment in the aeronautic/aerospace, steel and aluminium coating sectors. |
| Potassium hydroxyoctaoxodizincatedi-chromate | 11103-86-9 | 234-329-8 | Mainly used in coatings in the aeronautic/aerospace, steel and aluminium coil coating and vehicle coating sectors. |
| Pentazinc chromate octahydroxide | 49663-84-5 | 256-418-0 | Mainly used in coatings in the vehicle coating and aeronautic / aerospace sectors. |
| Zirconia Aluminosilicate Refractory Ceramic Fibres ¹ | - | - | Refractory ceramic fibres are used for high-temperature insulation, almost exclusively in industrial applications (insulation of industrial furnaces and equipment, equipment for the automotive and aircraft/aerospace industry) and in fire protection (buildings and industrial process equipment). |
| Aluminosilicate Refractory Ceramic Fibres | - | - | Refractory ceramic fibres are used for high-temperature insulation, almost exclusively in industrial applications (insulation of industrial furnaces and equipment, equipment for the automotive and aircraft/aerospace industry) and in fire protection (buildings and industrial process equipment). |
| Formaldehyde, oligomeric reaction products with aniline (technical MDA) | 25214-70-4 | 500-036-1 | Mainly used for manufacture of other substances. Minor uses are as hardener for epoxy resins, e.g. for the production of rolls, pipes and moulds, and as well for adhesives. |
| Bis(2-methoxyethyl) phthalate | 117-82-8 | 204-212-6 | No registration for this phthalate compound has been submitted to ECHA. Hence, the substance seems not to be manufactured in or imported to the EU in quantities above 1 t/y. Main uses in the past were as plasticiser in polymeric materials and paints, lacquers and varnishes, including printing inks. |



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| 2-Methoxyaniline; o-Anisidine | 90-04-0 | 201-963-1 | Mainly used in the manufacture of dyes for tattooing and coloration of paper, polymers and aluminium foil. |
| 4-(1,1,3,3-tetramethylbutyl)phenol | 140-66-9 | 205-426-2 | Mainly used in the manufacture of polymer preparations and of ethoxylates. Further used as a component in adhesives, coatings, inks and rubber articles. |
| 1,2-Dichloroethane | 107-06-2 | 203-458-1 | Mainly used for manufacture of other substances. Minor uses as solvent in the chemical and pharmaceutical industry. |
| Bis(2-methoxyethyl) ether | 111-96-6 | 203-924-4 | Used primarily as a reaction solvent or process chemical in a wide variety of applications. Used also as solvent for battery electrolytes, and possibly in other products such as sealants, adhesives, fuels and automotive care products. |
| Arsenic acid | 7778-39-4 | 231-901-9 | Mainly used to remove gas bubbles from ceramic glass melt and in the production of laminated printed circuit boards |
| Calcium arsenate | 7778-44-1 | 231-904-5 | Calcium arsenate is present in complex raw materials imported for manufacture of copper, lead and a range of precious metals. It appears mainly to be used as precipitating agent in copper smelting and to manufacture diarsenic trioxide. However, most of the substance seems to be disposed of as waste. |
| Trilead diarsenate | 3687-31-8 | 222-979-5 | Trilead diarsenate is present in complex raw materials imported for manufacture of copper, lead and a range of precious metals. The trilead diarsenate contained in the raw materials is in the metallurgical refinement process transformed to calcium arsenate and diarsenic trioxide. Whereas most of the calcium arsenate appears to be disposed of as waste the diarsenic trioxide is used further. |



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| N,N-dimethylacetamide (DMAC) | 127-19-5 | 204-826-4 | Used as solvent, mainly in the manufacture of various substances and in the production of fibres for clothing and other applications. Also used as reagent, and in products such as industrial coatings, polyimide films, paint strippers and ink removers. |
| 2,2'-dichloro-4,4'-methylenedianiline (MOCA) | 101-14-4 | 202-918-9 | Mainly used as curing agent in resins and in the production of polymer articles and also for manufacture of other substances. The substance may further be used in construction and arts. |
| Phenolphthalein | 77-09-8 | 201-004-7 | Mainly used as laboratory agent (in pH indicator solutions), for the production of pH-indicator paper and in medicinal products. |
| Lead azide, Lead diazide | 13424-46-9 | 236-542-1 | Mainly used as initiator or booster in detonators for both civilian and military uses and as initiator in pyrotechnic devices. |
| Lead styphnate | 15245-44-0 | 239-290-0 | Mainly used as a primer for small calibre and rifle ammunition. Other common uses are in munition pyrotechnics, powder actuated devices and detonators for civilian use. |
| Lead dipicrate | 6477-64-1 | 229-335-2 | No registration for this substance has been submitted to ECHA. Lead dipicrate is an explosive like lead diazide and lead styphnate. It may be used in low amounts in detonator mixtures together with the two other mentioned lead compounds. |

