Annex to the Citizen Group Green Procurement Guidelines

List of Controlled Substances

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Rank 1: Standards for substances whose use in materials is prohibited

Rank 2: Standards for substances whose use is restricted by conditions such as thresholds and content parts

Rank 3: Standards for substances for which accurate information must be provided, as well as the identification and management of content and content parts

Rank 4: Standards for substances that are prohibited from use in the manufacturing process of procured items

Issued on July 1, 2025

Citizen Watch Co., Ltd.

Rank 1： Standards for substances whose use in materials is prohibited

1．Relevant legislation: Class 1 Specific Chemical Substances prescribed in the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (hereafter, the “Chemical Substances Control Law”), Article 2, Paragraph 2, Substances Prohibited for Manufacture by the Industrial Safety and Health Act, Article 55, Specified Substances prescribed in the Law Concerning the Protection of the Ozone Layer Through the Control of Specified Substances and other Measures (hereinafter referred to as the Ozone Layer Protection Law), Article 2, Paragraph 1, 5 types of PBT substances according to the U.S. Toxic Substances Control Act (TSCA), Article 6(h), Substances prohibited under paragraph 2 of Supplementary Provision 16 (PFAS) of the Swiss Chemicals Risk Reduction Decree, and substances covered by Annex A (Elimination) of the POPs Convention.

Meanwhile, Class 1 Specific Chemical Substances, which are byproducts of the manufacture of other chemical substances, should be managed in accordance with the principles of best available technology (BAT) and in compliance with the standards set by government agencies.

No.	Chemical substances	CAS No.	Primary legislation	Primary environmental effects	Primary applications
1-1-1	Aldrin	309-00-2	Chemical Substances Control Law	Persistency, high accumulability	Insecticides
1-1-2	Endrin	72-20-8	As above	As above	Insecticides
1-1-3	Chlordanes		As above	As above	Termite disinfestants etc.
1-1-4	Dieldrin	60-57-1	As above	As above	Insecticides
1-1-5	Hexachlorobenzene	118-74-1	As above	As above	Raw material for insecticides etc.
1-1-6	DDT	50-29-3	As above	As above	Insecticides
1-1-7	N,N'-Ditolyl-p-phenylenediamine		As above	As above	Antioxidants for rubber, styrene-butadiene rubber
1-1-8	2,4,6-Tri-tert-butylphenol	732-26-3	As above TSCA	As above	Antioxidants and other additives (limited to lubricating oils and fuel oils) , lubricating oil
1-1-9	Toxaphene	8001-35-2	As above	As above	Insecticides, mite control agents (in agricultural and livestock farming applications)
1-1-10	Mirex	2385-85-5	As above	As above	Flame retardants for resins, paints, paper, electrical

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No.	Chemical substances	CAS No.	Primary legislation	Primary environmental effects	Primary applications
					products etc., insecticide, ant repellant
1-1-11	Bis(tributyltin) oxide	56-35-9	As above	As above	Antifouling agent for fishing nets, and boat hulls etc.
1-1-12	Polychlorinated biphenyls (PCB)		As above	As above	Insulating oils etc.
1-1-13	Polychloronaphthalenes (with 2 or more chlorine atoms)		As above	As above	Machine oils etc.
1-1-14	Dicohol		As above	As above	Mite preventative agents
1-1-15	Hexachlorobuta-1,3-diene	87-68-3	As above TSCA	As above	Solvents
1-1-16	2-(2H-1,2,3-Benzotriazole-2-yl)-4,6-di-tert-butylphenol	3846-71-7	As above	As above	UV light absorbents
1-1-17	Perfluoro (octane-1-sulfonic acid)(PFOS) or its salts		As above	As above	Water and oil repellents, surfactants
1-1-18	Perfluoro (octane-1-sulfonyl) = fluoride (PFOSF)	307-35-7	As above	As above	PFOS raw material
1-1-19	Pentachlorobenzene	608-93-5	As above	As above	Agricultural chemicals, by-products
1-1-20	alpha-Hexachlorocyclohexane	319-84-6	As above	As above	Lindane by-product
1-1-21	beta-Hexachlorocyclohexane	319-85-7	As above	As above	Lindane by-product
1-1-22	gamma-Hexachlorocyclohexane (also known as Lindane)	58-89-9	As above	As above	Agricultural chemicals, insecticides
1-1-23	Chlordecone	143-50-0	As above	As above	As above
1-1-24	Hexabromobiphenyl	36355-01-8	As above	As above	Flame retardants
1-1-25	Tetrabromodiphenyl ether		As above	As above	As above
1-1-26	Pentabromodiphenyl ether		As above	As above	As above
1-1-27	Hexabromodiphenyl ether		As above	As above	As above
1-1-28	Heptabromodiphenyl ether		As above	As above	As above
1-1-29	Endosulfan	115-29-7	As above	As above	Agricultural chemicals
1-1-30	Hexabromocyclododecane (HBCD)	3194-55-6	As above	As above	Flame retardant treatment for textiles, flame retardant beads

