

**Work Package 2 “Identification of relevant target substances in BREFs”
of the HAZBREF project funded by Interreg Baltic Sea Region**

Report

**Approaches for a better use of available data to prevent or reduce releases of substances of concern from
industrial installations**

Annex 2



Evaluation of hazardous substances from various lists

Refer to Chapter 3 of the WP 2 report “Approaches for a better use of available data to prevent or reduce releases of substances of concern from industrial installations”.

Table 1: REACH substances of very high concern (SVHC) and WFD priority substances with registered uses in textile industry¹ as per ECHA database²

Substance	CAS	Classified as SVHC / WFD priority substance	Use in textile sector according to ECHA/SPIN database	Fate in wastewater treatment plant	Assessment regarding application in the textile sector / Occurrence in case studies
Dichloromethane	75-09-2	WFD PS	ECHA: washing & cleaning products, manufacture of textile, leather or fur. amounts used not known EU Source screening (WFD 2010): textiles not mentioned SPIN: no info on textile use	4,9% to surface water 0,1% to sludge 65,8% biodegradation 29,2% volatilisation	Solvent cleaning, can still contained in stain removers
Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE)	1163-19-5	SVHC	ECHA: inks and toners and washing & cleaning products and manufacture of textile, leather or fur. SPIN: no use after 2012.	Not evaluated in HAZBREF 2.2	Use banned, should not be used anymore
Cobalt dichloride	7646-79-9	SVHC	ECHA: textile treatment products and dyes. SPIN: no textile related use	Not evaluated in HAZBREF 2.2	Cobalt can be contained as central atom in cobalt phthalocyanine dyestuffs but not as cobalt dichloride
Potassium dichromate	7778-50-9	SVHC	ECHA: textile treatment products and dyes. SPIN: no textile related use	Not evaluated in HAZBREF 2.2	Wool dyeing in some Italian industries

¹) Substance is highlighted in “red” are not addressed in the ongoing revision of the TXT BREF. For this assessment the study “Preliminary determination of Key Environmental Issues for the Textiles Industry” (Ricardo Energy & Environment, 17 Jan 2018), the questionnaire developed for collecting data from reference plants for the revision of the TXT BREF (EIPPCB, February 2019) and Draft 1 of the TXT BREF (EIPPCB, December 2019) were considered.

²) Use information (in which applications and amount of used) have been searched from ECHA database in 2018/2019.

Substance	CAS	Classified as SVHC / WFD priority substance	Use in textile sector according to ECHA/SPIN database	Fate in wastewater treatment plant	Assessment regarding application in the textile sector / Occurrence in case studies
N,N-dimethylformamide	68-12-2	SVHC	ECHA: manufacture of textiles, leather or fur. Updated information in ECHA website (searched 5.2.2020): no textile related uses. SPIN: no textile related uses after 2007.	Not evaluated in HAZBREF 2.2	DMF may be used in the formulation of surfactants, liquid dyes and fluorescent whitening agents (optical brighteners). It is also the solvent used during the manufacture of acrylic fibres and some plastics, as well as the main part of the solvent mixture or exclusively the solvent for polyurethane coatings. Present in 1 Case Study installation (Optical Brightener)
N,N-dimethylacetamide	127-19-5	SVHC	ECHA: manufacture of textile, leather or fur. Updated information in ECHA website (searched 5.2.2020): no textile related uses. SPIN: no textile uses	22,5% to surface water 0,1% to sludge 77,4% biodegradation 0% volatilisation	DMAC is used as the main solvent for elastane fibres and sometimes in wet spinning of polyacrylonitrile fibres, and may be used as a solvent for adhesives or coatings
Decamethylcyclopentasiloxane (D5)	541-02-6	SVHC	ECHA: washing & cleaning products, textile treatment products and dyes, manufacture of textile, leather or fur. SPIN: no textile use after 2007	2,0% to surface water 74,9% to sludge 0% biodegradation 23,1% volatilisation	May be used in formulations for certain final finishing agents Present in 1 Case Study installation (Softener)
Cobalt(II) sulphate	10124-43-3	SVHC	ECHA: textile treatment products and dyes. SPIN: no textile use	Not evaluated in HAZBREF 2.2	Cobalt can be contained as central atom in cobalt phthalocyanine dyestuffs but not as cobalt sulphate
Phenolphthalein	77-09-8	SVHC	ECHA: textile treatment products and dyes, washing & cleaning products, manufacture of textile, leather or fur. SPIN: no textile use	Not evaluated in HAZBREF 2.2	Not used for textile finishing
1-Methyl-2-pyrrolidone (NMP)	872-50-4	SVHC	ECHA: washing & cleaning products SPIN: manufacture of textiles, manufacture of furniture	8,0% to surface water 0% to sludge 92% biodegradation 0% volatilisation	May be contained in some levelling agents for dyeing

Substance	CAS	Classified as SVHC / WFD priority substance	Use in textile sector according to ECHA/SPIN database	Fate in wastewater treatment plant	Assessment regarding application in the textile sector / Occurrence in case studies
Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate) (C.I. Direct Red 28)	573-58-0	SVHC	ECHA: dye, pigment, wool, cotton, Updated information in ECHA website (searched 5.2.2020): no information about the use of this substance. SPIN: no textile use	Not evaluated in HAZBREF 2.2	Restricted/ forbidden dyestuff
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) ³	1937-37-7	SVHC	ECHA: dye for colouring cellulose, wool, silk, bast, print cellulose, wool and silk, leather, plastics, stain wool, silk, acetate, nylon and production of aqueous inks. Updated information in ECHA website (searched 5.2.2020): no information about the use of this substance. SPIN: no textile use	Not evaluated in HAZBREF 2.2	Restricted/ forbidden dyestuff
Hexabromocyclododecane (HBCDD)	-	SVHC, WFD PHS Textile use banned	ECHA: textile treatment products and dyes, manufacture of furniture, textile, leather or fur. SPIN: no textile use after 2015 (1,2,5,6,9,10-hexabromocyclododecane CAS: 3194-55-6)	Not evaluated in HAZBREF 2.2	Use banned, should not be used anymore

³⁾ The dyes included in table 3 are two examples of a wide number of banned dyes (which are listed in sector specific MRSL (manufacturing restricted substance lists), like ZDHC MRSL).

Table 2. REACH substances of very high concern (SVHC) and WFD priority substances (PS)/priority hazardous substances (PHS) which have registered uses in STM industry in the ECHA chemical database (ECHA CHEM) and Nordic SPIN database. Annex XV = substance specific dossiers on “Proposal for identification of a substance as a category 1A or 1B CMR, PBT, vPvB or a substance of an equivalent level of concern” under REACH Annex XV, available in the ECHA CHEM separately from the REACH registration information.

Substance (SVHC / WFD substance)	CAS	Already addressed in existing BREF		Found from HAZBREF case study plants		Fate in wastewater treatment plant ⁵	
			Use in STM sector (ECHA CHEM and/or SPIN)		Total imported or manufactured for all uses in EU (ECHA CHEM) or for STM in Nordic countries (SPIN) ⁴	Other information	

⁴⁾ Information taken from ECHA chemical database (<https://echa.europa.eu/fi/information-on-chemicals>) 20.3.2020, indicates total imported/manufactured amount in EU (tons per year) in all uses, no information on use specifically in STM sector. The years of the information which the data are based on is unknown.

Information taken from SPIN database (<http://spin2000.net/>) 24.3.2020, indicates total imported/produced volume in STM sector in the Nordic Countries in one particular year (tons per year).

⁵⁾ HAZBREF 2.2 report

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
1,2-Benzene-dicarboxylic acid, di-C6-10-alkyl esters SVHC	68515-51-5	No	ECHA: coating products, manufacture of plastic products Annex XV: coatings, manufacture of plastic products SPIN: adhesives, binding agents	No	ECHA: no data* SPIN (2017): 0 tons/a	not evaluated in HAZBREF	Manufacture ceased in 2018. Included in the Annex XIV of REACH (Authorisation list). This substance may still be used because there is still time to apply for authorisation (Latest application date 27/08/2021; Sunset Date 27/02/2023). Thus, the use of substance without authorisation is possible in EU until 27.2.23. And use is possible also after

