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Title

## **Requirement - List of Hazardous Chemical Substances**



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## 1 Introduction

This requirement applies to Saab Group and its supply chain.

The document identifies substances or groups of substances which use is banned or restricted.

Requirement documents and guidelines with definitions are available at the Saab Group Supplier Portal ([www.saabgroup.com/supplier](http://www.saabgroup.com/supplier)).

The purpose of the list is to ensure that the Saab Group is in compliance with existing and anticipated environmental legislation, customer requirements and also to fulfill the intentions of our environmental policy.

## 2 List of Hazardous Chemical Substances

### 2.1 Interpretation of hazardous chemical substances list

Substances whose use is banned (**banned substances**):

Banned substances shall not in any instance be used in products (articles) and chemical products. The ban applies to every conscious use of the banned chemical substances. The ban does not apply if the substance forms a contaminant of low concentration.

Substances whose use shall be limited (**restricted substances**):

A detailed evaluation shall be performed to determine if it is possible to use a less hazardous chemical substance in products (articles) and before chemical products containing such a limited substance are put into use. The limitation applies for every conscious use. The restriction does not apply if the substance forms a contaminant of low concentration.

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## 2.2 Comments of terms in the substance table

REACH is a regulation (No. 1907/2006) of the European Union, adopted to improve the protection of human health and the environment from the risks that can be posed by chemical substances. The European Chemical Agency (ECHA) has published a list of substances of Very High Concern (SVHC) that are identified as candidates for Authorisation. This list is known as the Candidate List. ECHA has also published a list of substances, in Annex XIV, that will be banned from sale and/or use unless Authorisation for continuing use is obtained in advance. In Annex XVII to REACH there is a list of restricted substances. Each entry, in the list, shows the substance or group of substances or the mixture, and the conditions of their restriction and date of inclusion in the candidate list.

Main risks; A = Allergy, C = Cancer, T = Toxic, E = Environmentally hazardous, N = Neurotoxic, O = Ozone depleting, R = Reproductive hazards.

## 2.3 List of substances

Substance name	Cas-no	Field of application	Main Risks	Comments/Note
<b>Acids, surface treatment etc.</b>				
<i>Substances whose use shall be limited</i>				
Azo colourant and azo dyes which form certain aromatic amines	Several	In textile and leather applications	C	REACH Annex XVII <sup>3)</sup>
Boric acid	10043-35-3 11113-50-1	Surface treatment, film developers, soldering products	R	Candidate Sub. <sup>1)</sup> 2010-06-18
Diboron trioxide, boric oxide	1303-86-2	Used in herbicides, fire resistant additive for paints, electronics	R	Candidate Sub. <sup>1)</sup> 2012-06-18
Boron sodium oxide (B <sub>4</sub> Na <sub>2</sub> O <sub>7</sub> ), hydrate	12267-73-1	Multitude of applications	R	Candidate Sub. <sup>1)</sup> 2010-06-18
Cyanides	Several	Surface treatment	E, T	

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Substance name	Cas-no	Field of application	Main Risks	Comments/Note
Disodium tetraborate, anhydrous (Borax)	1330-43-4 12179-04-3 1303-96-4	Surface treatment, detergents, cleaners	R	Candidate Sub. <sup>1)</sup> 2010-06-18
Ethylenediamine (EDA)	107-15-3	Surface treatment and paint	A	Candidate Sub. <sup>1)</sup> 2018-06-27
Hydrofluoric acid	7664-39-3	Pickling, etching	T	
Methoxy acetic acid	625-45-6	Chemical synthesis	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Sodium perborate; perboric acid, sodium salt (EC 239-172-9, 234-390-0)	15120-21-5 11138-47-9 10322-33-9 13517-20-9 10486-00-7	Bleaching agent in laundry detergent	R	Candidate Sub. <sup>1)</sup> 2014-06-16
Sodium peroxometaborate	7632-04-4	Bleaching agent in laundry detergent	R	Candidate Sub. <sup>1)</sup> 2014-06-16

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<b>Acids, surface treatment etc.</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
<i><b>Substances which must not be used</b></i>				
Arsenic acid	7778-39-4	Wood preservative,	E, T	Candidate Sub. <sup>1)</sup> 2011-12-19 REACH Annex XVII <sup>3)</sup> REACH Annex XIV <sup>8)</sup> Authorisation needed after 22 Aug. 2017
Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid	7738-94-5 13530-68-2	Surface treatment	A, C, R, E, T	Candidate Sub. <sup>1)</sup> 2010-12-15 Authorisation needed after 21 Sept. 2017
Dichromium tris(chromate)	24613-89-6	Surface treatment	A, C, E	Candidate Sub. <sup>1)</sup> 2011-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 22 Jan. 2019

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<b>Hardeners, monomers</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
<i>Substances whose use shall be limited</i>				
4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	Intermediate for the production of paints and dyes	C	Candidate Sub. <sup>1)</sup> 2012-06-18
4,4'-isopropylidenediphenol (bisphenol A, BPA)	80-05-7	Monomer used in production of epoxy and polycarbonate polymers	A, R	Candidate Sub. <sup>1)</sup> 2017-01-12
Acid anhydrides (see also below)	Several	Epoxy systems	A	Provision AFS 2014:43 <sup>6)</sup>
Acrylamide	79-06-1	Monomer	C	Candidate Sub. <sup>1)</sup> 2010-03-30
Diuron	330-54-1	Accelerator in composite	E, T, C	
Hexahydromethylphthalic anhydride	25550-51-0 19438-60-9 48122-14-1 57110-29-9	Epoxy systems		Candidate Sub. <sup>1)</sup> 2012-12-19 Provision AFS 2014:43 <sup>6)</sup>
Cyclohexane-1,2-dicarboxylic anhydride, hexahydrophthalic anhydride	85-42-7 13149-00-3 14166-21-3	Epoxy systems		Candidate Sub. <sup>1)</sup> 2012-12-19 Provision AFS 2014:43 <sup>6)</sup>
2-Methoxyaniline	90-04-0	Production of azo dyes and pigments	C	Candidate Sub. <sup>1)</sup> 2011-12-19
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	Intermediate for the production of paints and dyes	C	Candidate Sub. <sup>1)</sup> 2012-06-18
Propylene oxide (Methyloxirane)	75-56-9	Monomer used in production of polymers	C	Candidate Sub. <sup>1)</sup> 2012-12-19
β-TGIC	59653-74-6	Triglycidylisocyanurate (TGIC) is used in powder coatings	A, R	Candidate Sub. <sup>1)</sup> 2012-06-18
TGIC	2451-62-9	Triglycidylisocyanurate (TGIC) is used in powder coatings	A, R	Candidate Sub. <sup>1)</sup> 2012-06-18