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No.	Chemical substances	CAS No.	Primary legislation	Primary environmental effects	Primary applications
					for EPS, flame-proofed textiles and curtains
1-1-31	Pentachlorophenol and its salts and esters		As above	As above	Wood antiseptics, Insecticides and fungicides
1-1-32	Polychlorinated linear paraffin(having 10 to 13 carbon atoms and containing more than 48% of chlorine by total weight)		As above	As above	Flame retardants
1-1-33	Decabromodifenyl ether		As above TSCA	As above	As above
1-1-34	Perfluorooctanoic acid （PFOA） and its salts, PFOA-related substances		As above	As above	For semiconductor, extinguishing agents, water repellents
1-1-35	Asbestos		Industrial Safety and Health Act	Carcinogenic	Insulator, filler, thermal insulation
1-1-36	Bis(chloromethyl) ether	542-88-1	As above	As above	Dyes, Pigments
1-1-37	4-Aminodiphenyl	92-67-1	As above	As above	Pigments
1-1-38	4-Nitrodiphenyl and its salts		As above	As above	Dye intermediate
1-1-39	Benzidine and its salts	92-87-5	As above	As above	Dyes, Hardener
1-1-40	beta-Naphthylamine and its salts	91-59-8	As above	As above	Dyes, Antioxidant intermediate
1-1-41	Yellow phosphorous		As above	Flammability, acute toxicity	Matches
1-1-42	Benzene adhesive (greater than 5% benzene)		As above	Carcinogenic	Rubber adhesive
1-1-43	Ozone depleting substances(*1)		Ozone Layer Protection Law	Ozone layer destruction	Refrigerants, foaming agents, extinguishing agents
1-1-44	Pentachlorobenzenethiol (PCTP)	133-49-3	TSCA	Non-decomposable and highly accumulative	Additive for improving rigidity of rubber products
1-1-45	Tris(isopropylphenyl) phosphate PIP (3:1)	68937-41-7	TSCA	Non-decomposable and highly accumulative	Flame retardant plasticizers for vinyl chloride products
1-1-46	Perfluorohexanesulfonic acid (PFHxS), its chlorides and related substances		Chemicals Risk Reduction Decree	Persistent and highly accumulative	Extinguishing foam, abrasives and cleaners, coatings, etc.
1-1-47	Methoxychlor	72-43-5	Chemical Substances Control Law	Non-decomposable, bio-accumulative	Insecticides, etc.

Rank 1：

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No.	Chemical substances	CAS No.	Primary legislation	Primary environmental effects	Primary applications
1-1-48	Declorampras and its isomers	13560-89-9 135821-03-3 135821-74-8	As above	Non-decomposable, bio-accumulative	Flame retardants, etc.
1-1-49	UV-328	25973-55-1	As above	Non-decomposable, bio-accumulative	Ultraviolet absorbents, etc.

(*1) The term "ozone-depleting substances" refers to the Specified Substances listed in the middle column of Annex 1 of The Law Concerning the Protection of the Ozone Layer Through the Control of Specified Substances and other Measures.

Rank 2：

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Rank 2: Standards for substances whose use is restricted by conditions such as thresholds and content parts

1．Relevant legislation: 2011/65/EU (RoHS), Annex II、Annex III、Annex IV, provided that Annex II shall be according to Amendment Directive 2015/863/EU.

No.	Chemical substances	Threshold value	Primary environmental effects	Primary applications
2-1-1	Cadmium and its compounds	0.01%	Kidney dysfunction Reproductive defects Carcinogenic	Pigments, anti-rust treatments, batteries
2-1-2	Hexavalent chromium compounds	0.1%	Carcinogenic	Pigments, paints, inks, catalysts
2-1-3	Lead and its compounds	0.1%	Central nervous system dysfunction Carcinogenic	Rubber curing agents, pigments, solder, plating
2-1-4	Mercury and its compounds	0.1%	Brain defects Mental disorders	Luminescence materials, electrical contacts
2-1-5	PBBs	0.1%	Bioaccumulative Production of Dioxins during combustion	Flame retardant
2-1-6	PBDEs	0.1%	Bioaccumulative Production of Dioxins during combustion	Flame retardant
2-1-7	Di (2-ethylhexyl) phthalate DEHP	0.1%	Serious influential anxiety to environment Reproductive toxicity	Plasticizers for resin, Paints, pigments, adhesives, lubricating oil additives
2-1-8	Butyl bezy phthalate BBP	0.1%	Reproductive toxicity	As above
2-1-9	Dibutyl phthalate DBP	0.1%	As above	As above
2-1-10	Diisobutyl phthalate DIBP	0.1%	As above	As above