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
							sunset date if authorisation has been applied.
1,2-diethoxyethane SVHC	629-14-1	No	ECHA: no data Annex XV: 1,2-diethoxyethane belongs to the glyme family (polyglycol ethers) of chemicals. Glymes are powerful solvents for many polymer systems and find a role in many coating applications, including one- and two-part polyurethanes and epoxies. SPIN: no data	No	ECHA: no data SPIN: no data	not evaluated in HAZBREF	
1,2-dimethoxyethane, ethylene glycol dimethyl ether (EGDME) SVHC	110-71-4	No	ECHA: no STM related uses Annex XV: surface treatment of aluminum in order to ensure that surfaces are less reactive SPIN: surface treatment	No	ECHA: 100 – 1 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	
1,3,5-tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC) SVHC	2451-62-9	No	ECHA: coating products, manufacture of machinery and vehicles Annex XV: used as a hardener in resins and coatings, in polyester powder coatings for metal finishing SPIN: paints, lacquers, manufacture of fabricated metal products	No	ECHA: 100 – 1 000 tons/a SPIN (2013): 0 tons/a, no STM related uses after 2013	not evaluated in HAZBREF	
1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-	59653-74-6	No	ECHA: no public registered data	No	ECHA: confidential SPIN: no data	not evaluated in HAZBREF	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
triazine-2,4,6-(1H,3H,5H)-trione (β-TGIC) SVHC			Annex XV: β-TGIC is not used or produced as separated substance, it exists and is used only as a part of TGIC (mixture of isomers, 90% α and 10% β isomer). SPIN: no data				
1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloro-pentacyclo[12.2.1.16,9.02,13.05,10]-octadeca-7,15-diene ("Dechlorane Plus" TM) SVHC	13560-89-9	No	ECHA: manufacture of plastic products, adhesives, sealants Annex XV: metal surface treatment products including galvanic and electroplating products (formulated products) SPIN: adhesives, binding agents	No	ECHA: 100 – 1 000 tons/a SPIN (2010): 0 tons/a, no use after 2010	not evaluated in HAZBREF	May be used in metal surface treatment. Annex XV: "A broad range of uses and applications are indicated, but it is not clear how many are currently relevant."
1-bromopropane (n-propyl bromide) SVHC	106-94-5	No	ECHA: manufacture of plastic products, fabricated metal products Annex XV: no information on use* SPIN: surface treatment, manufacture of fabricated metal products	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website. Included in the Annex XIV of REACH (Authorisation list).
1-methyl-2-pyrrolidone (NMP) SVHC	872-50-4	No	ECHA: coating products, metal surface treatment products, non-metal-surface treatment products	No	ECHA: 10 000 – 100 000 tons/a	8.0% to surface water 0% to sludge 92% biodegradation	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			Annex XV: high temperature coating, acrylic and styrene latexes, metal coatings SPIN: manufacture of rubber and plastic products, manufacture of fabricated metal products, surface treatment and coating of metals		SPIN (2017): 45.6 tons/a	0% volatilisation	
2-(2H-benzo-triazol-2-yl)-4,6-ditertpentylphenol (UV-328) SVHC	25973-55-1	No	ECHA: coating products, manufacture of plastic products Annex XV: UV-stabilisers, coatings and paints SPIN: paints, lacquers and varnishes, manufacture of rubber and plastic products, industry for plastic products	No	ECHA: 100 – 1 000 tons/a SPIN (2017): 0.2 tons/a	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).
2,2'-dichloro-4,4'-methylenedianiline (MOCA) SVHC	101-14-4	No	ECHA: polymers and metal surface treatment products, manufacture of plastic products and machinery and vehicles Annex XV: used in polyurethane coatings SPIN: manufacture of rubber and plastic products	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 1.5 tons/a	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).
2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) SVHC	3846-71-7	No	ECHA: no data Annex XV: UV-protection agents in coatings SPIN: manufacture of rubber and plastic products	No	ECHA: no data SPIN (2009): 0 tons/a, no use after 2009	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
2-benzyl-2-dimethylamino-4'-morpholino-butyrophenone SVHC	119313-12-1	No	ECHA: coating products, manufacture of plastic products and fabricated metal products Annex XV: coatings and paints, manufacture of fabricated metal products SPIN: paints, lacquers and varnishes	No	ECHA: 100+ tons/a SPIN (2017): 9.4 tons/a	not evaluated in HAZBREF	
2-methoxyethanol (ethylene glycol monomethyl ether; EGME) SVHC	109-86-4	No	ECHA: intermediate Annex XV: wide application as a solvent, chemical intermediate and industrial processing aid in different areas, surface coating in aeronautics SPIN: surface treatment	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	
2-methyl-1-(4-methylthiophenyl)-2-morpholino-propan-1-one SVHC	71868-10-5	No	ECHA: coating products, manufacturing of plastic products and fabricated metal products Annex XV: coatings and paints, thinners, manufacturing of plastic products and fabricated metal products SPIN: no STM related uses	No	ECHA: 1000+ tons/a No STM related uses in SPIN.	not evaluated in HAZBREF	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
4-(1,1,3,3-tetramethylbutyl) phenol SVHC, WFD PS	140-66-9	No	ECHA: coating products Annex XV: component in coatings, paints and printing inks SPIN: adhesives, binding agents, paints, lacquers and varnishes, vulcanising agents, manufacture of rubber and plastic products	No	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0.2 tons/a	not evaluated in HAZBREF	
[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene]dimethyl-ammonium chloride (C.I. Basic Blue 26) SVHC	2580-56-5	No	ECHA: polymers, plastic products Annex XV: coating of plastic products SPIN: manufacturing of chemicals and chemical products, colouring agents	No	ECHA: no data* SPIN (2017): 0 tons/a	not evaluated in HAZBREF	Manufacture ceased in 2020. This substance may still be used in STM sector.
4,4'-isopropylidene-diphenol (bisphenol A; BPA) SVHC	80-05-7	No	ECHA: polymers, manufacture of plastic products Annex XV: manufacture of polymers, coatings SPIN: manufacture of fabricated metal products, basic metals, rubber and plastic products, surface treatment and coating of metals	No	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 32.9 tons/a	7.5% to surface water 6.4% to sludge 86.1% biodegradation 0% volatilisation	
4,4'-oxydianiline and its salts SVHC	Not presented in ECHA database.	No	ECHA: metal surface treatment products, manufacture of plastic products and fabricated metal products	No	ECHA: 10 – 100 tons/a (4,4'-oxydianiline)	not evaluated in HAZBREF	*The available use and exposure information is provided in the registration dossiers (authorities with access

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
	101-80-4 (4,4'-oxydianiline)		Annex XV: no information on use* SPIN: no data		SPIN: no data		rights only) or on ECHA's dissemination website.
4-Nonylphenol, branched and linear (incl. ethoxylated NPE) SVHC, WFD PHS	Not presented in ECHA database. 84852-15-3 (branched), 26027-38-3 (ethoxylated), 127087-87-0 (branched, ethoxylated)	Nonyl and other alkyl phenyl ethoxylates (NP/NPEs) included in the STM BREF 2006.	ECHA: coating products (4-nonylphenol, branched) Annex XV: metal care products, surface treatment (4-nonylphenol, ethoxylated) SPIN: paints, lacquers and varnishes manufacture of rubber and plastic products, fabricated metal products, surface treatment	No	ECHA: 1 – 10 tons/a (4-nonylphenol, ethoxylated) SPIN (2017): 0 tons/a	p-nonylphenol (NP): 3.4% to surface water 62% to sludge 34.3% biodegradation 0.3% volatilisation	NP formed due the degradation of NPE Some use of the substances restricted (textiles)
4-tert-butylphenol SVHC	98-54-4	No	ECHA: coating products Annex XV: industrial application of coatings or inks, hardener (e. g. in coatings and paints, fillers, putties, thinners) SPIN: surface treatment, paints, lacquers and varnishes, manufacture of rubber and plastic products, fabricated metal products	No	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0.4 tons/a	not evaluated in HAZBREF	
Acetic acid, lead salt, basic SVHC, WFD PS	51404-69-4	Lead and acetic acids included in the STM	ECHA: coating products Annex XV: no data on use* SPIN: no data	No	ECHA: 1 – 10 tons/a SPIN: no data	not evaluated in HAZBREF	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
		BREF 2006.					ECHA's dissemination website.
Acrylamide SVHC	79-06-1	No	ECHA: manufacture of chemicals Annex XV: intermediate in the production of polyacrylamides, coatings SPIN: surface treatment, manufacture of fabricated metal products and chemicals	No	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 40 tons/a	not evaluated in HAZBREF	
Arsenic acid SVHC	7778-39-4	No	ECHA: metal surface treatment products, manufacture of metals and fabricated metal products Annex XV: production of copper foil for printed circuit boards SPIN: manufacture of basic metals	No	ECHA: 100 – 1 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).
Benzyl butyl phthalate (BBP) SVHC	85-68-7	No	ECHA: no data available Annex XV: dossier not found SPIN: paints, lacquers and varnishes, manufacture of basic metals and fabricated metal products, treatment and coating of metals	No	ECHA: 1 – 10 tons/a SPIN (2017): 0.9 tons/a	8% to surface water 42% to sludge 50% biodegradation 0% volatilisation (Simple Treat – model, ECB 2007)	Annex XV dossier is not available for some reason. Included in the Annex XIV of REACH (Authorisation list).
Bis (2-ethylhexyl) phthalate (DEHP) SVHC, WFD PHS	117-81-7	No	ECHA: manufacture of chemicals and plastic products Annex XV: used for paints, adhesives and pigments, to help the formation of coating of vinyl acetate emulsion paints	No	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 125.5 tons/a	2.6% to surface water 78.6% to sludge 18.8% biodegradation 0% volatilisation	Included in the Annex XIV of REACH (Authorisation list).

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			SPIN: paints, laquers and varnishes, surface treatment and coating of metals, manufacture of plastic and rubber products				
Bis(pentabromo-phenyl) ether (decabromo-diphenyl ether) (DecaBDE) SVHC	1163-19-5	No	ECHA: coating products, manufacture of plastic products, rubber products and fabricated metal products Annex XV: protective coatings – used as an additive flame retardant in plastics/polymers SPIN: no STM related uses	No	ECHA: 1 000 – 10 000 tons/a SPIN: no STM related uses	6% to surface water 93% to sludge 1% biodegradation 0% volatilisation (EPI model, ECB 2002)	Some uses banned, but some uses still allowed in EU. STM use is not allowed anymore.
Boric acid SVHC	10043-35-3	No	ECHA: no STM related uses Annex XV: non-electrolytic metal coatings, metal surface treatment agents, corrosion inhibitors, rust preventive agents SPIN: surface treatment, electroplating agents, corrosion inhibitors, manufacture of fabricated metal products, basic metals, machinery and equipment, rubber and plastic products	Yes	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 180 tons/a	Not evaluated in HAZBREF	
Cadmium SVHC, WFD PHS	7440-43-9	Cadmium included in the STM BREF 2006.	ECHA: metals, metal surface treatment products, manufacture of fabricated metal products and metals Annex XV: production of battery electrodes, alloys and metal coatings in electrical, electronic, aerospace, mining, offshore, automotive and defence industries	Yes	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a	19% to surface water 81% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			SPIN: manufacture of fabricated metal products and basic metals, surface treatment and coating of metals				
Cadmium chloride SVHC, WFD PHS	10108-64-2	Cadmium included in the STM BREF 2006.	ECHA: metals, metal surface treatment products, manufacture of fabricated metal products Annex XV: not found SPIN: no data	No	ECHA: 1 – 10 tons/a SPIN: no data	Cadmium: 19% to surface water 81% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	Annex XV dossier is not available for some reason.
Cadmium oxide SVHC, WFD PHS	1306-19-0	Cadmium included in the STM BREF 2006.	ECHA: metals and metal surface treatment products Annex XV: not found SPIN: manufacture of rubber and plastic products, surface treatment	Yes	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a	Cadmium: 19% to surface water 81% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	Annex XV dossier is not available for some reason.
Chromium trioxide SVHC	1333-82-0	Chromium included in the STM BREF 2006.	ECHA: metal surface treatment products and non-metal surface treatment products, manufacture of fabricated metal products and plastic products Annex XV: metal finishing (for electroplating e.g. passivation of zinc, aluminum, cadmium and brass, pickling), non-electrolytic metal coatings, surface treatment products for non-metal	Yes	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 122.6 tons/a	not evaluated in HAZBREF	Substance is included in the REACH Annex XIV (Authorisation list) which means that the use of substance is allowed only if authorisation is granted