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<b>Hardeners, monomers</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
Toluenediisocyanate (2,4-)	584-84-9	Adhesive, paint	A, T	
Toluenediisocyanate (2,6-)	91-08-7	Adhesive, paint	A, T	
<b><i>Substances which must not be used</i></b>				
2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	Curing agent and cross-linker in polyurethane systems	C, E	Candidate Sub. <sup>1)</sup> 2011-12-19 Provision AFS 2014:43 <sup>6)</sup> REACH Annex XIV <sup>8)</sup> Authorisation needed after 22 Nov. 2017
Metylenedianiline (4,4'-) (MDA)	101-77-9	Composite	E, T, C	Candidate Sub. <sup>1)</sup> 2008-10-28 Provision AFS 2014:43 <sup>6)</sup> REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Aug. 2014
Polymer of formaldehyde and aniline (PMDA)	25214-70-4	Precursor to methylene diphenyldiisocyanate (MDI), epoxy systems	E, T, C	Candidate Sub. <sup>1)</sup> 2011-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 22 Aug. 2017

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Lubricants, biocides, preservative etc.	Cas-no	Field of application	Main Risks	Comments/Note
<i>Substances whose use shall be limited</i>				
Anthracene	120-12-7	In pyrotechnic products	E	Candidate Sub. <sup>1)</sup> 2008-10-28
Anthracene oil and paste	90640-80-5 91995-17-4 91995-15-2 90640-82-7 90640-81-6	Manufacture of other substances (carbon black), impregnating, corrosion protection	C, E	Candidate Sub. <sup>1)</sup> 2010-01-13 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 Oct. 2020
Benz[a]anthracene	56-55-3	Belongs to the group Polycyclic aromatic hydrocarbons (PAH)	C, E	Candidate Sub. <sup>1)</sup> 2018-01-15
Benzo[def]chrysene (Benzo[a]pyrene, BaP)	50-32-8	Belongs to the group Polycyclic aromatic hydrocarbons (PAH)	C, R, E	Candidate Sub. <sup>1)</sup> 2016-06-20
Benzo[ghi]perylene	191-24-2	Belongs to the group Polycyclic aromatic hydrocarbons (PAH)	E	Candidate Sub. <sup>1)</sup> 2018-06-27
Benzo[k]fluoranthene	207-08-9	Belongs to the group Polycyclic aromatic hydrocarbons (PAH)	C	Candidate Sub. <sup>1)</sup> 2019-01-15
Chrysene	218-01-9	Belongs to the group Polycyclic aromatic hydrocarbons (PAH)	C, E	Candidate Sub. <sup>1)</sup> 2018-01-15
Butylhydroxytoluene (BHT)	128-37-0	In lubricants	E	
Chlorocresol, -meta	59-50-7	Biocide	E, A	
Chlorocresol, -ortho	1570-64-5	Biocide	E	
Chloromethyl isothiazolinone	26172-55-4	Biocide in aqueous sol.	A	
Colophony	Several	In adhesives, cutting fluids	A	
Creosotes	Several	Wood preservative	T	
Diphenylamine	122-39-4	In lubricants	E, T	
Disodium octaborate	12008-41-2	Biocide	R	Candidate Sub. <sup>1)</sup> 2018-06-27



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Lubricants, biocides, preservative etc.	Cas-no	Field of application	Main Risks	Comments/Note
<u>Fluoranthene</u>	206-44-0, 93951-69-0	Belongs to the group Polycyclic aromatic hydrocarbons (PAH)	E	Candidate Sub. <sup>1)</sup> 2019-01-15
Formaldehyde	50-00-0	Preservative, fungicide	A; T	
Methyl isothiazolinone	2682-20-4	Biocide in aqueous sol.	A	
Mineral oils with PAH's (IP 346 DMSO extract $\geq$ 3%)	Several	Base oils, lubricants, etc.	C	
<u>Phenanthrene</u>	85-01-8	Belongs to the group Polycyclic aromatic hydrocarbons (PAH)		Candidate Sub. <sup>1)</sup> 2019-01-15
p-(1,1-dimethylpropyl)phenol	80-46-6	Used for microbiological protection of water based products and as a chemical Intermediate	A	Candidate Sub. <sup>1)</sup> 2017-01-12
Pitch, coal tar	65996-93-2	Manufacture of other substances	C, E	Candidate Sub. <sup>1)</sup> 2010-01-13 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 Oct. 2020
<u>Pyrene</u>	129-00-0, 1718-52-1	Belongs to the group Polycyclic aromatic hydrocarbons (PAH)		Candidate Sub. <sup>1)</sup> 2019-01-15
Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear	93925-00-9	Used in lubricants and greases		Candidate Sub. <sup>1)</sup> 2018-01-15
Sodium nitrite	7632-00-0	Anti-rust agent	C	
Trixylyl phosphate	25155-23-1	Hydraulic fluids, plasticizer	R	Candidate Sub. <sup>1)</sup> 2013-12-16



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Lubricants, biocides, preservatives etc.	Cas-no	Field of application	Main Risks	Comments/Note
<i>Substances which must not be used</i>				
Alkanes, C10-13, chloro	85535-84-8	In oils, fire retardants	E, C	Candidate Sub. <sup>1)</sup> 2008-10-28 POP REGULATION (EC) No 850/2004 <sup>2)</sup>
Chlorinated paraffins	Several	In oils, fire retardants	E	
Polychlorinated biphenyls (PCBs)	1336-36-3	Insulators, oils	E	POP REGULATION (EC) No 850/2004 <sup>2)</sup>
Polychlorinated terphenyls (PCTs)	61788-33-8	In oils, fire retardants	E	REACH Annex XVII <sup>3)</sup>
Polychlorinated naphthalenes	70776-03-3	In oils, fire retardants	E	POP REGULATION (EC) No 850/2004 <sup>2)</sup>

