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Document title

OneCo's List of Prohibited and Restricted Substances

The lists contain substances that are contrary to OneCo's environmental policy and commitment. The purchase of new products containing these substances is therefore prohibited. The substances must not appear in products and packaging or services used within OneCo and by its subcontractors.

1. PURPOSE

OneCo has introduced the lists of prohibited and restricted substances (black and gray lists) for its need to identify and control the materials and substances used in the products and packaging or services used by OneCo or delivered to customers. The goal of banning and restricting these substances in the products and our operations is to ensure that the products and our operations are safe for people and do not cause harm to the environment. The list of prohibited substances (Black list) is based on global legal requirements and national legal obligations and OneCo's environmental policy. The list of substances to be restricted (the Gray List) contains, in addition to global and national legal obligations and OneCo's environmental policy, also market requirements.

2. TERMS AND ABBREVIATIONS

Terms and abbreviations	Definition
REACH	Regulation of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals
RoHS	Restriction of Hazardous Substances Directive
CAS	Chemical Abstract Service
EC Number	European Community number
ECHA	European Chemical Agency

3 OBJECTIVES AND REQUIREMENTS

The goal of OneCo's black and gray lists is to ensure that OneCo complies with its environmental policy, existing and expected environmental legislation and market requirements.

3.1 OneCo's List of Prohibited Substances (Black List)

In addition to legal prohibitions on certain chemicals and materials, the following substances may not be present in OneCo products and services, nor may they be present in the contracting or manufacturing processes for those products and services. This applies to all intentional uses of the specified substance but does not apply in cases where a substance consists of low concentration impurities¹.

To note: All chemicals used in contracting must be evaluated separately, according to specific procedures and risk assessments.

¹ The maximum allowed concentration by weight of the substances is <0,1% in homogeneous materials (in cables, connector pipes and joint plates, pigment in crystal glass, in lead petrol, in polymers and in electronic equipment if not stated otherwise). Exemption: Maximum allowed concentration by weight of Cadmium: <0,01%. For allowed concentrations of Chromium in Cement and Cadmium and Mercury in batteries, please contact Telia Company for additional information.

Banned substances (Black list)				
<u>Group</u>	<u>Substance</u>	<u>CAS no²</u>	<u>Banned usage</u>	<u>Legislation</u>
	2-benzotriazole-2-yl(4,6-ditert-butyl-phenol	3846-71-7	All applications	REACH: Candidate list
	4,4'-diaminodiphenylmethane (MDA)	101-77-9	All applications	REACH: Candidate list
Arsenic/arsenic compound ³		Several	In wood preservation substances	REACH: Annex XVII
Asbestos		Several	All applications	REACH: Annex XVII
Azocolourants and azodyes that can decompose to carcinogenic aromatic amines ⁴		Several	All applications	REACH: Annex XVII
Benzidine incl. salts, 4-aminobiphenyl incl. salts, thiocarbamide, phenyl -β- naphthyl amine		Several	All applications	REACH: Annex XVII
	Benzyl butyl phthalate (BBP)	85-68-7 201-622-7 (EC)	All applications	REACH: Annex XVII
	Bis (2-ethylhexyl) phthalate (DEHP)	117-81-7 204-211-0 (EC)	All applications	REACH: Annex XVII
	Beryllium Oxide	1304-56-9	All applications	
Cadmium and cadmium compounds		Several	All applications except of batteries for special applications ⁵	REACH: Annex XVII
Chromium (VI) compounds	Chromium (VI) compounds: lead chromate in general, and chromium (VI) compounds in pigments	Several	All applications	REACH: Annex XVII
	Cobalt dichloride ⁶	7646-7991	All applications	REACH: Candidate list
Creosote			All applications except for wood	REACH: Annex XVII

² EC number if available

³ Arsenic and arsenic compounds on trace element level is acceptable.

⁴ EU Directive 2002/61/EC

⁵ Exception: Nickel-cadmium batteries in stationary applications where other types of batteries is not suitable due to extreme temperatures or charging procedures. Approval is required by EU.

⁶ Note: Restricted under EC no 231-589-4

Banned substances (Black list)				
<u>Group</u>	<u>Substance</u>	<u>CAS no²</u>	<u>Banned usage</u>	<u>Legislation</u>
			preservation (poles)	
	Dimethylfumarate (DMFu)	624-49-7	All applications	REACH: Annex XVII
	Formaldehyde	50-00-0	Preservative in wood ⁷	CoRAP + EC list no: 200-001-8
Lead/ Lead compounds		Several	All applications except for lead acid batteries and lead sheeted cable maintenance ⁸	REACH: Annex XVII
CFCs – Chlorofluorocarbons		Several	All applications	The Montreal Protocol and EC/1005/2009
Halons		Several	All applications	The Montreal Protocol and EC/1005/2009
HCFCs – Hydrochlorofluorocarbons		Several	All applications	The Montreal Protocol and EC/1005/2009
	Bromochloromethane	74-97-5	All applications	The Montreal Protocol and EC/1005/2009
	Carbon tetrachloride	56-23-5	All applications	The Montreal Protocol and EC/1005/2009
	Methyl bromide	74-83-9	All applications	The Montreal Protocol and EC/1005/2009
	Methylene chloride	75-09-2	All applications	REACH: Annex XVII
	n-bromopropane	106-94-5	All applications	The Montreal Protocol and EC/1005/2009
	Tetrachloroethylene	127-18-4	All applications	The Montreal Protocol and EC/1005/2009
	1.1.1-trichloroethane	71-55-6	All applications	The Montreal Protocol and EC/1005/2009
	Trichloroethylene	79-01-6	All applications	The Montreal