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			SPIN: manufacture of fabricated metal products and of basic metals, surface treatment and coating of metals, treatment and coating of metals, electroplating agents, conductive agents, corrosion inhibitors				
Cobalt dichloride SVHC	7646-79-9	No	ECHA: metal surface treatment products, manufacture of chemicals and fabricated metal products Annex XV: as a metal drier in air-drying coatings, as drying agent in paints, lacquers and varnishes, electroplating processes (galvanoplasty) SPIN: manufacture of fabricated metal products, electroplating agents, corrosion inhibitors, surface treatment	No	ECHA: 1 000 – 10 000 tons/a SPIN (2012): 0 tons/a, no STM related uses after 2012	not evaluated in HAZBREF	
Cobalt (II) carbonate SVHC	513-79-1	No	ECHA: metal surface treatment products, manufacture of fabricated metal products Annex XV: production of pigments for decorating porcelains, adhesion: ground coat frit, production of other chemicals (intermediate) SPIN: surface treatment	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	
Cobalt (II) diacetate SVHC	71-48-7	No	ECHA: metal surface treatment products, polymers, manufacture of fabricated metal products and plastic products Annex XV: surface treatment of metals, rubber adhesion	Yes	ECHA: 100 – 1 000 tons/a SPIN (2017): 0.1 tons/a	not evaluated in HAZBREF	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			SPIN: manufacture of fabricated metal products, surface treatment				
Cobalt (II) dinitrate SVHC	10141-05-6	No	ECHA: metal surface treatment products, manufacture of fabricated metal products Annex XV: surface treatment (incl. formulation, passivation and plating) SPIN: manufacture of fabricated metal products, surface treatment and coating of metals, electroplating agents, corrosion inhibitors	Yes	ECHA: 100 – 1 000 tons/a SPIN (2017): 2 tons/a	not evaluated in HAZBREF	
Cobalt (II) sulphate SVHC	10124-43-3	No	ECHA: metal surface treatment products, manufacture of fabricated metal products Annex XV: surface treatments: anodising, electrodeposition, non-electro deposition, corrosion prevention SPIN: manufacture of fabricated metal products, surface treatment and coating of metals, electroplating agents	Yes	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 1.1 tons/a	not evaluated in HAZBREF	
Cyclohexane-1,2-dicarboxylic anhydride (HHPA) and all possible combinations of the cis- and trans-isomers SVHC	85-42-7 (HHPA), 14166-21-3 (trans-HHPA), 13149-00-3 (cis-HHPA)	No	ECHA: coating products, polymers, manufacture of chemicals, machinery and vehicles Annex XV: manufacture of alkyd resins, plasticisers, insect repellents, rust inhibitors and as hardener in epoxy resins	No	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0.4 tons/a (HHPA)	not evaluated in HAZBREF	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			SPIN: manufacture of fabricated metal products, paint and varnish, decorative protection				
Decamethyl-cyclopentasiloxane (D5) SVHC	541-02-6	No	ECHA: no STM related uses Annex XV: coatings, non-metal surface treatment SPIN: manufacture of rubber, plastic and fabricated metal products, treatment and coating of metals, surface treatment	No	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 4 tons/a	2.0% to surface water 74.9% to sludge 0% biodegradation 23.1% volatilisation	
Diarsenic trioxide SVHC	1327-53-3	No	ECHA: metals and semiconductors, manufacture of metals Annex XV: decolorising agent for glass and enamels, refining and oxidising agent for manufacturing special glass and lead crystal formulations and as a hydrogen recombination poison for metallurgical studies SPIN: manufacture of fabricated metal products, manufacture of basic metals, rubber and plastic products	No	ECHA: 100 – 1 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Diboron trioxide SVHC	1303-86-2	No	ECHA: manufacture of metals and machinery and vehicles Annex XV: flame retardants, fire resistant additive for paints and electronics SPIN: flame retardants, manufacture of basic metals and fabricated metal products	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 242.3 tons/a	not evaluated in HAZBREF	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
Dibutyl phthalate (DBP) SVHC	84-74-2	No	ECHA: polymers, manufacture of plastic products and fabricated metal products Annex XV: softener (plasticiser in PVC), softener/solvent (e.g. sealants, nitrocellulose paints, film coatings, glass fibres and cosmetics) SPIN: manufacture of fabricated metal products, surface treatment	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0.1 tons/a	9% to surface water 33% to sludge 58% biodegradation 0% volatilisation (Simple Treat model, ECB 2003)	Included in the REACH Annex XIV (Authorisation list)
Dichromium-tris(chromate) SVHC	24613-89-6	Chromium included in the STM BREF 2006.	ECHA: metal surface treatment product Annex XV: formulation of metal treatment products, industrial surface treatment of metals- reactive anti-corrosion primer for steel and aluminum SPIN: paints, lacquers and varnishes, manufacture of fabricated metal products, surface treatment	No	ECHA: 10 – 100 tons/a SPIN: 2010: 0 tons/a, no STM related use after 2010	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Diisobutyl phthalate (DIBP) SVHC	84-69-5	No	ECHA: coating products, manufacture of plastic products Annex XV: e.g. plasticiser for cellulose & vinyl plastics SPIN: manufacture of rubber and plastic products, treatment and coating of metals	No	ECHA: 1 – 10 tons/a SPIN (2017): 1,9 tons/a	5.3% to surface water 9.2% to sludge 70.1% biodegradation 15.4% volatilisation	Included in the REACH Annex XIV (Authorisation list)
Dinoseb (6-sec-butyl-2,4-dinitrophenol) SVHC	88-85-7	No	ECHA: coating products, manufacture of plastic products Annex XV: no data on use*	No	ECHA: 1 000 – 10 000 tons/a SPIN: no data	not evaluated in HAZBREF	Also used as herbicide. *The available use and exposure information is provided in the registration dossiers

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			SPIN: no data				(authorities with access rights only) or on ECHA's dissemination website.
Disodium octaborate SVHC	12008-41-2	No	ECHA: coating products, metal surface treatment products, manufacture of fabricated metal products and metals Annex XV: paints and coatings SPIN: manufacture of fabricated metal products	No	ECHA: 1 000 – 10 000 tons/a SPIN (2001): 0 tons/a, no use after 2001	not evaluated in HAZBREF	
Disodium tetraborate, anhydrous SVHC	1330-43-4, 1303-96-4 (Borax), 12179-04-3 (pentahydrate)	No	ECHA: coating products, manufacture of fabricated metal products and metals Annex XV: metal production, metal surface refining (pentahydrate) SPIN: manufacture of fabricated metal products, rubber and plastic products, surface treatment surface treatment and coating of metals, electroplating agents (Borax) manufacture of fabricated metal products (pentahydrate)	Yes (CAS 1303-96-4 and 1330-43-4)	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 0 tons/a 23.9 tons/a (Borax) 5.6 tons/a (pentahydrate)	7.9% to surface water 0% to sludge 91.6% biodegradation 0.5% volatilisation	
Dodecamethyl-cyclohexasiloxane (D6) SVHC	540-97-6	No	ECHA: polishes and waxes, manufacture of chemicals Annex XV: polymer production	No	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 9.1 tons/a	1.9% to surface water 89.4% to sludge 0% biodegradation	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			SPIN: manufacture of chemicals and chemical products, fabricated metal products, surface treatment, treatment and coating of metals			8.7% volatilisation	
Ethyl diamine (EDA) SVHC	107-15-3	No	ECHA: coating products Annex XV: polymers, coatings SPIN: surface treatment and coating of metals, paints, lacquers and varnishes, electroplating agents, corrosion inhibitors, manufacture of fabricated metal products, basic metals, plastic and rubber products	Yes	ECHA: 10 000+ tons/a SPIN (2017): 4.6 tons/a	not evaluated in HAZBREF	
Formaldehyde, oligomeric reaction products with aniline SVHC	25214-70-4	No	ECHA: coating products Annex XV: production of chemically resistant pipes, production of rolls with composite cover SPIN: manufacture of rubber and plastic products, surface treatment	No	ECHA: 100 – 1 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Imidazolidine-2-thione (2-imidazoline-2-thiol) SVHC	96-45-7	No	ECHA: manufacture of rubber products Annex XV: dossier not found SPIN: manufacture of fabricated metal products, basic metals and rubber and plastic products, surface treatment and coating of metals	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a	99.9% to surface water 0% to sludge 0% biodegradation 0.1% volatilisation	Annex XV dossier is not available for some reason.
Lead SVHC, WFD PS	7439-92-1	Lead included in the STM	ECHA: metal surface treatment products, polymers, manufacture of fabricated metal products	Yes	ECHA: 1 000 000 – 10 000 000 tons/a	11% to surface water 89% to sludge	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
		BREF 2006.	Annex XV: in production of: batteries, lead sheets, leaded steels, hot-dip galvanised steel, lead powder, a range of lead articles SPIN: manufacture of basic metals, fabricated metal products, rubber and plastic products, surface treatment and coating of metals, electroplating agents		SPIN (2017): 16 476 tons/a	0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	
Lead bis (tetrafluoroborate) SVHC, WFD PS	13814-96-5	Lead included in the STM BREF 2006.	ECHA: metal surface treatment products, non-metal-surface treatment products, manufacture of fabricated metal products Annex XV: no data on use* SPIN: electroplating agents (2005)	No	ECHA: 10 – 100 tons/a SPIN: no STM related data	not evaluated in HAZBREF	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.
Lead chromate SVHC, WFD PS	7758-97-6	Lead included in the STM BREF 2006.	ECHA: no data Annex XV: pigment in paint and varnishes, primary coating SPIN: treatment and coating of metals, surface treatment, manufacture of fabricated metal products, rubber and plastic products	No	ECHA: no data SPIN (2015): 0 tons/a, no use after 2015	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Lead chromate molybdate sulphate red (C.I. Pigment Red 104) SVHC, WFD PS	12656-85-8	Lead included in the STM BREF 2006.	ECHA: coating products, manufacture of plastic products, fabricated metal products and machinery and vehicles Annex XV: coatings SPIN: surface treatment, manufacture of rubber and plastic products	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
Lead di(acetate) SVHC, WFD PS	301-04-2	Lead included in the STM BREF 2006.	ECHA: coating products, manufacture of metals Annex XV: coatings and paints SPIN: manufacture of fabricated metal products, surface treatment	No	ECHA: 1 – 10 tons/a SPIN: 2003: 0 tons/a, no STM related use after 2003	not evaluated in HAZBREF	
Lead dinitrate SVHC, WFD PS	10099-74-8	Lead included in the STM BREF 2006.	ECHA: coating products, manufacture of machinery and vehicles Annex XV: no data on use* SPIN: surface treatment	No	ECHA: 1 000 – 10 000 tons/a SPIN: 2007: 0 tons/a, no use after 2012	Lead: 11% to surface water 89% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.
Lead monoxide (lead oxide) SVHC, WFD PS	1317-36-8	Lead included in the STM BREF 2006.	ECHA: coating products, manufacture of plastic and rubber products Annex XV: no data on use SPIN: corrosion inhibitors, surface treatment, manufacture of fabricated metal products, rubber and plastic products	No	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 0 tons/a	Lead: 11% to surface water 89% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.
Lead oxide sulphate SVHC, WFD PS	12036-76-9	Lead included in the STM BREF 2006.	ECHA: coating products Annex XV: no data on use* SPIN: no data	No	ECHA: 1 – 10 tons/a SPIN: no data	Lead: 11% to surface water 89% to sludge 0% biodegradation	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
						0% volatilisation (modelling + measured data; Vieno 2014)	ECHA's dissemination website.
Lead sulfochromate yellow (C.I. Pigment Yellow 34) SVHC, WFD PS	1344-37-2	Lead included in the STM BREF 2006.	ECHA: manufacture of plastic products, coating products Annex XV: coating of plastic material SPIN: surface treatment, manufacture of plastic and rubber products	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0.1 tons/a	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Lead (II) bis (methanesulfonate) SVHC, WFD PS	17570-76-2	Lead included in the STM BREF 2006.	ECHA: no public data Annex XV: electrolytic and electroless plating SPIN: surface treatment, electroplating agents, manufacture of fabricated metal products	No	ECHA: confidential SPIN: 2012: 0 tons/a, no use after 2012	not evaluated in HAZBREF	
Methyloxirane (Propylene oxide) SVHC	75-56-9	No	ECHA: polymers, coating products, metal surface treatment products Annex XV: not found SPIN: manufacture of fabricated metal products, rubber and plastic products, treatment and coating of metals, surface treatment, corrosion inhibitors	No	ECHA: 1 000 000 – 10 000 000 tons/a SPIN (2017): 0.1 tons/a	4.0% to surface water 0% to sludge 16.7% biodegradation 79.3% volatilisation	Annex XV dossier is not available for some reason.
N,N-dimethylacetamide (DMAC) SVHC	127-19-5	No	ECHA: manufacture of chemicals, machinery and vehicles Annex XV: coatings	No	ECHA: 1 000+ tons/a SPIN (2017): 0 tons/a	22.5% to surface water 0.1% to sludge 77.4% biodegradation	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			SPIN: manufacture of chemicals and chemical products, paints, laquers, varnishes			0% volatilisation	
N,N-dimethylformamide SVHC	68-12-2	No	ECHA: manufacture of chemicals, machinery and vehicles Annex XV: polymers, coatings SPIN: manufacture of chemicals and chemical products	No	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	
Octamethyl-cyclosiloxane (D4) SVHC	556-67-2	No	ECHA: non-metal-surface treatment products, manufacture of plastic and rubber products Annex XV: non-metal surface treatment products, manufacture of rubber and plastic products SPIN: manufacture of fabricated metal products, rubber and plastic products, treatment and coating of metals, surface treatment	No	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 2.7 tons/a	2.6% to surface water 48.4% to sludge 0% biodegradation 49% volatilisation	
Orange lead (lead tetroxide) SVHC, WFD PS	1314-41-6	Lead included in the STM BREF 2006.	ECHA: coating products, manufacture of chemicals and plastic products Annex XV: no information on use* SPIN: manufacture of basic metals, paints, lacquers and varnishes, active corrosion inhibitor	No	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0 tons/a	Lead: 11% to surface water 89% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
Pentazine chromate octahydroxide SVHC	49663-84-5	Zinc included in the STM BREF 2006.	ECHA: coating products, manufacture of machinery and vehicles Annex XV: coatings, industrial use of mixtures in the vehicle coating sector SPIN: paints, lacquers and varnishes, repair of motor vehicles and motorcycles	No	ECHA: 100 – 1 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Perfluorobutane sulfonic acid (PFBS) and its salts SVHC	Not presented in ECHA database. 25628-08-4 (Tetraethyl - ammonium perfluorobutane sulfonate)	No	ECHA: no data Annex XV: Tetraethylammoniumperfluorobutane sulfonate is used in metal (chromium) plating. PFBS-related substances, including polymers, are used as surface treatment for porous hard surfaces, like concrete, grout, unglazed tile, granite, clay, slate, limestone, marble and terracotta. SPIN: no data	No	ECHA: no data SPIN: no data	not evaluated in HAZBREF	PFBS related substances are widely used in STM, but they are not SVHCs
Perfluorononan-1-oic-acid (PFNA) and its sodium and ammonium salts SVHC	375-95-1 (PFNA), 21049-39-8 (PFN-S), 4149-60-4 (PFN-A)	No	ECHA: no data Annex XV: PFNA is used as a processing aid for the fluoropolymer manufacture, as surfactant for fire extinguishers and as polishing surfactant SPIN: no data	No	ECHA: no data SPIN: no data	not evaluated in HAZBREF	
Potassium chromate SVHC	7789-00-6	No	ECHA: metal surface treatment products Annex XV: not found SPIN: no STM related uses	No	ECHA: 1 – 10 tons/a SPIN: no STM related uses	not evaluated in HAZBREF	Annex XV dossier is not available for some reason.