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Solvents/Cooling agents	Cas-no	Field of application	Main Risks	Comments/Note
<b><i>Substances whose use shall be limited</i></b>				
1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	Solvent in organic reactions, in oil products for motor vehicles	R	Candidate Sub. <sup>1)</sup> 2012-06-18
1-bromopropane (n-propyl bromide, nPB)	106-94-5	Solvent for vapour degreasing and cleaning	R	Candidate Sub. <sup>1)</sup> 2012-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 July 2020
1,2-Diethoxyethane, Ethylenglycoldiethylether (EGDEE)	629-14-1	Solvent in paint	R	Candidate Sub. <sup>1)</sup> 2012-12-19
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	Solvent and in use in the production of chemicals, electrolyte in Lithium batteries	R	Candidate Sub. <sup>1)</sup> 2012-06-18
1,2,3 – Trichloropropane	96-18-4	For cleaning	C, R	Candidate Sub. <sup>1)</sup> 2011-06-20
1-methyl-2-pyrrolidone	872-50-4	Solvent, paint stripping	R	Candidate Sub. <sup>1)</sup> 2011-06-20 REACH Annex XVII <sup>3)</sup>
2-Ethoxyethanol	110-80-5	Solvent in paint	R	Candidate Sub. <sup>1)</sup> 2010-12-15
2-Ethoxyethanol acetate	111-15-9	Solvent in paint	R	Candidate Sub. <sup>1)</sup> 2011-06-20
2-Methoxyethanol	109-86-4	Solvent in paint	R	Candidate Sub. <sup>1)</sup> 2010-12-15 Provision AFS 2014:43 <sup>6)</sup>
2-Methoxyethanol acetate	110-49-6	Solvent in paint	R	Provision AFS 2014:43 <sup>6)</sup>
Benzene	71-43-2	Petrol, solvent	C	REACH Annex XVII <sup>3)</sup>
Chloroform	67-66-3	Solvent	C, R	REACH Annex XVII <sup>3)</sup>
Dimethylformamide	68-12-2	Solvent in sealants	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Formamide	75-12-7	Solvent	R	Candidate Sub. <sup>1)</sup> 2012-06-18
Furan	110-00-9	Solvent	C	Candidate Sub. <sup>1)</sup> 2012-12-19
HCFC's	Several	Solvents, Cooling agents	O	Ozone depleting substances <sup>5)</sup>

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Solvents/Cooling agents	Cas-no	Field of application	Main Risks	Comments/Note
Hexane	110-54-3	Solvent	N	
Hydrazine	302-01-2	Rocket fuel, corrosion inhibitor	C, E, T	Candidate Sub. <sup>1)</sup> 2011-06-20 Provision AFS 2014:43 <sup>6)</sup>
Limonene	Several	For cleaning, degreaser	A, E	
N,N-dimethylacetamide (DMAC)	127-19-5	Solvent in sealants and used in the production of fibres/films	R	Candidate Sub. <sup>1)</sup> 2011-12-19
Tetrachloroethylene	127-18-4	Solvent	C	
<b><i>Substances which must not be used</i></b>				
1,2-Dichloroethane	107-06-2	Production of vinyl chloride, solvent, paint stripping	C	Candidate Sub. <sup>1)</sup> 2011-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 22 Nov. 2017
2,4-dinitrotoluene	121-14-2	Used for production of TDI, in manufacture of explosives	C, E, T	Candidate Sub. <sup>1)</sup> 2010-01-13 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 August 2015
Bis(2-methoxyethyl) ether	111-96-6	Solvent in organic reactions	R	Candidate Sub. <sup>1)</sup> 2011-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 22 Aug. 2017
Carbon tetrachloride	56-23-5	Solvent	O, C, T	
CFC's	Several	Cooling agents	O	Ozone depleting substances <sup>5)</sup>
Chloropentafluoroethane (CFC 115)	76-15-3	For cleaning, release agent	O	Ozone depleting substances <sup>5)</sup>
Dichlorotetrafluoroethane (CFC 114)	76-14-2	For cleaning, release agent	O	Ozone depleting substances <sup>5)</sup>
Methylene chloride	75-09-2	Paint stripping	C	REACH Annex XVII <sup>3)</sup>

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Solvents/Cooling agents	Cas-no	Field of application	Main Risks	Comments/Note
Musk xylene	81-15-2	Consumer products	E, C	Candidate Sub. <sup>1)</sup> 2008-10-28 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Aug 2014
1,1,1-Trichloroethane	71-55-6	Solvent	O	Ozone depleting substances <sup>5)</sup>
Trichloroethylene	79-01-6	Degreasing	C	Candidate Sub. <sup>1)</sup> 2010-06-18 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 April. 2016
Trichlorotrifluoroethane (CFC 113)	76-13-1	For cleaning, release agent	O	Ozone depleting substances <sup>5)</sup>

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<b>Fibres</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
<b><i>Substances whose use shall be limited</i></b>				
Aluminosilicate Refractory Ceramic Fibres fulfilling the following conditions: a) Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> and ZrO <sub>2</sub> are present within the following conc. Ranges (w/w): Al <sub>2</sub> O <sub>3</sub> : 35-36 %, SiO <sub>2</sub> : 47.5-50 %, ZrO <sub>2</sub> : 15-17 %. b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometers (µm).	Several	Used for high temperature insulation	C	Candidate Sub. <sup>1)</sup> 2011-12-19 Fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008 and fulfilling given conditions
Zirconia Aluminosilicate Refractory Ceramic Fibres fulfilling the following conditions: a) Al <sub>2</sub> O <sub>3</sub> , SiO <sub>2</sub> and ZrO <sub>2</sub> are present within the following conc. Ranges (w/w): Al <sub>2</sub> O <sub>3</sub> : 35-36 %, SiO <sub>2</sub> : 47.5-50 %, ZrO <sub>2</sub> : 15-17 %. b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometers (µm).	Several	Used for high temperature insulation	C	Candidate Sub. <sup>1)</sup> 2011-12-19 Fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008 and fulfilling given conditions
<b><i>Substances which must not be used</i></b>				
Asbestos	Several	Insulating material	C	REACH Annex XVII <sup>3)</sup>