1. 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 ($\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}+\text{MgO}+\text{BaO}$) content less or equal to 18% by weight
2. 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 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 and alkali earth oxide ($\text{Na}_2\text{O}+\text{K}_2\text{O}+\text{CaO}+\text{MgO}+\text{BaO}$) content less or equal to 18% by weight

■ **The Announcement of the seventh 13 SVHCs List**

The ECHA has added thirteen more chemical Substances of Very High Concern (SVHC) to the Candidate List on 18th June 2012.

The list of these 13 SVHCs and possible applications are shown below:

| Substance Name | CAS NO. | EC NO. | Potential Uses |
|--|------------|-----------|---|
| 1,2-bis(2-methoxyethoxy) ethane (TEGDME; triglyme) | 112-49-2 | 203-977-3 | Mainly used as a solvent or as a processing aid in the manufacture and formulation of industrial chemicals. Minor use in brake fluids and repair of motor vehicles. |
| 1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) | 110-71-4 | 203-794-9 | Mainly used as a solvent or as a processing aid in the manufacture and formulation of industrial chemicals, including use as an electrolyte solvent in lithium batteries. |
| Diboron trioxide | 1303-86-2 | 215-125-8 | Used in a multitude of applications, e.g., in glass and glass fibres, frits, ceramics, flame retardants, catalysts, industrial fluids, metallurgy, adhesives, inks/paints, film developers solutions, detergents and cleaners, biocides and insecticides. |
| Formamide | 75-12-7 | 200-842-0 | Mainly used as an intermediate. Minor uses as solvent, as reagent chemical (in the pharmaceutical industry) and as laboratory chemical. The substance seems further to be used in the agrochemical industry and as a plasticiser. |
| Lead (II) bis (methanesulfonate) | 17570-76-2 | 401-750-5 | Mainly used in plating (both electrolytic and electroless) processes for electronic components (such as printed circuit boards). |
| TGIC(1,3,5-tris (oxiranylmethyl) -1,3,5-triazine-2,4,6 (1H,3H,5H) -trione) | 2451-62-9 | 219-514-3 | Mainly used as a hardener in resins and coatings; also used in inks for the printed circuit board industry, electrical insulation material, resin moulding systems, laminated sheeting, silk screen |



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| | | | printing coatings, tools, adhesives, lining materials and stabilisers for plastics. |
| β -TGIC(1,3,5-tris[(2S and2R)-2,3-epoxypropyl]-1,3,5-triazine-2, 4,6-(1H,3H,5H)-trione) | 59653-74-6 | 423-400-0 | Mainly used as a hardener in resins and coatings; also used in inks for the printed circuit board industry, electrical insulation material, resin moulding systems, laminated sheeting, silk screen printing coatings, tools, adhesives, lining materials and stabilisers for plastics. |
| 4,4'-bis(dimethylamino) benzophenone(Michler's ketone) | 90-94-8 | 202-027-5 | Intermediate in the manufacture of triphenylmethane dyes and other substances. Further potential uses include as additive (photosensitiser) in dyes and pigments, in dry film products, as a process chemical in the production of electronic circuit boards, in research and development applications. |
| N,N,N',N'-tetramethyl-4,4'-methylenedia niline (Michler's base) | 101-61-1 | 202-959-2 | Intermediate in the manufacture of dyes and other substances. Used also as chemical reagent in research and development. |
| [4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2, 5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Violet 3) ¹ | 548-62-9 | 208-953-6 | Used mainly for paper colouring and inks supplied in printer cartridges and ball pens. Further uses include staining of dried plants, marker for increasing the visibility of liquids, staining in microbial and clinical laboratories. |
| [4-[[4-anilino-1-naphthyl][4-(dimethylami no)phenyl]methylene]cyclohexa-2,5-dien -1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) ¹ | 2580-56-5 | 219-943-6 | Used in the production of inks, cleaners, and coatings, as well as for dyeing of paper, packaging, textiles, plastic products, and other types of articles. It is also used in diagnostic and analytical applications. |
| α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene -1-methanol (C.I. Solvent Blue 4) ¹ | 6786-83-0 | 229-851-8 | Mainly used in the production of printing and writing inks, for dyeing of paper and in mixtures such as windscreen washing agents. |
| 4,4'-bis(dimethylamino)-4''-(methylamin o)trityl alcohol ¹ | 561-41-1 | 209-218-2 | Used in the production of writing inks and potentially in the production of other inks, as well as for dyeing of a variety of materials. |