⁷ Formaldehyde level <0.124 mg/m³ air (E1-norm according to test method EN 717-1) or <3.5 mg/m³ air (test method EN 717-2).

⁸ EU RoHS directive accepts concentration by weight <0,1% in homogeneous materials such as cables, connector pipes and joint plates, as pigment in crystal glass, in lead petrol and as additives in polymers and solders in electronic equipment. Stated exemptions in Annex III to the RoHS directive, 2011/65/EU, and its amendments can be used until OneCo communicates otherwise. Suppliers must inform OneCo in advance of the delivery regarding material content! OneCo takes a restrictive standpoint towards use of lead in solders in servers, storage and array systems, network infrastructure equipment for switching, signaling, transmission as well as network management for telecommunication. The RoHS exemption 7b may only be used in deliveries under specific situations agreed by OneCo in advance. Lead plates can be used in lead shielded cable repair if lead free alternatives do not exist.

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<u>Group</u>	<u>Substance</u>	<u>CAS no²</u>	<u>Banned usage</u>	<u>Legislation</u>
				Protocol and EC/1005/2009
	1,2,4-Trichlorobenzene (TBC)	120-82-1	All applications	The Montreal Protocol and EC/1005/2009
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified		25637-994 3194-55-6 13423750-6 13423751-7 13423752-8	All applications	REACH: Annex XVII
Isocyanates		Several, for instance in thermoplastics and urethanes	All applications except in manufacturing processes	REACH: Restriction proposals
Mercury/ Mercury compounds		Several	All applications	REACH: Annex XVII
Perfluorooctanoic acid (PFOA)	Pentadecafluorooctanoic acid Ammonium pentadecafluorooctanoate Sodium pentadecafluorooctanoate Potassium pentadecafluorooctanoate Silver pentadecafluorooctanoate Pentadecafluorooctanoyl fluoride Methyl pentadecafluorooctanoate Ethyl perfluorooctanoate	335-67-1 3825-26-1 335-95-5 2395-00-8 335-93-3 335-66-0 376-27-2 3108-24-5	All applications	REACH: Annex XVII
Nonadecafluorodecanoic acid and its sodium and ammonium salts (PFDA)	nonadecafluorodecanoic acid ammonium nonadecafluorodecanoate; sodium nonadecafluorodecanoate	Several, among them 607720-00-X	All applications	REACH: Annex XVII ECHA: candidate list (CMR)
Perfluorooctane sulfonic acid and its derivatives (PFOS)		Several	All applications	REACH
	Nonylphenol	25154-523	All applications	REACH: Annex XVII
	Nonylphenol ethoxylate (Nonylphenolpolyglycol ethers)	9016-45-9	All applications	REACH: Annex XVII
Nonylphenoethoxylates Organostannic compounds			All applications	REACH: Annex XVII
	Acrylamide	1979-0601	All applications	REACH: Annex XVII
PBB – Polybrominated biphenyls			All applications	RoHS ECHA

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<u>Group</u>	<u>Substance</u>	<u>CAS no²</u>	<u>Banned usage</u>	<u>Legislation</u>
PBDE – Polybrominated diphenylethers (including decaBDE)		Several	All applications ⁹	RoHS
Phthalate plasticizers	DEHP Dibutyl phthalate (DBP) Diisobutyl phthalate (DIBP) BBP	Several, such as: 84-74-2 201-557-4 84-69-5	All applications	REACH: Annex XIV and Annex XVII
Polychlorinated Biphenyls (PCB)		Several	All applications	EUR-Lex and ECHA
Polychlorinated Naphtalenes (PCN)		Several	All applications	CoRAP
Polychlorinated Terphenyls (PCT)		Several	All applications	REACH: Annex XVII
	Short Chained Chlorinated Paraffins (C10-C13)	85535-848	All applications	REACH: Candidate list and ECHA
	Tris (2-chloroethyl) phosphate	115-96-8	All applications	REACH: Candidate list and ECHA
Tri-substituted organostannic compounds (including Tributyl tin and Triphenyl tin compounds)		Several	All applications	ECHA
Pesticides / Herbicides		Several	Construction work and real estate	Herbicides such as Glyphosate is not to be used at OneCo premises or during construction and maintenance or field work on behalf of OneCo.
	Dieldrin		All applications	ECHA
	Lindane	Several	All applications	EU / Sweden: Banned according to the Stockholm Convention

⁹ Reactive appointed TBBP exemption to the ban.