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<b>Tensides</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
<b><i>Substances whose use shall be limited</i></b>				
Alkylphenoethoxylate phosphate	Several	Anion tenside	E	
Alkylphenoethoxylate sulphate	Several	Anion tenside	E	
4-heptylphenol, branched and linear	Several	Can be used in lubricants and at manufacture of polymers.		Candidate Sub. <sup>1)</sup> 2017-01-12 Non-exhaustive list of Cas-no <sup>9)</sup>
Linear alkylbenzene sulfonate (LAS > C12)	Several	Anion tenside	E	
Quaternary alkyl ammonium compounds	Several	Kation tenside	E	
<b><i>Substances which must not be used</i></b>				
Nonylphenol all isomeric forms	Several	Used as etoxylated	E	REACH Annex XVII <sup>3)</sup>
4-Nonylphenol, branched and linear	Several	Used for production of surfactants, catalyst in epoxy	E	Candidate Sub. <sup>1)</sup> 2012-12-19 REACH Annex XVII <sup>3)</sup> Non-exhaustive list of Cas-no <sup>9)</sup>
4-Nonylphenol, branched and linear, etoxylated	Several	Production of surfactants	E	Candidate Sub. <sup>1)</sup> 2013-06-20 Non-exhaustive list of Cas-no <sup>9)</sup> REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 Jan. 2021
Nonylphenoethoxylates	Several	Cleaning agent	E	REACH Annex XVII <sup>3)</sup>
4-tert-Octylphenol	140-66-9	Production of resins, non-ionic surfactants and rubber additives.	E	Candidate Sub. <sup>1)</sup> 2011-12-19

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Plasticizers	Cas-no	Field of application	Main Risks	Comments/Note
<i>Substances whose use shall be limited</i>				
Dicyclohexyl phthalate (DCHP)	84-61-7	Manufacturing of PVC, rubber and plastic articles	R	Candidate Sub. <sup>1)</sup> 2018-06-27
Diethyl phthalate	84-75-3	In adhesive, paint and plastics	R	Candidate Sub. <sup>1)</sup> 2013-12-16
Diisooheptyl phthalate (DIHP, 1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters (C7-rich))	71888-89-6	In adhesive, paint and plastics	R	Candidate Sub. <sup>1)</sup> 2011-06-20 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 July 2020
Dimethyl phthalate	131-11-3	In adhesive, paint and plastics	T	
Di-n-octyl phthalate(DNOP)	117-84-0	In adhesive, paint and plastics	E	
Di(2-metoxylethyl)phthalate	117-82-8	In adhesive, paint and plastics	E, R	Candidate Sub. <sup>1)</sup> 2011-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 July 2020
Di(heptyl, nonyl, undecyl) phthalate (DHNUP,1,2-Benzenedicarboxylic acid, di-C7-11-alkyl esters, branched and linear	68515-42-4	In adhesive, paint and plastics	R	Candidate Sub. <sup>1)</sup> 2011-06-20 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 July 2020
Di-n-pentyl phthalate (DNPP)	131-18-0	In adhesive, paint and plastics	R	Candidate Sub. <sup>1)</sup> 2013-06-20 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 July 2020
N-pentyl-isopentylphthalate	776297-69-9	In adhesive, paint and plastics	R	Candidate Sub. <sup>1)</sup> 2012-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 July 2020



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Plasticizers	Cas-no	Field of application	Main Risks	Comments/Note
Diisopentylphthalate (DIPP)	605-50-5	In adhesive, paint and plastics	R	Candidate Sub. <sup>1)</sup> 2012-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 July 2020
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	In adhesive, paint and plastics	R	Candidate Sub. <sup>1)</sup> 2012-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 July 2020
1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	In plastics and as a stabilizer in oils	R	Candidate Sub. <sup>1)</sup> 2014-06-16
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)	68515-51-5 68648-93-1	In plastics and as a stabilizer in oils	R	Candidate Sub. <sup>1)</sup> 2015-06-15
<b><i>Substances which must not be used</i></b>				
Butylbenzyl phthalate (BBP)	85-68-7	In adhesive, paint and plastics	E, R	Candidate Sub. <sup>1)</sup> 2008-10-28 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Febr. 2015
Diethylhexyl phthalate(DEHP)	117-81-7	In adhesive, paint and plastics	R	Candidate Sub. <sup>1)</sup> 2008-10-28 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Febr. 2015

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<b>Plasticizers</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
Diisobutyl phthalate	84-69-5	In adhesive, paint and plastics	R	Candidate Sub. <sup>1)</sup> 2010-01-13 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Febr. 2015
Di-n-butyl phthalate (DBP)	84-74-2	In adhesive, paint and plastics	E, R	Candidate Sub. <sup>1)</sup> 2008-10-28 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Febr. 2015

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Flame and Fire retardants	Cas-no	Field of application	Main Risks	Comments/Note
<b><i>Substances whose use shall be limited</i></b>				
Brominated flame retardants	Several	In textiles, plastics, etc	E	
Decabromodiphenyl ether (DecaBDE)	1163-19-5	In plastics	E	Candidate Sub. <sup>1)</sup> 2012-12-19
Dechlorane Plus	13560-89-9	In textiles, plastics, etc	E	Candidate Sub. <sup>1)</sup> 2018-01-15
Polybrominated diphenylethers (PBDE)	Several	In plastics	E	RoHS Directive <sup>7)</sup> POP REGULATION (EC) No 850/2004 <sup>2)</sup>
Tetrabrombisphenol A (TBBPA)	79-94-7	In composite material	E	
<b><i>Substances which must not be used</i></b>				
Halons	Several	Fire retardants	O	Ozone depleting substances <sup>5)</sup>
Octabromodiphenyl ether	32536-52-0	In plastics	E	RoHS Directive <sup>7)</sup>
Hexabromocyclododecane (HBCDD) and all isomers	25637-99-4 3194-55-6 134237-51-7 134237-50-6 134237-52-8	In plastics, mainly polystyrene	E	Candidate Sub. <sup>1)</sup> 2008-10-28 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 August 2015
Pentabromodiphenyl ether	32534-81-9	In plastics	E	RoHS Directive <sup>7)</sup>
Polybrominated biphenyl (PBB)	Several	In plastics	E, N, C	RoHS Directive <sup>7)</sup>
Tris(2-chloroethyl)phosphate	115-96-8	In plastics	R, E	Candidate Sub. <sup>1)</sup> 2010-01-13 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 August 2015