■ The Announcement of the eighth 54 SVHCs List

The ECHA has added fifty-four more chemical Substances of Very High Concern (SVHC) to the Candidate



List on 19th December 2012.

The list of these 54 SVHCs and possible applications are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|--|---|---|--|
| Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE) | 214-604-9 | 1163-19-5 | PBT; vPvB |
| Pentacosafuorotridecanoic acid | 276-745-2 | 72629-94-8 | vPvB |
| Tricosafuorododecanoic acid | 206-203-2 | 307-55-1 | vPvB |
| Henicosafuoroundecanoic acid | 218-165-4 | 2058-94-8 | vPvB |
| Heptacosafuorotetradecanoic acid | 206-803-4 | 376-06-7 | vPvB |
| Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) | 204-650-8 | 123-77-3 | Equivalent level of concern having probable serious effects to human health |
| 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]. | 201-604-9, 236-086-3, 238-009-9 | 85-42-7, 13149-00-3, 14166-21-3 | Equivalent level of concern having probable serious effects to human health |
| 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] | 247-094-1, 243-072-0, 256-356-4, 260-566-1 | 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9 | Equivalent level of concern having probable serious effects to human health |
| 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 |
| 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues] | - | - | Equivalent level of concern having probable serious effects to the environment |
| Methoxyacetic acid | 210-894-6 | 625-45-6 | Toxic for reproduction |
| N,N-dimethylformamide | 200-679-5 | 68-12-2 | Toxic for reproduction |
| Dibutyltin dichloride (DBTC) | 211-670-0 | 683-18-1 | Toxic for reproduction |
| Lead monoxide (Lead oxide) | 215-267-0 | 1317-36-8 | Toxic for reproduction |



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|--|-----------|-------------|--------------------------|
| Orange lead (Lead tetroxide) | 215-235-6 | 1314-41-6 | Toxic for reproduction |
| Lead bis(tetrafluoroborate) | 237-486-0 | 13814-96-5 | Toxic for reproduction |
| Trilead bis(carbonate)dihydroxide | 215-290-6 | 1319-46-6 | Toxic for reproduction |
| Lead titanium trioxide | 235-038-9 | 12060-00-3 | Toxic for reproduction |
| Lead titanium zirconium oxide | 235-727-4 | 12626-81-2 | Toxic for reproduction |
| Silicic acid, lead salt | 234-363-3 | 11120-22-2 | Toxic for reproduction |
| Silicic acid (H ₂ Si ₂ O ₅), 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] | 272-271-5 | 68784-75-8 | Toxic for reproduction |
| 1-bromopropane (n-propyl bromide) | 203-445-0 | 106-94-5 | Toxic for reproduction |
| Methyloxirane (Propylene oxide) | 200-879-2 | 75-56-9 | Carcinogenic; Mutagenic |
| 1,2-Benzenedicarboxylic acid, dipentylester, branched and linear | 284-032-2 | 84777-06-0 | Toxic for reproduction |
| Diisopentylphthalate (DIPP) | 210-088-4 | 605-50-5 | Toxic for reproduction |
| N-pentyl-isopentylphthalate | - | 776297-69-9 | Toxic for reproduction |
| 1,2-diethoxyethane | 211-076-1 | 629-14-1 | Toxic for reproduction |
| Acetic acid, lead salt, basic | 257-175-3 | 51404-69-4 | Toxic for reproduction |
| Lead oxide sulfate | 234-853-7 | 12036-76-9 | Toxic for reproduction |
| [Phthalato(2-)]dioxotrilead | 273-688-5 | 69011-06-9 | Toxic for reproduction |
| Dioxobis(stearato)trilead | 235-702-8 | 12578-12-0 | Toxic for reproduction |
| Fatty acids, C16-18, lead salts | 292-966-7 | 91031-62-8 | Toxic for reproduction |
| Lead cyanamidate | 244-073-9 | 20837-86-9 | Toxic for reproduction |
| Lead dinitrate | 233-245-9 | 10099-74-8 | Toxic for reproduction |
| Pentalead tetraoxide sulphate | 235-067-7 | 12065-90-6 | Toxic for reproduction |
| Pyrochlore, antimony lead yellow | 232-382-1 | 8012-00-8 | Toxic for reproduction |
| Sulfurous acid, lead salt, dibasic | 263-467-1 | 62229-08-7 | Toxic for reproduction |
| Tetraethyllead | 201-075-4 | 78-00-2 | Toxic for reproduction |
| Tetralead trioxide sulphate | 235-380-9 | 12202-17-4 | Toxic for reproduction |
| Trilead dioxide phosphonate | 235-252-2 | 12141-20-7 | Toxic for reproduction |
| Furan | 203-727-3 | 110-00-9 | Carcinogenic |
| Diethyl sulphate | 200-589-6 | 64-67-5 | Carcinogenic ; Mutagenic |