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
							Included in the REACH Annex XIV (Authorisation list)
Potassium dichromate SVHC	7778-50-9	No	ECHA: metal surface treatment products, manufacture of metals and fabricated metal products Annex XV: treatment and coating of metals SPIN: manufacture of fabricated metal products, electroplating agents	Yes	ECHA: 100 – 1 000 tons/a SPIN (2015): 0 tons/a, no STM related use after 2015	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Potassium hydroxyocta-oxodisincate-dichromate SVHC	11103-86-9	Zinc included in the STM BREF 2006.	ECHA: coating products, manufacture of machinery and vehicles Annex XV: coating of metal products (wash primers, shop primers, tie coats, coating powders) SPIN: manufacture of fabricated metal products, surface treatment	No	ECHA: 100 – 1 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Pyrochlore, antimony lead yellow SVHC, WFD PS	8012-00-8	Lead included in the STM BREF 2006.	ECHA: coating products Annex XV: no data on use* SPIN: paints, lacquers and varnishes	No	ECHA: 10 – 100 tons/a SPIN (20017): 0 tons/a	not evaluated in HAZBREF	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.
Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped SVHC,	68784-75-8	Lead included in the STM BREF 2006.	ECHA: coating products Annex XV: no data on use*	No	ECHA: 10 – 100 tons/a SPIN: no data	not evaluated in HAZBREF	*The available use and exposure information is provided in the registration dossiers (authorities with access

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
WFD PS			SPIN: no data				rights only) or on ECHA's dissemination website.
Sodium chromate SVHC	7775-11-3	No	ECHA: metal surface treatment products Annex XV: corrosion inhibitor, electroplating (chrome plating), conversion coatings (passivating and anodising) and in brightening) SPIN: manufacture of fabricated metal products, electroplating agents, surface treatment	Yes	ECHA: 1 – 10 tons/a SPIN (2011): 0 tons/a, no STM related use after 2011	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Sodium dichromate SVHC	10588-01-9, 7789-12-0	No	ECHA: metal surface treatment products, non-metal-surface treatment products, manufacture of fabricated metal products and plastic products Annex XV: metal finishing, corrosion resistance, chrome plating, electroplating, conversion coatings (passivating, anodising and brightening) SPIN: surface treatment and coating of metals, corrosion inhibitor, manufacture of fabricated metal products	Yes (CAS 10588-01-9)	ECHA: 100 – 1 000 tons/a SPIN (2015): 0 tons/a, no STM related use after 2015	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)
Strontium chromate SVHC	7789-06-2	No	ECHA: coating products, manufacture of machinery and vehicles Annex XV: protective (primer) coatings, paint production mainly as corrosion inhibitor and as pigments	No	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a SPIN (2014): 89 tons/a	not evaluated in HAZBREF	Included in the REACH Annex XIV (Authorisation list)

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
			SPIN: manufacture of fabricated metal products (2017), corrosion inhibitors (2017), surface treatment and coating of metals (2014)				
Terphenyl hydrogenated SVHC	61788-32-7	No	ECHA: coating products, manufacture of chemicals and plastic products Annex XV: industrial coatings SPIN: manufacture of rubber and plastic products	No	ECHA: 10 000 – 100 000 tons/a SPIN: 0 tons/a	not evaluated in HAZBREF	
Tetralead trioxide sulphate SVHC, WFD PS	12202-17-4	Lead included in the STM BREF 2006.	ECHA: coating products, manufacture of plastic products, machinery and vehicles and metals Annex XV: no data on use* SPIN: manufacture of rubber and plastic products	No	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.
Trilead dioxide phosphonate SVHC, WFD PS	12141-20-7	Lead included in the STM BREF 2006.	ECHA: used in coating products, manufacture of plastic and rubber products Annex XV: no data on use* SPIN: manufacture of fabricated metal products, paints, lacquers and varnishes	No	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	*The available use and exposure information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.
Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with = 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	Not presented in ECHA database. 26523-78-4	Nonyl and other alkyl phenyl ethoxylates (NP/NPEs) included in the STM	ECHA: coatings (TNPP) Annex XV: The information provided relates to the registered substance tris(4-nonylphenyl, branched) phosphite (TNPP). TNPP is primarily used as an antioxidant to stabilise polymers. Use of formulated	No	ECHA: 10 000 – 100 000 tons/a (TNPP) SPIN: no data	not evaluated in HAZBREF	

Substance (SVHC / WFD substance)	CAS	Already in BREF	Use in STM sector (ECHA CHEM and/or SPIN)	In case study	ECHA CHEM or STM in SPIN ⁴	Fate in WWTP ⁵	Other information
SVHC, WFD PHS	(Tris(nonyl-phenyl)phosphite) 3050-88-2 (4-nonylphenol phosphite)	BREF 2006.	polymer in manufacturing, coatings and adhesives. SPIN: no data				

⁴) Information taken from ECHA chemical database (<https://echa.europa.eu/fi/information-on-chemicals>) 20.3.2020, indicates total imported/manufactured amount in EU (tons per year) in all uses, no information on use specifically in STM sector. The years of the information which the data are based on is unknown. Information taken from SPIN database (<http://spin2000.net/>) 24.3.2020, indicates total imported/produced volume in STM sector in the Nordic Countries in one particular year (tons per year).