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<b>Metal compounds</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
<b><i>Substances whose use shall be limited</i></b>				
Antimony compounds	Several	In lubricants, composite and plastics	T, C	
Beryllium and its compounds	Several	In electric equipment	T, C	
Bis(tributyltin)oxide (TBTO)	56-35-9	Biocide, in polyurethane foam	E, T	Candidate Sub. <sup>1)</sup> 2008-10-28
Chromium(VI) and its compounds	Several	Surface treatment	A, C, R, E, T	RoHS Directive <sup>7)</sup>
Calcium arsenate	7778-44-1		C, T	Candidate Sub. <sup>1)</sup> 2011-12-19
Cobalt dichloride	7646-79-9	Surface treatment, solid lubricants	C, E	Candidate Sub. <sup>1)</sup> 2008-10-28
Cobalt(II) carbonate	513-79-1		C, T	Candidate Sub. <sup>1)</sup> 2010-12-15
Cobalt(II) diacetate	71-48-7	Surface treatment	C, T	Candidate Sub. <sup>1)</sup> 2010-12-15
Cobalt(II) dinitrate	10141-05-6	Surface treatment	C, T	Candidate Sub. <sup>1)</sup> 2010-12-15
Cobalt(II) sulphate	10124-43-3	Surface treatment, pigment	C, T	Candidate Sub. <sup>1)</sup> 2010-12-15
Acetic acid, lead salt, basic	51404-69-4	In electronic equipment	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Dioxobis(stearato)trilead	12578-12-0	Stabiliser in polymers (PVC)	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Fatty acids, C16-18, lead salts	91031-62-8	Stabiliser in polymers (PVC)	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Pentalead tetraoxide sulphate	12065-90-6	Stabiliser in polymers (PVC), lead batteries	R	Candidate Sub. <sup>1)</sup> 2012-12-19
[Phthalate(2-)]dioxotrilead	69011-06-9	Stabiliser in polymers (PVC)	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Pyrochlore, antimony lead yellow (Pigment Yellow 41)	8012-00-8	Pigment (glass, plastics, ceramics)	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Silicic acid (H <sub>2</sub> Si <sub>2</sub> O <sub>5</sub> ), barium salt (1:1), lead-doped	68784-75-8	Coating of glass lamp bulbs	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Sulfurous acid, lead salt, dibasic	62229-08-7	Stabiliser in polymers (PVC)	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Trilead dioxide phosphonate	12141-20-7	Stabiliser in polymers (PVC)	R	Candidate Sub. <sup>1)</sup> 2012-12-19

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<b>Metal compounds</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
Tetraethyllead	78-00-2	Formulations of fuel additives and fuel blends	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Tetralead trioxide sulphate	12202-17-4	Stabiliser in polymers (PVC), lead batteries	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Lead and its compounds	Several	Pigment in paint, soldering	N, E, R	RoHS Directive <sup>7)</sup>
Lead	7439-92-1	Alloys, batteries, soldering	R	Candidate Sub. <sup>1)</sup> 2018-06-27
Lead azide	13424-46-9	Initiator in detonators and pyrotechnic devices	R; E	Candidate Sub. <sup>1)</sup> 2011-12-19
Lead(II) bis(methanesulfonate)	17570-76-2	Catalyst, electroplating and other electronic applications	E, R	Candidate Sub. <sup>1)</sup> 2012-06-18
Lead bis(tetrafluoroborate)	13814-96-5	Electrolytic lead plating	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Lead cyanamidate (Lead cyanamide)	20837-86-9		R	Candidate Sub. <sup>1)</sup> 2012-12-19
Lead di(acetate)	301-04-2	Coatings and paints, thinners, paint removes	R	Candidate Sub. <sup>1)</sup> 2013-12-18
Lead dipicrate	6477-64-1	Initiator in detonators and pyrotechnic igniters (fuzes)	R, E	Candidate Sub. <sup>1)</sup> 2011-12-19
Lead dinitrate	10099-74-8	Production of explosives	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Lead hydrogen arsenate	7784-40-9	Precursors to As containing components in electronics	C, R, T, E	Candidate Sub. <sup>1)</sup> 2008-10-28
Lead monoxide	1317-36-8	Used in production of stabilisers, batteries, crystal glass, ceramic	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Lead oxide sulfate	12036-76-9	Stabiliser in polymers (PVC)	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Lead silicate (Silicic acid, lead salt)	11120-22-2	Production of lead crystal ware	R	Candidate Sub. <sup>1)</sup> 2012-12-19

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<b>Metal compounds</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
Lead styphnate	15245-44-0	Initiator in detonators and pyrotechnic igniters (fuzes)	R, E	Candidate Sub. <sup>1)</sup> 2011-12-19
Lead tetraoxide (Orange lead)	1314-41-6	Used in production of stabilisers, batteries, crystal glass, ceramic and electronic devices, Initiator in detonators and pyrotechnic devices	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Lead titanium trioxide	12060-00-3	Electronic and optical products	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Lead titanium zirconium oxide	12626-81-2	Processing into electro-ceramic components	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Trilead bis(carbonate) dihydroxide	1319-46-6	Preparation of PTC Ceramic Materials	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Tinorganic compounds	Several	In hardener	T, E	REACH Annex XVII 3) 4)
Dibutyltin dichloride (DBTC)	683-18-1	Additive for the production of rubber tyres	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Diocetyl tin bis(2-ethylhexyl mercaptoacetate) DOTE	15571-58-1	Stabiliser for PVC	R	Candidate Sub. <sup>1)</sup> 2014-12-17
Reaction mass of DOTE and Octyltintris(2-ethylhexyl mercaptoacetate) MOTE	--	Stabiliser for PVC	R	Candidate Sub. <sup>1)</sup> 2014-12-17
Triethyl arsenat	15606-95-8	In electronic components (IC)	E, C, T	Candidate Sub. <sup>1)</sup> 2008-10-28
Trilead arsenate	3687-31-8			Candidate Sub. <sup>1)</sup> 2011-12-19