| | | | |
|--|-----------|-------------|--------------------------|
| Dimethyl sulphate | 201-058-1 | 77-78-1 | Carcinogenic |
| 3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine | 421-150-7 | 143860-04-2 | Toxic for reproduction |
| Dinoseb (6-sec-butyl-2,4-dinitrophenol) | 201-861-7 | 88-85-7 | Toxic for reproduction |
| 4,4'-methylenedi-o-toluidine | 212-658-8 | 838-88-0 | Carcinogenic |
| 4,4'-oxydianiline and its salts | 202-977-0 | 101-80-4 | Carcinogenic ; Mutagenic |
| 4-aminoazobenzene | 200-453-6 | 60-09-3 | Carcinogenic |
| 4-methyl-m-phenylenediamine (toluene-2,4-diamine) | 202-453-1 | 95-80-7 | Carcinogenic |
| 6-methoxy-m-toluidine (p-cresidine) | 204-419-1 | 120-71-8 | Carcinogenic |
| Biphenyl-4-ylamine | 202-177-1 | 92-67-1 | Carcinogenic |
| o-aminoazotoluene [(4-o-tolylazo-o-toluidine)] | 202-591-2 | 97-56-3 | Carcinogenic |
| o-toluidine | 202-429-0 | 95-53-4 | Carcinogenic |
| N-methylacetamide | 201-182-6 | 79-16-3 | Toxic for reproduction |

- The last four SVHCs identification is based on the presence of the carcinogenic constituents Michler's ketone or Michler's base above the concentration limit for classifying the substances as carcinogenic (≥ 0.1 % weight/weight).

■ The Announcement of the ninth 6 SVHCs List

The ECHA has added six more chemical Substances of Very High Concern (SVHC) to the Candidate List on 20th June 2013.

The list of these 6 SVHC and possible applications are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|--|-----------|-----------|--|
| Cadmium | 231-152-8 | 7440-43-9 | Carcinogenic (Article 57a); Equivalent level of concern having probable serious effects to human health (Article 57 f) |
| Cadmium oxide | 215-146-2 | 1306-19-0 | Carcinogenic (Article 57a); Equivalent level of concern having probable serious effects to human health (Article 57 f) |
| Ammonium pentadecafluorooctanoate (APFO) | 223-320-4 | 3825-26-1 | Toxic for reproduction (Article 57 c); PBT (Article 57 d) |
| Pentadecafluorooctanoic acid (PFOA) | 206-397-9 | 335-67-1 | Toxic for reproduction (Article 57 c); PBT (Article 57 d) |
| Dipentyl phthalate (DPP) | 205-017-9 | 131-18-0 | Toxic for reproduction (Article 57 c) |
| 4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, | / | / | Equivalent level of concern having probable serious effects to the environment (Article 57 f) |



which include any of the individual isomers and/or combinations thereof]

■ The Announcement of the tenth 7 SVHCs List

The ECHA has added seven more chemical Substances of Very High Concern (SVHC) to the Candidate List on 16th December 2013.