3.2 OneCo's list of substances to avoid - Gray list

The substances must be avoided as far as possible in products handled by OneCo or its subcontractors. Purchases of products containing these substances may only be made if reasonable alternatives are not available and must then be justified. The substances/chemical product must then be assessed separately, according to special procedures for risk assessment.

The following substances are under evaluation and should be avoided in all products and services, whether included in the contract or manufacturing processes of products and services of OneCo. This applies to all intentional uses of the specified substance but does not apply in cases where a substance consists of low concentration pollutants¹⁰.

To note: All chemicals used in contracting must be evaluated separately, according to specific procedures and risk assessments.

Please note that the producer/supplier must be able to report the content of all specified materials/substances listed below including chemicals listed in the REACH candidate list upon request by OneCo.

Restricted substances (Grey list)			
<u>Group</u>	<u>Substance</u>	<u>CAS no¹¹</u>	<u>Reason for concern and reference</u>
	4,4'-Isopropylidendiphenol Bisphenol A (BPA)	80-05-7	REACH: Candidate list
	1,2-Benzene-dicarboxylic acid, diC6-8-branched alkyl esters, C7- rich (DHP)	71888-89-6	REACH: Candidate list
	1,2-Benzene-dicarboxylic acid, diC7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	REACH: Candidate list
Antimony and its compounds		Several	Toxic
Aromatic amines ¹²		Several	Carcinogenic
Beryllium and its compounds		Several	BeO: Carcinogenic. Beryllium alloys can form BeO when recycled.
	Bis(2-methoxyethyl) phthalate	117-82-8	REACH: Candidate list
Bismuth and its compounds		Several	Negative for recycling
Chlorinated polymers		Several	Can create toxic substances when recycled
Fluorocarbons – FC		Several	Global warming
Fluorohydrocarbons – HFC		Several	Global warming
	Formaldehyde	50-00-0	Carcinogenic
Halogenated flame		Several	Can create toxic

¹⁰ The maximum allowed concentration by weight of the noted substances is <0,1% in homogeneous materials such as in cables, connector pipes and joint plates, pigment in crystal glass, in lead petrol, in polymers and in electronic equipment if not stated otherwise. For the following substance the maximum allowed concentration is: Cadmium <0,01%. For allowed concentrations of Chromium in Cement and Cadmium and Mercury in batteries, please contact Telia Company for additional information.

¹¹ EC number if available

¹² Except for the ones that's banned according to 2002/61/EC

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Restricted substances (Grey list)			
<u>Group</u>	<u>Substance</u>	<u>CAS no¹¹</u>	<u>Reason for concern and reference</u>
retardants except brominated of the types PBB and PBDE which are prohibited ¹³			substances when recycled
Lead/lead compounds in batteries. Certain applications are banned		7439-92-1	Toxic
Manganese and Manganese compounds (and dioxide)		7439-96-5 1313-13-9	Toxic
Medium chained chlorinated paraffin's C14-C17		Several	Toxic
Nickel and its alloys, except in steel alloys		Several	Allergenic
	Nitrogen trifluoride	7783-54-2	Global warming
Perchlorates		Several	Labeling requirements
Phthalate (Except the ones that is banned)		Several	Carcinogenic
Polycyclic Aromatic Hydrocarbons (PAH)		Several	Carcinogenic
Poly Vinyl Chloride (PVC)		Several	Can create toxic substances when recycled + HCl in fire
Radioactive substances		Several	Carcinogenic
Selenium and selenium compounds		7782-49-2	Toxic
	Sodium dichromate	10588-01-9 7789-12-0	Carcinogenic, mutagenic and toxic to reproduction
	Sulfur hexafluoride, SF6	2551-62-4	Global warming
	N,N'-bis(1,4-dimethylpentyl)-p-phenylenediamine (77PD)	3081-14-9	Toxic
	N-1,3-dimethylbutyl-N'-phenyl-pphenylenediamine (6PPD)	793-24-8	Toxic
	N-(cyclohexylthio)phthalimide	17796-82-6	Toxic
	4-(1,1,3,3- tetramethylbutyl)phenol	140-66-9	Toxic
Thermosetting Plastic´s (Acrylate, Amino, Epoxy, Urethane-PUR incl. isocyanates and diisocyanates).	Such as but not limited to: '2,3-epoxypropyl methacrylate; glycidyl methacrylate, dibutyltin dilaurate and dibutyl[bis(dodecanoyloxy)]stannane	Examples: 607-12300-4, 203-441-9 106-91-2 050-03000-3	REACH: Annex XVII ECHA (CMR)
All substances on the REACH candidate list ¹⁴ that have not been specified above		Several	Several

The above goals and requirements apply to the extent that they do not place OneCo in violation of domestic laws and regulations.

¹³ See OneCo's "Black list"

¹⁴ <http://echa.europa.eu/candidate-list-table>