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<b>Metal compounds</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
<b><i>Substances which must not be used</i></b>				
Ammonium dichromate	7789-09-5		A, C, R, E, T	Candidate Sub. <sup>1)</sup> 2010-06-18 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Sept. 2017
Cadmium and its compounds	7440-43-9 (Cd) Several	Surface treatment	C, E	REACH Annex XVII <sup>3)</sup> RoHS <sup>7)</sup> Do not apply to cadmium plating in components in aerospace or in electrical contacts in critical applications Candidate Sub. <sup>1)</sup> 2013-06-20 (Cadmium)
Cadmium carbonate	513-78-0		C, R	Candidate Sub. <sup>1)</sup> 2018-01-15
Cadmium chloride	10108-64-2	Surface treatment	C, R	Candidate Sub. <sup>1)</sup> 2014-06-16
Cadmium fluoride	7790-79-6		C, R	Candidate Sub. <sup>1)</sup> 2014-12-17
Cadmium hydroxide	21041-95-2		C, R	Candidate Sub. <sup>1)</sup> 2018-01-15
Cadmium nitrate	10325-94-7		C, R	Candidate Sub. <sup>1)</sup> 2018-01-15
Cadmium oxide	1306-19-0		C	Candidate Sub. <sup>1)</sup> 2013-06-20
Chromium trioxide	1333-82-0	Surface treatment	A, C, R, E, T	Candidate Sub. <sup>1)</sup> 2010-12-15 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Sept. 2017
Cadmium sulphate	10124-36-4 31119-53-6		C, R	Candidate Sub. <sup>1)</sup> 2014-12-17
Cadmium sulphide	1306-23-6		C	Candidate Sub. <sup>1)</sup> 2013-12-16

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<b>Metal compounds</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
Mercury and its compounds	Several	In electric equipment	N, E	REACH Annex XVII <sup>3)</sup> RoHS <sup>7)</sup> EU 2017/852 Restrictions <sup>10)</sup>
Diarsenic pentaoxide	1303-28-2	In electric equipment, biocides	E, C, T	Candidate Sub. <sup>1)</sup> 2008-10-28 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 May 2015
Diarsenic trioxide	1327-53-3	In glass material, pesticide	E, C, T	Candidate Sub. <sup>1)</sup> 2008-10-28 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 May 2015
Lead chromate	7758-97-6	Pigment in paint	C, R, E	Candidate Sub. <sup>1)</sup> 2010-01-13 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 May 2015
Lead chromate molybdate sulphate red	12656-85-8	Pigment in paint	C, R, E	Candidate Sub. <sup>1)</sup> 2010-01-13 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 May 2015
Lead sulfochromate yellow	1344-37-2	Pigment in paint	C, R, E	Candidate Sub. <sup>1)</sup> 2010-01-13 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 May 2015
Pentazinc chromate octahydroxide (basic zinc chromate)	49663-84-5	In Primers	A, C, E	Candidate Sub. <sup>1)</sup> 2011-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 22 Jan. 2019



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<b>Metal compounds</b>	<b>Cas-no</b>	<b>Field of application</b>	<b>Main Risks</b>	<b>Comments/Note</b>
Potassium chromate	7789-00-6	Surface treatment	A, C, R, E	Candidate Sub. <sup>1)</sup> 2010-06-18 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Sept. 2017
Potassium dichromate	7778-50-9	Surface treatment	A, C, R, E, T	Candidate Sub. <sup>1)</sup> 2010-06-18 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Sept. 2017
Potassium hydroxyoctaoxodizincatedichromate	11103-86-9	In Primers	A, C, E	Candidate Sub. <sup>1)</sup> 2011-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 22 Jan. 2019
Sodium chromate	7775-11-3	Surface treatment	A, C, R, E, T	Candidate Sub. <sup>1)</sup> 2010-06-18 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Sept. 2017
Sodium dichromate	7789-12-0 10588-01-9	Surface treatment	A, C, R, E, T	Candidate Sub. <sup>1)</sup> 2008-10-28 REACH Annex XIV <sup>8)</sup> Authorisation needed after 21 Sept. 2017
Strontium chromate	7789-06-2	In Primers	C, E	Candidate Sub. <sup>1)</sup> 2011-06-20 REACH Annex XIV <sup>8)</sup> Authorisation needed after 22 Jan. 2019

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Fluorinated substances	Cas-no	Field of application	Main Risks	Comments/Note
<i>Substances whose use shall be limited</i>				
Heptacosafuorotetradecanoic acid	376-06-7		E	Candidate Sub. <sup>1)</sup> 2012-12-19
Pentacosafuorotridecanoic acid	72629-94-8		E	Candidate Sub. <sup>1)</sup> 2012-12-19
Henicosafuoroundecanoic acid	2058-94-8		E	Candidate Sub. <sup>1)</sup> 2012-12-19
Tricosafuorododecanoic acid	307-55-1		E	Candidate Sub. <sup>1)</sup> 2012-12-19
Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	335-76-2 3830-45-3 3108-42-7	Used in textiles, waterproofing agents	R	Candidate Sub. <sup>1)</sup> 2017-01-12
Perfluorohexane-1-sulphonic acid and its salts (PFHxS)	Several		E	Candidate Sub. <sup>1)</sup> 2017-01-12 Non-exhaustive list of Cas-no <sup>9)</sup>
Perfluorononan-1-oic-acid and its sodium and ammonium salts	375-95-1, 21049-39-8 4149-60-4	Processing aid for fluoropolymer manufacture/lubricating oil additive/surfactant for fire extinguishers/cleaning agent/textile antifouling finishing agent/polishing surfactant/waterproofing agents and in liquid crystal display panels	R, E	Candidate Sub. <sup>1)</sup> 2015-12-17