The list of these 7 SVHCs and possible applications are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|---|-----------|------------|--|
| 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) | 217-710-3 | 1937-37-7 | Carcinogenic (Article 57a) |
| Trixylyl phosphate | 246-677-8 | 25155-23-1 | Toxic for reproduction (Article 57 c) |
| Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis (azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28) | 209-358-4 | 573-58-0 | Carcinogenic (Article 57a) |
| Dihexyl phthalate | 201-559-5 | 84-75-3 | Toxic for reproduction (Article 57 c) |
| Imidazolidine-2-thione; 2-imidazoline-2-thiol | 202-506-9 | 96-45-7 | Toxic for reproduction (Article 57 c) |
| Cadmium sulphide | 215-147-8 | 1306-23-6 | Carcinogenic (Article 57a); Equivalent level of concern having probable serious effects to human health (Article 57 f) |
| Lead di(acetate) | 206-104-4 | 301-04-2 | Toxic for reproduction (Article 57 c) |

■ The Announcement of the eleventh 4 SVHCs List

The ECHA has added four more chemical Substances of Very High Concern (SVHC) to the Candidate List on 16th June 2014.

The list of these 4 SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|---|-------------------------|------------|--|
| Cadmium chloride | 233-296-7 | 10108-64-2 | 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) |
| 1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear | 271-093-5 | 68515-50-4 | Toxic for reproduction (Article 57 c) |
| Sodium peroxometaborate | 231-556-4 | 7632-04-4 | Toxic for reproduction (Article 57 c) |
| Sodium perborate; perboric acid, sodium salt | 239-172-9; 234-390-0 | - | Toxic for reproduction (Article 57 c) |



■ The Announcement of the 12th 6 SVHCs List

The ECHA has added six more chemical Substances of Very High Concern (SVHC) to the Candidate List on 17th December 2014.

The list of these 6 SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|---|-----------|---------------------------|---|
| Cadmium fluoride | 232-222-0 | 7790-79-6 | Carcinogenic (Article 57 a); Mutagenic (Article 57 b); Toxic for reproduction (Article 57 c); Equivalent level of concern having probable serious effects to human health (Article 57 f) |
| Cadmium sulphate | 233-331-6 | 10124-36-4; 31119-53-6 | Carcinogenic (Article 57 a); Mutagenic (Article 57 b); Toxic for reproduction (Article 57 c); Equivalent level of concern having probable serious effects to human health (Article 57 f) |
| 2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) | 223-346-6 | 3846-71-7 | PBT (Article 57 d); vPvB (Article 57 e) |
| 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) | 247-384-8 | 25973-55-1 | PBT (Article 57 d); vPvB (Article 57 e) |
| 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE) | 239-622-4 | 15571-58-1 | Toxic for reproduction (Article 57 c) |
| 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) | - | - | Toxic for reproduction (Article 57 c) |

■ The Announcement of the 13th 2 SVHCs List

The ECHA has added two more chemical Substances of Very High Concern (SVHC) to the Candidate List on 15th June 2015.

The list of these 2 SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|---|-------------------------|---------------------------|---------------------------------------|
| 1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate (EC No. 201-559-5) | 271-094-0; 272-013-1 | 68515-51-5; 68648-93-1 | Toxic for reproduction (Article 57 c) |



| | | | |
|---|---|---|--------------------|
| 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 stereoisomers of [1] and [2] or any combination thereof] | - | - | vPvB (Article 57e) |
|---|---|---|--------------------|

■ **The Announcement of the 14th 5 SVHCs List**

The ECHA has added five more chemical Substances of Very High Concern (SVHC) to the Candidate List on 17th December 2015.

The list of these 5 SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|--|-----------|-------------------------------------|---|
| Nitrobenzene | 202-716-0 | 98-95-3 | Toxic for reproduction (Article 57 c) |
| 2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327) | 223-383-8 | 3864-99-1 | vPvB (Article 57 e) |
| 2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350) | 253-037-1 | 36437-37-3 | vPvB (Article 57 e) |
| 1,3-propanesultone | 214-317-9 | 1120-71-4 | Carcinogenic (Article 57 a) |
| Perfluorononan-1-oic-acid and its sodium and ammonium salts | 206-801-3 | 375-95-1 21049-39-8 4149-60-4 | Toxic for reproduction (Article 57 c) PBT (Article 57 d) |

■ **The Announcement of the 15th 1 SVHC List**

The ECHA has added one more chemical Substances of Very High Concern (SVHC) to the Candidate List on 20th June 2016.