- It is also acceptable to keep the content rate below the threshold. (Regardless of whether it is intentional or not)
- Refer to 2011/65/EU (RoHS) Annex III and Annex IV for exemptions.

2．Relevant legislation:94/62/EC (EU Packaging Waste Disposal Directive)

No.	Chemical substance	Threshold	Major toxicities
2-2-1	Cadmium	0.01% by gross weight	Renal dysfunction, reproductive defects, carcinogenic
2-2-2	Hexavalent chromium compounds		Carcinogenic
2-2-3	Lead		Central nervous system dysfunction, carcinogenic
2-2-4	Mercury		Brain damage, mental disorders

3．Relevant legislation: 2023/1542 (EU Battery Regulation)

No.	Chemical substance	Threshold	Major toxicities
2-3-1	Cadmium	0.002%	Renal dysfunction, reproductive defects, carcinogenesis
2-3-2	Lead	0.01%	Central nervous system dysfunction, carcinogenic
2-3-3	Mercury	0.0005%	Brain damage, mental disorder

4．Relevant legislation: France Ministerial Order dated April 13, 2022 specifying substances contained in mineral oils prohibited for use in packaging materials and printed matter intended for the public.

No.	Chemical substances	Threshold value	Primary environmental effects	Primary applications
2-4-1	MOAH：Mineral oil aromatic hydrocarbons with 1 to 7 aromatic rings	1%(*1) 0.1%(*2) 1ppm(*3)	Reproductive toxicity Carcinogen	・Packaging materials, one-way advertisements, leaflets, etc. ・General printed materials (excluding books) (*2)
2-4-2	MOSH：Mineral oil saturated hydrocarbons with 16 to 35 carbon atoms	0.1%(*2)		

Restrictions do not apply to procured items incorporated into products that are clearly destined for countries other than France at this time.

(*1) Until December 31, 2024

(*2) After January 1, 2025

(*3) After January 1, 2025 Regulation value for aromatic rings from 3 to 7

5．Relevant legislation: 1907/2006/EC (REACH) Annex XVII

The following table shows the items in Annex XVII that may be contained in the Citizen Group's products. For details of the regulations, please refer to the original document.

No.	Chemical substances	Threshold	Main hazards	Restricted use
2-5-1	Nickel	0.88μ g/cm^2/week	Skin allergy	Molded articles that come into contact with the skin directly and for a long time.
2-5-2	Specific azo dye	0.003%	Carcinogenic	Textile and leather which are expected to come into direct contact with the skin or oral cavity for a long time
2-5-3	Hexavalent chromium	0.0003%	Carcinogenic	A leather part of a molded article including leather which is supposed to come into contact with the skin
2-5-4	Polycyclic aromatic hydrocarbons	0.0001%	Carcinogenic	Molded articles containing rubber and plastic parts that directly contact the skin and oral cavity for a long period of time and repeatedly
2-5-5	Phthalate esters	0.1%	Reproductive toxicity	Articles containing plasticizers
2-5-6	Dimethyl fumarate	0.00001%	Skin irritation	articles
2-5-7	Lead	0.05%	Central nervous system dysfunction Carcinogenic	Exterior parts of the watch touching the skin
2-5-8	Perfluorocarboxylic acids (C9-C14PFCAs), their salts and related substances	Total of PFCAs and their salts <25 ppb Total of PFCAs and related substances <260 ppb	Persistent, Highly accumulative	Manufacture and sale of individual substances Use and sale of mixtures and molded products
2-5-9	PFHxA (perfluorohexanoic acid), its salts and related substances	Total of PFHxA and its salt ＜25 ppb Total of PFHxA related substances ＜1,000 ppb	Persistent, bioaccumulative	- After October 10, 2026 Textiles and leather materials for clothing and accessories - After October 10, 2027 Textiles and leather materials other than for clothing and accessories

(*1) For details of the regulations, please refer to the list of specific aromatic amines in Table 1.