⁵) GoA2.2 mini-report

References:

- Annex XV dossier 1-bromopropane; n-propyl bromide
- Annex XV dossier 1-Methyl-2-pyrrolidone
- Annex XV dossier 1,2-dimethoxyethane, ethylene glycol dimethyl ether (EGDME)
- Annex XV dossier 1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione
- Annex XV dossier 2,2'-dichloro-4,4'-methylenedianiline
- Annex XV dossier 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)
- Annex XV dossier 4-(1,1,3,3-tetramethylbutyl) phenol
- Annex XV dossier 4,4'-oxydianiline
- Annex XV dossier Acetic acid, lead salt, basic
- Annex XV dossier Arsenic acid
- Annex XV dossier Bis(2-ethylhexyl)phthalate
- Annex XV dossier Bis(pentabromophenyl)ether (decabromodiphenyl ether; decaBDE)
- Annex XV dossier Boric acid
- Annex XV dossier Cadmium

- Annex XV dossier Calcium arsenate
- Annex XV dossier Chromium trioxide
- Annex XV dossier Cobalt (II) carbonate
- Annex XV dossier Cobalt (II) diacetate
- Annex XV dossier Cobalt dichloride
- Annex XV dossier Cobalt (II) dinitrate
- Annex XV dossier Cobalt (II) sulphate
- Annex XV dossier Decamethylcyclopentasiloxane (D5)
- Annex XV dossier Diarsenic trioxide
- Annex XV dossier Diboron trioxide
- Annex XV dossier Dibutylphthalate (DBP)
- Annex XV dossier Dichromiumtris (chromate)
- Annex XV dossier Diisobutyl phthalate
- Annex XV dossier Dinoseb(ISO); 6-sec-butyl-2,4-dinitrophenol
- Annex XV dossier Disodium tetraborate, anhydrous
- Annex XV dossier Formaldehyde, oligomeric reaction products with aniline
- Annex XV dossier Lead
- Annex XV dossier Lead bis(tetrafluoroborate)
- Annex XV dossier Lead(II) bis(methanesulfonate)
- Annex XV dossier Lead di(acetate)
- Annex XV dossier Lead dinitrate
- Annex XV dossier Lead monoxide [Lead oxide]
- Annex XV dossier Lead oxide sulfate
- Annex XV dossier Methoxyacetic acid (MAA)
- Annex XV dossier Octamethylcyclsiloxane (D4)
- Annex XV dossier Orange lead [Lead tetroxide]
- Annex XV dossier Pentazinc chromate octahydroxide
- Annex XV dossier Potassium dichromate
- Annex XV dossier Potassium hydroxyoctaoxidizincatedichromate
- Annex XV dossier Pyrochlore, antimony lead yellow
- Annex XV dossier Silicic acid (H₂Si₂O₅), barium salt (1:1), lead-doped [Silicic acid, barium salt, lead-doped]
- Annex XV dossier Sodium chromate
- Annex XV dossier Sodium dichromate

- Annex XV dossier Strontium chromate
 - Annex XV dossier Sulfurous acid, lead salt, dibasic
 - Annex XV dossier Tetralead trioxide sulphate
 - Annex XV dossier Trileaddiarsenate
 - Annex XV dossier Trilead dioxide phosphonate
 - Annex XV report 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-Benzenedicarboxylic acid, mixed decyl and hexyl and octyldiesters
 - Annex XV report 2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone
 - Annex XV report 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one
 - Annex XV report 4-tert-butylphenol
 - Annex XV report 4,4'-isopropylidenediphenol (Bisphenol A)
 - Annex XV report Disodium octaborate
 - Annex XV report Ethylenediamine (ethane-1,2-diamine)
 - Annex XV report Perfluorobutane sulfonic acid (PFBS) and its salts
 - Annex XV report Perfluorohexane-1-sulphonic acid and its salts
 - Annex XV report Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP)1
- * EU-RAR 2002c. European Union Risk assessment on bis(pentabromophenyl) ether. Final report. European Union Risk assessment report 17. 279 p. European Chemicals Bureau.
- * EU-RAR. 2003d. European Union Risk Assessment on Dibutyl phthalate. Final report 2003 with addendum 2004. European Union Risk Assessment report 29. 139 p. European Chemicals Bureau.
- * EU-RAR. 2004b. European Union Risk Assessment on Benzyl butyl phthalate. Draft of November 2004. 90 p. European Chemicals Bureau.

Table 3: REACH substances of very high concern (SVHC) and WFD priority substances (PS) / priority hazardous substances (PHS) which have registered uses in POL industry based on REACH registration information in the public ECHA chemical database. Annex XV = substance specific dossiers on “Proposal for identification of a substance as a category 1A or 1B CMR, PBT, vPvB or a substance of an equivalent level of concern” under REACH Annex XV, available in the ECHA chemical database separately from the REACH registration information.

Substance (SVHC / WFD substance)	CAS	Use in POL sector (ECHA/SPIN)	Fate in wastewater treatment plant ⁷	Other information
		Total imported or manufactured for all uses in EU (public ECHA CHEM database) / for POL in Nordic countries (SPIN database) (tons/a) ⁶		

⁶⁾ Information taken from ECHA chemical database (<https://echa.europa.eu/fi/information-on-chemicals>) 1.4.2020, indicates total imported/manufactured amount in EU (tons per year) in all uses, no information on use specifically in POL sector. The years of the information which the data are based on is unknown. Information taken from SPIN database (<http://spin2000.net/>) 1.4.2020, indicates total imported/produced volume in pol sector in the Nordic Countries in one particular year (tons per year).

⁷⁾ GoA2.2 mini-report

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
1,2,3-trichloropropane SVHC	96-18-4	ECHA: rubber products and plastic products Annex XV: manufacture of polymers SPIN: no data	ECHA: 1 000 – 10 000 tons/a SPIN: no data	not evaluated in HAZBREF	
1,2-Benzene-dicarboxylic acid, di-C6-10-alkyl esters SVHC	68515-51-5	ECHA: polymers, manufacture of plastic and rubber products Annex XV: used in polymer processing, preparations and compounds, manufacture of plastic products, including compounding and conversion	ECHA: 0 – 10 tons/a No POL related uses in SPIN.	not evaluated in HAZBREF	Manufacture ceased in 2018. Included in the Annex XIV of REACH (Authorisation list). This substance may still be used because there is still time to apply for authorisation (Latest application date 27/08/2021;

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
		SPIN: no POL related uses			Sunset Date 27/02/2023). Thus, the use of substance without authorisation is possible in EU until 27.2.23. And use is possible also after sunset date if authorisation has been applied.
1,2-dichloroethane SVHC WFD PS	107-06-2	ECHA: polymers Annex XV: production of vinyl chloride, manufacture of ethylene amines and vinylidene chloride SPIN: no POL related uses	ECHA: 1 000 000 – 10 000 000 tons/a No POL related uses in SPIN.	66% to surface water 1% to sludge 0% biodegradation 33% volatilisation (Simple Treat – model, Mannio et al. 2011)	Included in the Annex XIV of REACH (Authorisation list).
1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloro-pentacyclo[12.2.1.16,9.02,13.05,10]-octadeca-7,15-diene (“Dechlorane Plus”™) SVHC	13560-89-9	ECHA: polymers, manufacture of plastic products Annex XV: manufacture of plastics products (including compounding and conversion), formulation of polymers, non-plasticising flame retardant in polymers SPIN: no POL related uses	ECHA: 100 – 1 000 tons/a No POL related uses in SPIN.	not evaluated in HAZBREF	
1-Methyl-2-pyrrolidone (NMP) SVHC	872-50-4	ECHA: no POL-related uses Annex XV: acrylic and styrene latexes SPIN: raw materials for production of plastics*, manufacture of rubber and plastic products**	ECHA: 10 000 – 100 000 tons/a SPIN: 0 tons/a (2015)*, 11 tons/a (2017)**	8,0% to surface water 0% to sludge 92% biodegradation 0% volatilisation	
2-(2H-benzotriazol-2-yl)-4,6-	25973-55-1	ECHA: polymers, manufacture of plastic products	ECHA: 100 – 1 000 tons/a SPIN (2017): 0,3 tons/a	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
ditertpentylphenol (UV-328) SVHC		Annex XV: UV-stabilisers, UV-protection agents for plastics, rubber and polyurethanes SPIN: raw materials for production of plastics			
2,2'-dichloro-4,4'-methylenedianiline (MOCA) SVHC	101-14-4	ECHA: polymers, manufacture of plastic products Annex XV: used primarily to produce polyurethane articles SPIN: manufacture of rubber and plastic products	ECHA: 100 – 1 000 tons/a SPIN (2017): 1,5 tons/a	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).
2-benzyl-2-dimethylamino-4'-morpholinobutyrophe none SVHC	119313-12-1	ECHA: polymers, manufacture of plastic products Annex XV: photoinitiator in polymer production SPIN: manufacture of plastic and rubber products	ECHA: 100+ tons/a SPIN (2013): 0 tons/a, no POL related uses after 2013.	not evaluated in HAZBREF	
2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetra-decanoate (DOTE) SVHC	15571-58-1	ECHA: polymers, manufacture of plastic products Annex XV: processing of polymers, manufacture of plastics products, including compounding and conversion SPIN: raw materials for production of plastics*, manufacture of rubber and plastic products**	ECHA: 1 000 – 10 000 tons/a SPIN: 2 tons/a (2015)*, 12 tons/a (2017)**	not evaluated in HAZBREF	

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
2-methyl-1-(4-methylthiophenyl)-2-morpholino-propan-1-one SVHC	71868-10-5	ECHA: manufacture of plastic products Annex XV: photoinitiator in polymer production SPIN: manufacture of rubber and plastic products	ECHA: 1 000+ tons/a SPIN (2012): 0 tons/a, no POL related uses after 2012.	not evaluated in HAZBREF	
4-(1,1,3,3-tetramethylbutyl) phenol SVHC WFD PS	140-66-9	ECHA: polymers Annex XV: a monomer for polymer preparations, intermediate for manufacture of ethoxylates, component in coatings and tackifier in the production of rubber products SPIN: raw materials for production of rubber products	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0,1 tons/a	not evaluated in HAZBREF	
[4-[[4-anilino-1-naphthyl][4-(dimethylamino)-phenyl]methylene]-cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) SVHC	2580-56-5	ECHA: polymers, manufacture of plastic products Annex XV: dyeing of plastic products SPIN: no POL related uses	ECHA: 0 – 10 tons/a No POL related uses in SPIN.	not evaluated in HAZBREF	Manufacture ceased in 2020. This substance may still be used in polymer sector.
4,4'-Diaminodiphenylmethane (MDA)	101-77-9	ECHA: polymers Annex XV: Processed to methylenediphenyl diisocyanate (MDI).	ECHA: 10 000 – 100 000 tons/a SPIN (2012): 0 tons/a, no POL related uses after 2012.	50,7% to surface water 49,3% to sludge 0% biodegradation	Included in the Annex XIV of REACH (Authorisation list).