The list of these 1 SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|--|-----------|---------|--|
| Benzo[def]chrysene (Benzo[a]pyrene) | 200-028-5 | 50-32-8 | Carcinogenic (Article 57a) Mutagenic (Article 57b) Toxic for reproduction (Article 57c) PBT (Article 57d) vPvB (Article 57e) |

■ **The Announcement of the 16th 4 SVHC List**

The ECHA has added four more chemical Substances of Very High Concern (SVHC) to the Candidate List on 12th January 2017.

The list of these 4 SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|--|-----------|---------|---|
| 4,4'-isopropylidenediphenol (bisphenol A; BPA) | 201-245-8 | 80-05-7 | Toxic for reproduction (Article 57c) Endocrine disrupting properties (Article 57f) |



| | | | |
|---|-----------------------------|------------------------------------|--|
| | | | 57(f) - environment Endocrine disrupting properties (Article 57(f) - human health) |
| Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts | 206-400-3 - 221-470-5 | 335-76-2 3830-45-3 3108-42-7 | Toxic for reproduction (Article 57c) PBT (Article 57d) |
| p-(1,1-dimethylpropyl)phenol | 201-280-9 | 80-46-6 | Equivalent level of concern having probable serious effects to environment (Article 57f) |
| 4-heptylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 7 covalently bound predominantly 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 environment (Article 57f) |

■ The Announcement of the 17th 1 SVHC List

The ECHA has added one more chemical Substances of Very High Concern (SVHC) to the Candidate List on 7th July 2017.

The list of one SVHC and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|--|--------|---------|--------------------|
| Perfluorohexane-1-sulphonic acid and its salts (PFHxS) | - | - | vPvB (Article 57e) |

■ The Announcement of the 18th 7 SVHC List

The ECHA has added seven more chemical Substances of Very High Concern (SVHC) to the Candidate List on 15th January 2018.

The list of these 7 SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|-------------------|-----------|----------|---|
| Chrysene | 205-923-4 | 218-01-9 | Carcinogenic (Article 57a) PBT (Article 57d) vPvB (Article 57e) |
| Benz[a]anthracene | 200-280-6 | 56-55-3 | Carcinogenic (Article 57a) PBT (Article 57d) vPvB (Article 57e) |



| | | | |
|--|-----------|------------|--|
| Cadmium nitrate | 233-710-6 | 10325-94-7 | Carcinogenic (Article 57a) Mutagenic (Article 57b) Specific target organ toxicity after repeated exposure (Article 57(f) - human health) |
| Cadmium hydroxide | 244-168-5 | 21041-95-2 | Carcinogenic (Article 57a) Mutagenic (Article 57b) Specific target organ toxicity after repeated exposure (Article 57(f) - human health) |
| Cadmium carbonate | 208-168-9 | 513-78-0 | Carcinogenic (Article 57a) Mutagenic (Article 57b) Specific target organ toxicity after repeated exposure (Article 57(f) - human health) |
| 1,6,7,8,9,14,15,16,17,17,18,18-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) |
| 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] | - | - | Endocrine disrupting properties (Article 57(f) – environment) |

■ The Announcement of the 19th 10 SVHC List

The ECHA has added ten more chemical Substances of Very High Concern (SVHC) to the Candidate List on 27th June 2018.

The list of these 10 SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|------------------------------------|-----------|-----------|---|
| Octamethylcyclotetrasiloxane (D4) | 209-136-7 | 556-67-2 | PBT (Article 57d) vPvB (Article 57e) |
| Decamethylcyclopentasiloxane (D5) | 208-764-9 | 541-02-6 | PBT (Article 57d) vPvB (Article 57e) |
| Dodecamethylcyclohexasiloxane (D6) | 208-762-8 | 540-97-6 | PBT (Article 57d) vPvB (Article 57e) |
| Lead | 231-100-4 | 7439-92-1 | Toxic for reproduction (Article 57c) |



| | | | |
|--|-----------|------------|--|
| Disodium octaborate | 234-541-0 | 12008-41-2 | Toxic for reproduction (Article 57c) |
| Benzo[ghi]perylene | 205-883-8 | 191-24-2 | PBT (Article 57d) vPvB (Article 57e) |
| Terphenyl hydrogenated | 262-967-7 | 61788-32-7 | vPvB (Article 57e) |
| Ethylenediamine (EDA) | 203-468-6 | 107-15-3 | Respiratory sensitising properties (Article 57(f) - human health) |
| Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA) | 209-008-0 | 552-30-7 | Respiratory sensitising properties (Article 57(f) - human health) |
| Dicyclohexyl phthalate (DCHP) | 201-545-9 | 84-61-7 | Toxic for reproduction (Article 57c) Endocrine disrupting properties (Article 57(f) - human health) |

■ The Announcement of the 20th 6 SVHC List

The ECHA has added six more chemical Substances of Very High Concern (SVHC) to the Candidate List on 15th January 2019.