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Fluorinated substances	Cas-no	Field of application	Main Risks	Comments/Note
Ammoniumpentadecafluorootanoate (APFO)	3825-26-1		E	Candidate Sub. <sup>1)</sup> 2013-06-20
Perfluorooctanic acid (PFOA)	335-67-1	Process aids in the manufacture of different fluoropolymers	E	Candidate Sub. <sup>1)</sup> 2013-06-20 REACH Annex XVII <sup>3)</sup>
<b><i>Substances which must not be used</i></b>				
Perfluorooctanic sulfonic acid and its derivatives (PFOS)	Several	Surface coatings, polish, fire fighting foam	E	POP REGULATION (EC) No 850/2004 <sup>2)</sup>

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Others	Cas-no	Field of application	Main Risks	Comments/Note
<i>Substances whose use shall be limited</i>				
Radioactive substances	Several	Optical and measuring devices, detectors	-	
4-aminoazobenzene	60-09-3	Production of pigment, azo dye	C	Candidate Sub. <sup>1)</sup> 2012-12-19 Provision AFS 2014:43 <sup>6)</sup>
3-benzylidene camphor	15087-24-8	UV-filter in cosmetics		Candidate Sub. <sup>1)</sup> 2019-01-15
2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1	Light stabilization in polymers	E	Candidate Sub. <sup>1)</sup> 2014-12-17
2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	Light stabilization in polymers	E	Candidate Sub. <sup>1)</sup> 2015-12-17
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	Light stabilization in polymers	E	Candidate Sub. <sup>1)</sup> 2014-12-17
2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3	Light stabilization in polymers	E	Candidate Sub. <sup>1)</sup> 2015-12-17
Biphenyl-4-ylamine	92-67-1		C	Candidate Sub.1) 2012-12-19 Provision AFS 2014:43 <sup>6)</sup>
2,2-bis(4'-hydroxyphenyl)-4-methylpentane	6807-17-6		R	Candidate Sub. <sup>1)</sup> 2019-01-15
4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	Intermediate in chemical synthesis	C A	Candidate Sub. <sup>1)</sup> 2012-12-19 Provision AFS 2014:43 <sup>6)</sup>
4,4'-methylenedi-o-toluidine	838-88-0	Intermediate in organic synthesis, azo dye	C	Candidate Sub. <sup>1)</sup> 2012-12-19
6-methoxy-m-toluidine (p-cresidine)	120-71-8	Intermediate in chemical synthesis	C	Candidate Sub. <sup>1)</sup> 2012-12-19
o-aminoazotoluene	97-56-3	Azo dye	C	Candidate Sub. <sup>1)</sup> 2012-12-19
o-toluidine	95-53-4	Intermediate in organic synthesis	C	Candidate Sub. <sup>1)</sup> 2012-12-19

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Others	Cas-no	Field of application	Main Risks	Comments/Note
4,4'-oxydianiline and its salts	101-80-4	Monomer	C	Candidate Sub. <sup>1)</sup> 2012-12-19
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	Manufacture of inks and paint for printing, dyeing of materials	C	Candidate Sub. <sup>1)</sup> 2012-06-18
C.I. Basic Blue 26, [4-[[4-anilino-1-naphthyl][4- (dimethylamino)phenyl]methylene]cyclohexa-2,5-dien- 1-ylidene] dimethylammonium chloride [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	Ink and paint, dyeing of materials	C	Candidate Sub. <sup>1)</sup> 2012-06-18
C.I. Basic Violet 3, 4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1- ylidene]dimethylammonium chloride [with ≥ 0.1% of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]*	548-62-9	Dye	C	Candidate Sub. <sup>1)</sup> 2012-06-18
C.I. Direct Black 38, Disodium 4-amino-3-[[4'-[(2,4- diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5- hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate	1937-37-7	Dye	C	Candidate Sub. <sup>1)</sup> 2013-12-16
C.I. Direct Red 28, Disodium 3,3'-[[1,1'-biphenyl]-4,4'- diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate)	573-58-0	Dye	C	Candidate Sub. <sup>1)</sup> 2013-12-16
C.I. Solvent Blue 4, α,α-Bis[4-(dimethylamino)phenyl]- 4 (phenylamino)naphthalene-1-methanol See *above	6786-83-0	Dye	C	Candidate Sub. <sup>1)</sup> 2012-06-18
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3- Oxazolidine	143860-04-2	Additive in urethane systems	R	Candidate Sub. <sup>1)</sup> 2012-12-19

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Others	Cas-no	Field of application	Main Risks	Comments/Note
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated	Several, 9002-93-1			Candidate Sub. <sup>1)</sup> 2012-12-19 REACH Annex XIV <sup>8)</sup> Authorisation needed after 4 Jan. 2021 Non-exhaustive list of Cas-no <sup>9)</sup>
Decamethylcyclotrasiloxane (D5)	541-02-6	Washing and cleaning products	E	Candidate Sub. <sup>1)</sup> 2018-06-27 REACH Annex XVII <sup>3)</sup>
Diazeno-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3			Candidate Sub. <sup>1)</sup> 2012-12-19
Diethyl sulphate	64-67-5	Intermediate in synthesis	C	Candidate Sub. <sup>1)</sup> 2012-12-19 Provision AFS 2014:43 6)
Dimethyl sulphate	77-78-1	Intermediate in synthesis	C	Candidate Sub. <sup>1)</sup> 2012-12-19 Provision AFS 2014:43 6)
Dodecamethylcyclohexasiloxane (D6)	540-97-6	In lubricants, sealants, washing and cleaning products	E	Candidate Sub. <sup>1)</sup> 2018-06-27
Imidazolidine-2-thione; (2-imidazoline-2-thiol)	96-45-7	In production of rubber	R	Candidate Sub. <sup>1)</sup> 2013-12-16
N-methylacetamide	79-16-3	Intermediate in synthesis	R	Candidate Sub. <sup>1)</sup> 2012-12-19
Oktametylcyklotetrasiloxan (D4)	556-67-2	In sealants	E	Candidate Sub. <sup>1)</sup> 2018-06-27 REACH Annex XVII <sup>3)</sup>
Phenolphthalein	77-09-8	pH indicator solutions	C	Candidate Sub. <sup>1)</sup> 2011-12-19
1,3-propanesultone	1120-71-4	Electrolyte fluid of lithium ion batteries	C	Candidate Sub. <sup>1)</sup> 2015-12-17
Propylene oxide (Methyloxirane)	75-56-9		C	Candidate Sub. <sup>1)</sup> 2012-12-19