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
SVHC		MDI is further used for polyurethane production. SPIN: manufacture of rubber and plastic products		0% volatilisation	
4,4'-isopropylidene-diphenol (bisphenol A; BPA) SVHC	80-05-7	ECHA: polymers, manufacture of plastic products Annex XV: manufacture of polymers SPIN: raw materials for production of plastics	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 0,5 tons/a	7,5% to surface water 6,4% to sludge 86,1% biodegradation 0% volatilisation	Certain uses restricted in the EU.
4,4'-oxydianiline + its salts SVHC	101-80-4	ECHA: polymers, manufacture of chemicals and plastic products Annex XV: no information on use* SPIN: no data	ECHA: 10 – 100 tons/a SPIN: no data	not evaluated in HAZBREF	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i>
4-Nonylphenol, branched and linear (incl. ethoxylated NPE) SVHC WFD PHS	Substance group, no CAS number presented in ECHA database. 84852-15-3 (branched), 26027-38-3 (ethoxylated), 127087-87-0 (branched, ethoxylated)	ECHA: polymers (CAS 84852-15-3) Annex XV: polymer industry SPIN: manufacture of rubber and plastic products, industry for plastics in primary forms	ECHA: CAS 84852-15-3 10 000 – 100 000 tons/a CAS 26027-38-3 1 – 10 tons/a CAS 127087-87-0 0 – 10 tons/a or no data (inconsistent data in ECHA CHEM) CAS 68412-54-4	p-nonylphenol (NP): 3,4% to surface water 62% to sludge 34,3% biodegradation 0,3% volatilisation	Certain uses are Restricted under REACH at EU level but not polymer use. NP is formed due to the degradation of NPE.

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
	68412-54-4 (Nonylphenol, branched, ethoxylated)		100+ tons/a or 1 000+ tons/a (inconsistent data in ECHA CHEM) SPIN (2017): 0 tons/a		
4-tert-butylphenol SVHC	98-54-4	ECHA: polymers Annex XV: polymers SPIN: raw materials for production of rubber products and plastics	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0,2 tons/a	not evaluated in HAZBREF	
Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride) (TMA) SVHC	552-30-7	ECHA: polymers Annex XV: manufacture of polymers and esters SPIN: no POL related uses	ECHA: 10 000 – 100 000 tons No POL related uses in SPIN	not evaluated in HAZBREF	
Benzyl butyl phthalate (BBP) SVHC	85-68-7	ECHA: no data Annex XV*: plasticiser for PVC or other polymers SPIN: manufacture of rubber and plastic products	ECHA: 1– 10 tons/a SPIN (2015): 0,3 tons/a, no POL related uses after 2015.	8% to surface water 42% to sludge 50% biodegradation 0% volatilisation (Simple Treat – model, ECB 2007)	* Annex XV Restriction report – four phthalates Included in the Annex XIV of REACH (Authorisation list). Use above 0.1% by weight restricted in plastics, toys and childcare articles (some exemptions exist). See https://echa.europa.eu/documents/10162/aaa92146-a005-1dc2-debe-93c80b57c5ee for details.
Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7	ECHA: polymers, manufacture of chemicals and plastic products	ECHA: 10 000 – 100 000 tons/a SPIN: 91 tons/a (2011)*,	2,6% to surface water 78,6% to sludge 18,8% biodegradation	Included in the Annex XIV of REACH (Authorisation list). Use above 0.1% by weight restricted in plastics, toys and

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
SVHC WFD PHS		Annex XV: plasticiser in polymers SPIN: raw materials for production of rubber products and plastics*, manufacture of rubber and plastic products**	126 tons/a (2017)**	0% volatilisation	childcare articles (some exemptions exist). See https://echa.europa.eu/documents/10162/aaa92146-a005-1dc2-debe-93c80b57c5ee for details.
Bis(2-methoxyethyl) ether (Diglyme) SVHC	111-96-6	ECHA: polymers, manufacture of chemicals and plastic products Annex XV: production of magnetic polystyrene beads and manufacture of rubber and plastic products SPIN: manufacture of rubber and plastic products	ECHA: 100 – 1 000 tons/a SPIN (2007): 0 tons/a, no use after 2007.	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).
Boric acid SVHC	10043-35-3	ECHA: no POL related uses Annex XV: preservatives for rubber and polymerised materials, raw materials for production of rubber, flame retardants etc. SPIN: raw materials for production of rubber products	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0,1 tons/a	not evaluated in HAZBREF	
Cadmium carbonate SVHC WFD PHS	513-78-0	ECHA: polymers, manufacture of chemicals and plastic products Annex XV: polymers SPIN: no data	ECHA: 10 – 100 tons/a SPIN: no data	Cadmium: 19% to surface water 81% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	
Chromium trioxide	1333-82-0	ECHA: manufacture of plastic products	ECHA: 10 000 – 100 000 tons/a	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
SVHC		Annex XV: catalyst in production of polyethylene and other plastics SPIN: no POL related uses	No POL related uses in SPIN.		
Cobalt (II) diacetate SVHC	71-48-7	ECHA: polymers, manufacture of chemicals and plastic products Annex XV: production of other chemicals and polymers (intermediate), cobalt salts are used to improve the adhesion of rubber to steel SPIN: manufacture of rubber and plastic products	ECHA: 100 – 1 000 tons/a SPIN (2011): 0 tons/a, no POL related uses after 2011.	not evaluated in HAZBREF	
Cyclohexane-1,2-dicarboxylic anhydride (HHPA) and all possible combinations of the cis- and trans-isomers SVHC	85-42-7 (HHPA), 14166-21-3 (trans-HHPA), 13149-00-3 (cis-HHPA)	ECHA: polymers Annex XV: manufacture of alkyd resins, plasticisers and as hardener in epoxy resins. Industrial use as monomer in the manufacture of resins. SPIN: manufacture of rubber and plastic products	ECHA: 10 000 – 100 000 tons/a SPIN (2016): 0 tons/a, no POL related uses after 2016.	not evaluated in HAZBREF	
Decamethyl-cyclopentasiloxane (D5) SVHC	541-02-6	ECHA: polymers, intermediate Annex XV: used as a monomer in the production of silicone polymers, resins and other organosilicon substances, used as a feedstock for the production of silicone polymers SPIN: manufacture of rubber and plastic products	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 1,2 tons/a	2,0% to surface water 74,9% to sludge 0% biodegradation 23,1% volatilisation	

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (ADCA) SVHC	123-77-3	ECHA: polymers and laboratory chemicals, manufacture of plastic products and rubber products Annex XV: manufacture of plastics products, including compounding and conversion, a blowing agent in the rubber and plastics industry SPIN: raw materials for production of rubber products and plastics	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 116,8 tons/a	99,8% to surface water 0,2% to sludge 0% biodegradation 0% volatilisation	
Diboron trioxide SVHC	1303-86-2	ECHA: intermediate, manufacture of chemicals Annex XV: borates polymer production SPIN: no POL related uses	ECHA: 1 000 – 10 000 tons/a No POL related uses in SPIN.	not evaluated in HAZBREF	
Dibutyl phthalate (DBP) SVHC	84-74-2	ECHA: manufacture of plastic products, intermediate Annex XV: polymer industry: softener (plasticiser in PVC) SPIN: raw materials for production of plastics*, manufacture of rubber and plastic products**	ECHA: 1 000 – 10 000 tons/a SPIN: 3 tons/a (2009)*, 0 tons/a (2013)**, no POL related uses after 2013.	9% to surface water 33% to sludge 58% biodegradation 0% volatilisation (Simple Treat model, ECB 2003)	Included in the Annex XIV of REACH (Authorisation list). Use above 0.1% by weight restricted in plastics, toys and childcare articles (some exemptions exist). See https://echa.europa.eu/documents/10162/aaa92146-a005-1dc2-debe-93c80b57c5ee for details.
Dicyclohexyl phthalate (DCHP) SVHC	84-61-7	ECHA: polymers Annex XV: manufacturing of compounds for PVC, rubber and plastic compounds (use as co-plasticisers)	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0,2 tons/a	not evaluated in HAZBREF	

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
		SPIN: manufacture of plastics in primary forms			
Diethyl sulphate SVHC	64-67-5	ECHA: polymers, manufacture of chemicals Annex XV: no information on use* SPIN: no data	ECHA: 1 – 10 tons/a SPIN: no data	not evaluated in HAZBREF	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i>
Diisobutyl phthalate (DIBP) SVHC	84-69-5	ECHA: polymers, manufacture of plastic products and chemicals Annex XV: specialist plasticiser, gelling aid in combination with other plasticisers SPIN: manufacture of rubber and plastic products	ECHA: 1 – 10 tons/a SPIN (2017): 1,2 tons/a	5,3% to surface water 9,2% to sludge 70,1% biodegradation 15,4% volatilisation	Included in the Annex XIV of REACH (Authorisation list). Use above 0.1% by weight restricted in plastics, toys and childcare articles (some exemptions exist). See https://echa.europa.eu/documents/10162/aaa92146-a005-1dc2-debe-93c80b57c5ee for details
Diisopentyl phthalate (DIPP) SVHC	605-50-5	ECHA: no data Annex XV: May be used as plasticiser for PVC products and other polymers. SPIN: no data	ECHA: 1 – 10 tons/a or 10 – 100 tons/a (inconsistent data in ECHA CHEM) SPIN: no data	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).
Dimethyl sulphate SVHC	77-78-1	ECHA: polymers, manufacture of chemicals Annex XV: no information on use* SPIN: no POL related uses	ECHA: no data* No POL related uses in SPIN.	not evaluated in HAZBREF	This substance may still be used in polymer sector. <i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i>

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
Dinoseb (6-sec-butyl-2,4-dinitrophenol) SVHC	88-85-7	ECHA: polymers, manufacture of chemicals and plastic products, production of resins, rubbers, polymers Annex XV: no information on use* SPIN: no data	ECHA: 1 000 – 10 000 tons/a SPIN: no data	not evaluated in HAZBREF	Also used as herbicide. <i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i>
Dioxobis-(stearato)trilead SVHC	12578-12-0	ECHA: polymers, manufacture of plastic products Annex XV: no information on use* SPIN: manufacture of plastic products	ECHA: 1+ tons/a or 1 000+ tons/a (inconsistent data in ECHA CHEM) SPIN (2009): 0 tons/a, no use after 2009.	not evaluated in HAZBREF	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i>
Disodium tetraborate, anhydrous SVHC	1330-43-4, 1303-96-4 (Borax), 12179-04-3 (pentahydrate)	ECHA: manufacture of chemicals, intermediate Annex XV: production of plastics, resins, rubbers, nylon, elastomers, used as: industrial fluids, adhesives, flame retardants, reagent chemicals SPIN: manufacture of rubber and plastic products	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 0 tons/a	7,9% to surface water 0% to sludge 91,6% biodegradation 0,5% volatilisation	
Dodecamethyl-cyclohexasiloxane (D6) SVHC	540-97-6	ECHA: intermediate Annex XV: Use as a monomer in the production of polysiloxane polymers and resins. Use as intermediate. SPIN: no POL related uses	ECHA: 10 000 – 100 000 tons/a No POL-related uses in SPIN.	1,9% to surface water 89,4% to sludge 0% biodegradation 8,7% volatilisation	
Ethyldiamine (EDA)	107-15-3	ECHA: adhesives and sealants, manufacture of chemicals	ECHA: 10 000+ tons/a	not evaluated in HAZBREF	