The list of these six SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|---|-----------|--------------------------|---|
| 1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one | 239-139-9 | 15087-24-8 | Endocrine disrupting properties (Article 57(f) - environment) |
| 2,2-bis(4'-hydroxyphenyl)-4-methylpentane | 401-720-1 | 6807-17-6 | Toxic for reproduction (Article 57c) |
| Benzo[k]fluoranthene | 205-916-6 | 207-08-9 | Carcinogenic (Article 57a) PBT (Article 57d) vPvB (Article 57e) |
| Fluoranthene | 205-912-4 | 206-44-0; 93 951-69-0 | PBT (Article 57d) vPvB (Article 57e) |
| Phenanthrene | 201-581-5 | 85-01-8 | vPvB (Article 57e) |
| Pyrene | 204-927-3 | 129-00-0; 17 18-52-1 | PBT (Article 57d) vPvB (Article 57e) |

■ The Announcement of the 21st 4 SVHC List

The ECHA has added four more chemical Substances of Very High Concern (SVHC) to the Candidate List on 16th July 2019.

The list of these four SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|---|-----------|----------|--|
| 2-methoxyethyl acetate | 203-772-9 | 110-49-6 | Toxic for reproduction (Article 57(c)) |
| Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with \geq 0.1% w/w of 4-nonylphenol, branched and linear (4-NP) | - | - | Endocrine disrupting properties (Article 57(f) – environment) |
| 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any | - | - | Equivalent level of concern having probable serious effects to the env |



| | | | |
|---|-----------|---------|---|
| of their individual isomers and combinations thereof) | | | environment (Article 57(f) - environment) Equivalent level of concern having probable serious effects to human health (Article 57(f) – human health) |
| 4-tert-butylphenol | 202-679-0 | 98-54-4 | Endocrine disrupting properties (Article 57(f) – environment) |

■ **The Announcement of the 22nd 4 SVHC List**

The ECHA has added four more chemical Substances of Very High Concern (SVHC) to the Candidate List on 16th January 2020.

The list of these four SVHCs and SVHC property are shown below:

| Substance name | EC No. | CAS No. | SVHC property |
|--|-----------|-------------|--|
| Perfluorobutane sulfonic acid (PFBS) and its salts | - | - | Equivalent level of concern having probable serious effects to human health (Article 57(f) - human health) Equivalent level of concern having probable serious effects to the environment (Article 57(f) - environment) |
| Diisohexyl phthalate | 276-090-2 | 71850-09-4 | Toxic for reproduction (Article 57c) |
| 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one | 400-600-6 | 71868-10-5 | Toxic for reproduction (Article 57c) |
| 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone | 404-360-3 | 119313-12-1 | Toxic for reproduction (Article 57c) |

- According to REACH regulation, all EU manufacturers or importers of the 205 SVHCs should fulfill either one of the following regulatory obligations:
 1. should supply Safety Data Sheet (SDS/MSDS) to their downstream users when the SVHC concerned is sold as a substance on itself; or
 2. should supply SDS/MSDS to their downstream users when the SVHC concerned is produced or imported at or above 0.1% w/w in a mixture or preparation; or
 3. should supply the product recipient or in request of the product consumers, with available sufficient information, free of charge, which covers at least the name of the substance, within 45 days on receiving the request, if the SVHC is above 0.1% w/w threshold in an article.
- All EU manufacturers or importers must submit a notification for SVHCs placed on EU market before June 1, 2011 to European Chemicals Agency (ECHA), if the substance is produced or imported above the quantity of 1 tonne per year and its concentration percentage in the article above the threshold of 0.1% w/w.

Contact us

CIRS-C&K Testing

Web : www.cirs-ck.com/en
 Phone: +86-571-87206587
 FAX: +86-571-89900719
 E-mail: test@cirs-group.com

CIRS Ireland

Web: www.cirs-reach.com
 Phone: +353 (1) 477 3710
 FAX: +353 (1) 477 3710
 E-mail: service@cirs-reach.com