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Others	Cas-no	Field of application	Main Risks	Comments/Note
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] (Trade name Karanal, Amber Dioxane)	Several, most common 117933-89-1	Used in applications from fine fragrances through to soaps and detergents	E	Candidate Sub. <sup>1)</sup> 2015-06-15
Nitrobenzene	98-95-3	Manufacture of other substances, mainly aniline	R, T	Candidate Sub. <sup>1)</sup> 2015-12-17
Terphenyl, hydrogenated	61788-32-7	In adhesive and sealants	E	Candidate Sub. <sup>1)</sup> 2018-06-27
<b><i>Substances which must not be used</i></b>				
Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	Pesticide	R	Candidate Sub. <sup>1)</sup> 2012-12-19

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### 3 Main source, legislation, directives to be used to identify the concerned substances

Note	Legislation, directive etc.
1	REACH Regulation: Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals Candidate List of substances of very high concern for Authorisation. <a href="https://echa.europa.eu/web/guest/candidate-list-table">https://echa.europa.eu/web/guest/candidate-list-table</a>
2	POP REGULATION (EC) No 850/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC <a href="http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02004R0850-20151204&amp;from=EN">http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02004R0850-20151204&amp;from=EN</a>
3	REACH Regulation: Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals List of restrictions according to Annex XVII. Each entry shows a substance or a group of substances or a substance in a mixture, and the consequent restriction conditions. <a href="https://echa.europa.eu/substances-restricted-under-reach">https://echa.europa.eu/substances-restricted-under-reach</a>
4	Commission Decision 2009/425. Restrictions on the use of tinorganic compounds (Organostannic compounds). <a href="http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:138:0011:0013:en:PDF">http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:138:0011:0013:en:PDF</a>
5	EC Regulation No 1005/2009 on substances that deplete the ozone layer. <a href="http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R1005&amp;from=EN">http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R1005&amp;from=EN</a>
6	Substance that may only be handled under the authorization of the Swedish Work Environment Authority according to the provision AFS 2014:43 (Only in Swedish).
7	RoHS Directive – <a href="http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:174:0088:0110:en:PDF">http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:174:0088:0110:en:PDF</a>
8	REACH Regulation: Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals List of substances included in Annex XIV ("Authorisation List"). Use of the substance is banned after sunset date, unless there is an authorisation for the specific use. <a href="https://echa.europa.eu/authorisation-list">https://echa.europa.eu/authorisation-list</a>



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Note	Legislation, directive etc.
9	Group entry for which numerical identifiers (Cas-no) have not been specified. Non-exhaustive lists of relevant numerical identifiers can be found on ECHA web-site for many group entries.
10	REGULATION (EU) 2017/852 on mercury <a href="http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R0852">http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R0852</a>

#### 4 Change History

Issue	Date	Change
1	2011-03-22	First issue of <a href="#">GMS-0110</a> replaced DIR-C-101 App.
2	2012-01-22	Inclusion of candidate substances published by ECHA 2011-12-19.
3	2012-08-24	Inclusion of candidate substances published by ECHA 2012-06-18.
4	2013-05-20	Inclusion of candidate substances published by ECHA 2012-12-19. New chapters added (Introduction, Interpretation of hazardous chemical substances list, comments of terms in table and Change information).
5	2013-11-05	Inclusion of candidate substances published by ECHA 2013-06-20.
6	2014-01-21	Inclusion of candidate substances published by ECHA 2013-12-16. Reference to requirements in <a href="#">GMS-0111</a> removed.
7	2014-10-24	Inclusion of candidate substances published by ECHA 2014-06-16. Information on sunset dates after decision 2014-08-14 (EU 895/2014).
8	2015-01-07	Inclusion of candidate substances published by ECHA 2014-12-17.
9	2015-08-28	Inclusion of candidate substances published by ECHA 2015-06-15.

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10	2016-01-14	<p>Inclusion of candidate substances published by ECHA 2015-12-17.</p> <p>Following substances deleted from the list;            1,4-Benzenediamine, N,N'-mixed phenyl and tolyl derives (BENPAT), 1,4-Benzenediamine, N,N'-mixed phenyl and xylyl derivatives (BENPATAX), 1,4-Benzenediamine, N,N'-mixed tolyl and xylyl derivatives (BENTAX) and Trisodium arsenat. These substances were proposed as candidate substances but are still under evaluation.</p> <p>Ammoniumpentadecafluorootanoate (APFO) and Perfluorooctanic acid (PFOA) – change from banned to restricted.</p> <p>Metylenedianiline (4,4'-) (MDA, 2,4-dinitrotoluene, Musk xylene, Butylbenzyl phthalate (BBP), Diethylhexyl phthalate (DEHP), Diisobutyl phthalate, Di-n-butyl phthalate (DBP), Hexabromocyclododecane (HBCDD) and all isomers, Tris(2-chloroethyl)phosphate, Diarsenic pentaoxide, Diarsenic trioxide, Lead chromate, Lead chromate molybdate sulphate red, Lead sulfochromate yellow – change from restricted to banned.</p> <p>Reference to POP REGULATION (EC) No 850/2004 added.</p>
11	2017-08-30	<p>Inclusion of candidate substances published by ECHA 2016-06-20, 2017-01-12 and 2017-07-07.</p> <p>Note 9 added – reference to non-exhaustive list of relevant numerical identifiers (Cas no) for group entries.</p> <p>Information on sunset dates added according to regulation EU 2017/999.</p> <p>Note added to PFOA (Cas no 335-67-1) regarding new restrictions in Annex XVII.</p>
12	2018-02-06	Inclusion of candidate substances published by ECHA 2018-01-15.
13	2019-03-18	<p>Inclusion of candidate substances published by ECHA 2018-06-27 and 2019-01-15.</p> <p>Change from restricted to banned on substances with passed sunset date. Comment added to reference 8 regarding Annex XIV.</p>