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
SVHC		Annex XV: monomer use in epoxy, PU, adhesives, coatings and other polymers, use of polymer - residual monomer SPIN: manufacture of rubber and plastic products	SPIN (2017): 0 tons/a		
Fatty acids, C16-18, lead salts SVHC WFD PS	91031-62-8	ECHA: polymers, manufacture of plastic products Annex XV: no information on use* SPIN: no data	ECHA: 1 000 – 10 000 tons/a SPIN: no data	not evaluated in HAZBREF	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i> Potential REACH restriction in preparation
Formaldehyde, oligomeric reaction products with aniline SVHC WFD PS	25214-70-4	ECHA: intermediate Annex XV: intermediate in MDI and high performance polymer production, hardener in epoxy resins and in adhesives SPIN: manufacture of rubber and plastic products	ECHA: 100 – 1 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).
Hexahydro-4-methylphthalic anhydride SVHC	19438-60-9	ECHA: polymers Annex XV: manufacture of polyester and alkyd resins, plasticisers for thermoplastic polymers, as hardeners for epoxy resins and chain cross-linkers for thermoplastic polymers SPIN: manufacture of rubber and plastic products	ECHA: 1 000 – 10 000 tons/a SPIN (2016): 142 tons/a	not evaluated in HAZBREF	

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
Hexahydro-methylphthalic anhydride SVHC	25550-51-0	ECHA: used in in formulation or re-packing and at industrial sites Annex XV: manufacture of polyester and alkyl resins and plasticisers for thermoplastic polymers, hardeners for epoxy resins and chain cross-linkers for thermoplastic polymers SPIN: manufacture of rubber and plastic products	ECHA: 1 000 – 10 000 tons/a SPIN (2010): 0 tons/a, no POL related uses after 2010.	not evaluated in HAZBREF	
Hydrazine SVHC	302-01-2, 7803-57-8	ECHA: polymers, manufacture of chemicals and plastic products Annex XV: wide use as an intermediate, use as a monomer in polymerisations (mostly for polyurethane coatings and adhesives) SPIN: no POL related uses	ECHA: 1 000 – 10 000 tons/a No POL related uses in SPIN.	not evaluated in HAZBREF	
Imidazolidine-2-thione (2-imidazoline-2-thiol) SVHC	96-45-7	ECHA: manufacture of rubber products Annex XV: polymer preparations and compounds, process regulators for polymerisation processes in production of resins, rubbers, polymers SPIN: raw materials for production of rubber*, manufacture of rubber and plastic products**	ECHA: 1 000 – 10 000 tons/a SPIN: 10 tons/a (2011)*, 0 tons/a (2012)**, no POL related uses after 2012.	99,9% to surface water 0% to sludge 0% biodegradation 0,1% volatilisation	
Lead SVHC	7439-92-1	ECHA: polymers Annex XV: formulation or repacking etc.	ECHA: 1 000 000 – 10 000 000 tons/a	11% to surface water 89% to sludge 0% biodegradation	Most likely not used as elemental lead but as different lead salts. Use of lead and lead compounds in PVC stabilisers has ceased in

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
WFD PS		SPIN: raw materials for production of plastics	SPIN (2017): 0 tons/a	0% volatilisation (modelling + measured data; Vieno 2014)	EU in 2015 (REACH restriction). REACH restriction in preparation.
Lead chromate molybdate sulphate red (C.I. Pigment Red 104) SVHC WFD PS	12656-85-8	ECHA: polymers, manufacture of plastic products Annex XV: vinyl and cellulose acetate plastics, rubber and plastic formulation for commercial applications and export SPIN: manufacture of rubber and plastic products	ECHA: 1 000 – 10 000 tons/a SPIN (2015): 6,3 tons/a No POL related uses after 2015.	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).
Lead monoxide (lead oxide) SVHC WFD PS	1317-36-8	ECHA: polymers and adsorbents Annex XV: no information on use* SPIN: manufacture of rubber and plastic products	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 0 tons/a	Lead: 11% to surface water 89% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i> Use of lead and lead compounds in PVC stabilisers has ceased in EU in 2015 (REACH restriction).
Lead oxide sulfate SVHC WFD PS	12036-76-9	ECHA: polymers Annex XV: no information on use* SPIN: no data	ECHA: 1 – 10 tons/a or 100 – 1 000 tons/a (inconsistent data in ECHA CHEM) SPIN: no data	Lead: 11% to surface water 89% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i> Use of lead and lead compounds in PVC stabilisers has ceased in EU in 2015 (REACH restriction).
Lead sulfochromate yellow	1344-37-2	ECHA: polymers, manufacture of plastic products	ECHA: 1 000 – 10 000 tons/a	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
(C.I. Pigment Yellow 34) SVHC WFD PS		Annex XV: coloration of plastics, coating of plastic material SPIN: manufacture of rubber and plastic products	SPIN (2015): 0 tons/a, no POL related uses after 2015.		
Methyloxirane (Propylene oxide) SVHC	75-56-9	ECHA: polymers Annex XV: no information on use* SPIN: raw materials for production of plastics	ECHA: 1 000 000 – 10 000 000 tons/a SPIN (2017): 1 885 tons/a	4,0% to surface water 0% to sludge 16,7% biodegradation 79,3% volatilisation	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i>
N,N-dimethyl-acetamide (DMAC) SVHC	127-19-5	ECHA: intermediate Annex XV: Spinning solvent in the production of fibres of various polymers including acrylic, polyurethanepolyurea copolymer and meta-aramid. Also used as a solvent for production of films of polyimide. SPIN: no POL related uses	ECHA: 1 000+ tons/a No POL related uses in SPIN.	22,5% to surface water 0,1% to sludge 77,4% biodegradation 0% volatilisation	
N,N-dimethyl-formamide SVHC	68-12-2	ECHA: used in laboratory chemicals, intermediate Annex XV: use as a process solvent for the manufacture of substances including polymers used e.g. in plastics, artificial leathers, coatings, resins, use as a cleaning solvent, e.g. in textile and plastics industries and laboratories	ECHA: 10 000 – 100 000 tons/a SPIN (2011): 0 tons/a, no POL related uses after 2011.	not evaluated in HAZBREF	

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
		SPIN: manufacture of rubber and plastic products			
Octamethylcyclotrioxane (D4) SVHC	556-67-2	ECHA: manufacture of chemicals, rubber and plastic products Annex XV: feedstock for the production of silicone polymers SPIN: industry for plastics in primary forms, raw materials for production of rubber products and plastics	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 2,5 tons/a	2,6% to surface water 48,4% to sludge 0% biodegradation 49% volatilisation	
Orange lead (lead tetroxide) SVHC WFD PS	1314-41-6	ECHA: polymers and adsorbents, manufacture of chemicals and plastic products Annex XV: no information on use* SPIN: manufacture of rubber and plastic products	ECHA: 10 000 – 100 000 tons/a SPIN (2010): 0 tons/a, no POL related uses after 2010.	Lead: 11% to surface water 89% to sludge 0% biodegradation 0% volatilisation (modelling + measured data; Vieno 2014)	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i> Use of lead and lead compounds in PVC stabilisers has ceased in EU in 2015 (REACH restriction).
p-(1,1-dimethylpropyl) phenol SVHC	80-46-6	ECHA: polymers, manufacture of chemicals and plastic products Annex XV: not found SPIN: no POL related uses	ECHA: 100 – 1 000 tons/a No POL related uses in SPIN.	not evaluated in HAZBREF	
Pentalead tetraoxide sulphate SVHC	12065-90-6	ECHA: polymers, manufacture of plastic products and chemicals Annex XV: no information on use* SPIN: manufacture of plastic and rubber products	ECHA: 10 000 – 100 000 tons/a SPIN (2006): 0 tons/a, no use after 2006.	not evaluated in HAZBREF	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i>

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
					Use of lead and lead compounds in PVC stabilisers has ceased in EU in 2015 (REACH restriction).
Perfluorobutane sulfonic acid (PFBS) and its salts SVHC	375-73-5	ECHA: polymers, manufacture of plastic products Annex XV: catalyst in polymer manufacture and as catalyst in chemical synthesis, additive/reactant in polymerisation processes in e.g. polycarbonate production SPIN: no data	ECHA: 0 – 10 tons/a SPIN: no data	not evaluated in HAZBREF	
[Phthalato(2-)] dioxotrilead SVHC WFD PS	69011-06-9	ECHA: polymers, manufacture of plastic products Annex XV: no information on use* SPIN: manufacture of rubber and plastic products	ECHA: 0 – 10 tons/a SPIN (2007): 0 tons/a no use after 2007.	not evaluated in HAZBREF	*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website. Use of lead and lead compounds in PVC stabilisers has ceased in EU in 2015 (REACH restriction).
Sulfurous acid, lead salt, dibasic SVHC WFD PS	62229-08-7	ECHA: polymers, manufacture of plastic products Annex XV: no information on use* SPIN: manufacture of rubber and plastic products	ECHA: 0 – 10 tons/a SPIN (2009): 0 tons/a, no use after 2009.	not evaluated in HAZBREF	*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website. Use of lead and lead compounds in PVC stabilisers has ceased in EU in 2015 (REACH restriction).
Terphenyl hydrogenated	61788-32-7	ECHA: polymers, manufacture of chemicals and plastic products	ECHA: 10 000 – 100 000 tons/a	not evaluated in HAZBREF	

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
SVHC		Annex XV: additive in plastic applications SPIN: manufacture of rubber and plastic products	SPIN (2017): 0 tons/a		
Trilead dioxide phosphonate SVHC WFD PS	12141-20-7	ECHA: polymers, adhesives and sealants, manufacture of plastic products, chemicals and rubber products Annex XV: no information on use* SPIN: manufacture of rubber and plastic products	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	<i>*The available use information is provided in the registration dossiers (authorities with access rights only) or on ECHA's dissemination website.</i> Use of lead and lead compounds in PVC stabilisers has ceased in EU in 2015 (REACH restriction).
Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with = 0.1% w/w of 4-nonylphenol, branched and linear (4-NP) SVHC	Mixture of two substances, no CAS number presented in ECHA database 26523-78-4 [Tris(nonylphenyl) phosphite]	ECHA: polymers, manufacture of rubber and plastic products Annex XV: used as an antioxidant to stabilise polymers, use of formulated polymer in manufacturing, coatings and adhesives SPIN: industry for plastics in primary forms, raw materials for production of plastics	ECHA: 10 000 – 100 000 tons/a SPIN (2017): 0,2 tons/a	not evaluated in HAZBREF	
Trixylyl phosphate SVHC	25155-23-1	ECHA: polymers, manufacture of plastic products Annex XV: starting material for polymer foam production, manufacturing and use of plastic products	ECHA: 100+ tons/a or 1 000+ tons/a (inconsistent data in ECHA CHEM) No POL related uses in SPIN.	not evaluated in HAZBREF	Included in the Annex XIV of REACH (Authorisation list).

Substance (SVHC / WFD)	CAS	Use in POL sector (ECHA/SPIN)	Total imported or manufactured (tons/a) ⁶	Fate in WWTP ⁷	Other information
		SPIN: no POL related uses			

⁶) Information taken from ECHA chemical database (<https://echa.europa.eu/fi/information-on-chemicals>) 1.4.2020, indicates total imported/manufactured amount in EU (tons per year) in all uses, no information on use specifically in POL sector. The years of the information which the data are based on is unknown. Information taken from SPIN database (<http://spin2000.net/>) 1.4.2020, indicates total imported/produced volume in pol sector in the Nordic Countries in one particular year (tons per year).

⁷) GoA2.2 mini-report

References:

- Annex XV dossier 1,2,3-trichloropropane
- Annex XV dossier 1,2-dichloroethane
- Annex XV dossier 1-methyl-2-pyrrolidone
- Annex XV dossier 2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)
- Annex XV dossier 2,2'-dichloro-4,4'-methylenedianiline
- Annex XV dossier 4-(1,1,3,3-tetramethylbutyl)phenol
- Annex XV dossier [4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26)
- Annex XV dossier 4,4-Oxydianiline
- Annex XV dossier 4-Nonylphenol, branched and linear, ethoxylated
- Annex XV dossier Bis(2-ethylhexyl)phthalate
- Annex XV dossier bis(2-methoxyethyl) ether (Diglyme)
- Annex XV dossier Boric acid
- Annex XV dossier C,C'-azodi(formamide) (ADCA)
- Annex XV dossier Dibutyl phthalate
- Annex XV dossier Diisobutyl phthalate
- Annex XV dossier Diethyl sulphate
- Annex XV dossier Diisopentylphthalate (DIPP)
- Annex XV dossier Dimethyl sulphate
- Annex XV dossier Dinoseb(ISO); 6-sec-butyl-2,4-dinitrophenol
- Annex XV dossier Dioxobis(stearato)trilead

- Annex XV dossier Disodium tetraborate, anhydrous
- Annex XV dossier Fatty acids, C16-18, lead salts
- Annex XV dossier Formaldehyde, oligomeric reaction products with aniline
- Annex XV dossier Hexahydromethylphthalic anhydride Hexahydro-4-methylphthalic anhydride Hexahydro-1-methylphthalic anhydride Hexahydro-3-methylphthalic anhydride
- Annex XV dossier Hydrazine
- Annex XV dossier Imidazolidine-2-thione (2-imidazoline-2-thiol)
- Annex XV dossier Lead chromate molybdate sulfate red (C.I. Pigment Red 104)
- Annex XV dossier Lead monoxide [Lead oxide]
- Annex XV dossier Lead oxide sulfate
- Annex XV dossier Lead sulfochromate yellow (C.I. Pigment Yellow 34)
- Annex XV dossier Methyloxirane [Propylene oxide]
- Annex XV dossier N,N-Dimethylacetamide (DMAC)
- Annex XV dossier N,N-dimethylformamide
- Annex XV dossier Orange lead [Lead tetroxide]
- Annex XV dossier Pentalead tetraoxide sulphate
- Annex XV dossier [Phthalato(2-)]dioxotrilead
- Annex XV dossier Sulfurous acid, lead salt, dibasic
- Annex XV dossier Trilead dioxide phosphonate
- Annex XV dossier Trixylyl phosphate
- Annex XV report 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]
- Annex XV report 1,2-Benzenedicarboxylic acid, di-C6-10-alkyl esters;
- Annex XV report 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one
- Annex XV report 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5- dithia-4-stannatetradecanoate (DOTE)
- Annex XV report 4,4'-Diaminodiphenylmethane (MDA)
- Annex XV report 4,4'-isopropylidenediphenol (Bisphenol A)
- Annex XV report 4-tert-butylphenol
- Annex XV report Benzene-1,2,4-tricarboxylic acid 1,2-anhydride

- Annex XV report Cadmium carbonate
- Annex XV report Chromium trioxide
- Annex XV report Cobalt(II) diacetate
- Annex XV report Decamethylcyclotetrasiloxane; D5
- Annex XV report Dicyclohexyl phthalate (DCHP)
- Annex XV report Dodecamethylcyclohexasiloxane
- Annex XV report Ethylenediamine (ethane-1,2-diamine)
- Annex XV report Lead (lead powder and lead massive)
- Annex XV report Octamethylcyclotetrasiloxane, D4
- Annex XV report Perfluorobutane sulfonic acid (PFBS) and its salts
- Annex XV report Terphenyl, hydrogenated
- Annex XV report Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP)1
- Annex XV restriction report – four phthalates
- ECB 2003. European Union Risk Assessment on Dibutyl phthalate. European Union Risk Assessment report 29. European Chemicals Bureau.
- ECB 2007. European Union Risk Assessment on Benzyl butyl phthalate. European Chemicals Bureau.
- Mannio, J. Mehtonen, J., Londesborough, S., Grönroos, M., Paloheimo, A., Köngäs, P., Kalevi, K., Erkomaa, K., Huhtala, S., Kiviranta, H., Mäntykoski, K., Nuutinen, J., Paukku, R., Piha, H., Rantakokko, P., Sainio, P. & Welling, L. 2011. Vesiympäristölle haitallisten teollisuus- ja kuluttaja-aineiden kartoitus vesiympäristössä. Suomen ympäristö 3/2011. 97 p. Finnish Environment Institute.
- Mehtonen, J. 2009. Hazardous substances of specific concern to the Baltic Sea. Baltic Sea Environment Proceedings No. 119. 95 s. Helsinki Commission.
- Vieno, N. 2014. Haitalliset aineet jätevedenpuhdistamoilla -hankkeen loppuraportti. Vesilaitosyhdistyksen monistesarja nro 34.

Table 4: REACH substances of very high concern (SVHC) and WFD priority substances (PS) / priority hazardous substances (PHS) which have registered uses in fertiliser industry based on REACH registration information in the ECHA chemical database. Annex XV = substance specific dossiers on “Proposal for identification of a substance as a category 1A or 1B CMR, PBT, vPvB or a substance of an equivalent level of concern” under REACH Annex XV, available in the ECHA chemical database separately from the REACH registration information.

Substance (SVHC / WFD substance)	CAS	Use in Fertiliser sector (ECHA/SPIN)	Total imported or manufactured for all uses in EU (ECHA database) / for STM in Nordic countries (SPIN database) (tons/a) ⁴	Fate in wastewater treatment plant ⁵	Other information
Boric acid SVHC	10043-35-3	ECHA: fertilisers Annex XV: non-electrolytic metal coatings, metal surface treatment agents, corrosion inhibitors, rust preventive agents SPIN: crop and animal production, agriculture, fertilisers	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 42,2 tons/a	not evaluated in HAZBREF	
Cobalt dichloride SVHC	7646-79-9	ECHA: metal surface treatment products, manufacture of chemicals and fabricated metal products Annex XV: nitrate fertilisers SPIN: no fertiliser related uses	ECHA: 1 000 – 10 000 tons/a No fertilisers related uses in SPIN.	not evaluated in HAZBREF	

⁴ Information taken from ECHA chemical database (<https://echa.europa.eu/fi/information-on-chemicals>) 1.4.2020, indicates total imported/manufactured amount in EU (tons per year) in all uses, no information on use specifically in POL sector. The years of the information which the data are based on is unknown.
Information taken from SPIN database (<http://spin2000.net/>) 1.4.2020, indicates total imported/produced volume in pol sector in the Nordic Countries in one particular year (tons per year).

⁵ HAZBREF 2.2 report

Substance (SVHC / WFD substance)	CAS	Use in Fertiliser sector (ECHA/SPIN)	Total imported or manufactured for all uses in EU (ECHA database) / for STM in Nordic countries (SPIN database) (tons/a) ⁴	Fate in wastewater treatment plant ⁵	Other information
Cobalt (II) carbonate SVHC	513-79-1	ECHA: fertilisers Annex XV: adhesion: ground coat frit, production of other chemicals (intermediate) SPIN: manufacture of food products, nutrients, fertilisers	ECHA: 1 000 – 10 000 tons/a SPIN (2017): 0 tons/a	not evaluated in HAZBREF	
Disodium octaborate SVHC	12008-41-2	ECHA: fertilisers Annex XV: micronutrient fertilisers SPIN: no fertilisers related use	ECHA: 1 000 – 10 000 tons/a No fertilisers related use in SPIN.	not evaluated in HAZBREF	
Disodium tetraborate, anhydrous SVHC	1330-43-4, 1303-96-4 (Borax), 12179-04-3 (pentahydrate)	ECHA: fertilisers Annex XV: metal production, metal surface refining (pentahydrate) SPIN: crop and animal production, agriculture, fertilisers	ECHA: 100 000 – 1 000 000 tons/a SPIN (2017): 0 tons/a 343,5 tons/a (Borax) 159,2 tons/a (pentahydrate)	7,9% to surface water 0% to sludge 91,6% biodegradation 0,5% volatilisation	

References:

Annex XV reports of boric acid, cobalt dichloride, cobalt (II) carbonate, disodium octaborate, disodium tetraborate

[http://www.ipni.net/publication/nutrifacts-na.nsf/0/5D2097137F73C07F85257EA8006297B0/\\$FILE/NutriFacts-NA-15.pdf](http://www.ipni.net/publication/nutrifacts-na.nsf/0/5D2097137F73C07F85257EA8006297B0/$FILE/NutriFacts-NA-15.pdf)