Table 1 List of specific aromatic amines

Chemical substances	CAS No.
o-anisidine	90-04-0
2-naphthylamici	91-59-8
3,3'-Dichlorobenzidine	91-94-1
4-Aminobiphenyl	92-67-1

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Benzidine	92-87-5
o-Toluidine	95-53-4
4-Chloro-2-methylaniline	95-69-2
2,4-Diaminotoluene	95-80-7
o-aminoazotoluene	97-56-3
5-Nitro-o-toluidine	99-55-8
3,3'-Dichloro-4,4 '-Diaminodiphenylmethane	101-14-4
4,4 '-methylenedianiline	101-77-9
4,4 '-Diaminodiphenyl ether	101-80-4
P-chloroaniline	106-47-8
3,3'-Dimethoxybenzidine	119-90-4
3,3'-Dimethylbenzidine	119-93-7
2-methoxy-5-methylaniline	120-71-8
2,4,5-Trimethylaniline	137-17-7
4,4'-Diaminodiphenyl sulfide	139-65-1
2,4-Diaminoanisole	615-05-4
4,4'-Diamino-3,3 '-dimethyldiphenylmethane	838-88-0
4-aminoazobenzene	60-09-3
2,4-Xylidine	95-68-1
2,6-Xylidine	87-62-7
2-Amino-5-chlorotoluene hydrochloride	3165-93-3
2-Naphthaleneamine acetic acid	553-00-4
4-Methoxy-1,3-benzenediamine sulfate	39156-41-7
2,4,5-Trimethylaniline hydrochloride	21436-97-5

Rank 3：

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Rank 3: Standards for substances for which accurate information must be provided, as well as the identification and management of content and content parts

1. Relevant legislation: EU REACH Regulations (EC) No 1907/2006 Candidate List of SVHC
   If the content rate of the following substances exceeds 0.1%, it is subject to reporting.

No	Chemical substances	CAS No.	Reason	Usage Example
3-1-1	2,4-Jinitrotoluen	121-14-2	Substances classified as carcinogenic - Article 57(a)	Chemical intermediates, raw materials for organic synthesis (toluene diamine, explosive intermediates, dyes)
3-1-2	4,4'-Diaminodiphenylmethane(MDA)	101-77-9	Substances classified as carcinogenic - Article 57(a)	Curing agents for epoxy resins and polyurethane resins
3-1-3	2,4,6-Trinitro-5-t-butyl-1,3-xylene (musk xylene)	81-15-2	Persistent, bioaccumulative (vPvB) - Article 57(e)	Fragrance ingredients
3-1-4	Acrylamide	79-06-1	Carcinogenicity - Article 57(a) Mutagenicity - Article 57(b)	Synthesis of polyacrylamide, preparation of polyacrylamide gel
3-1-5	Short-chain chlorinated paraffins (carbon chain length 10-13)	85535-84-8	"Persistent, bioaccumulative and toxic (PBT) - Article 57(d) Persistent, bioaccumulative (vPvB) - Article 57(e)"	Rubber, paints, gaskets, adhesives, lubricants, flame retardants, plasticizers
3-1-6	Ammonium heptaoxide dichromate	7789-09-5	CMR - Article 57(a), (b), (c)	Manufacturing of photoconductor screen (CRT)
3-1-7	Anthracene	120-12-7	Persistent, bioaccumulative, toxic (PBT) - Article 57(d)	Dyes, catalysts, plastic products
3-1-8	Anthracene oil	90640-80-5	Article 57(a)(b)(d)(,e)	
3-1-9	Anthracene oil, Paste	90640-81-6	Article 57(a)(b)(d)(,e)	
3-1-10	Atlases、Petrol、Reserve points	91995-15-2	Article 57(a)(b)(d)(,e)	Tar oil constituents, chemical products, impregnants, tar special paint constituents
3-1-11	Anthracene oil, paste, light distillate	91995-17-4	Article 57(a)(b)(d)(,e)	
3-1-12	Atlases (Atlases with low content)	90640-82-7	Article 57(a)(b)(d)(,e)	
3-1-13	Benzyl butyl phthalate (BBP)	85-68-7	Reproductive toxicity - Article 57(c) Endocrine disruptive	Plasticizers
3-1-14	Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	"Reproductive toxicity - Article 57(c). Serious effects on the environment Endocrine disrupting, PBT or vPvB - Article 57(f)"	Vinyl chloride plasticizer
3-1-15	Tributyl tin oxide (TBTO)	56-35-9	Persistent, bioaccumulative, toxicity (PBT) - Article 57(d)	Construction Industry
3-1-16	Boric acid	10043-35-3	Reproductive toxicity - Article 57(c)	Flame retardants, paints, brake fluid, soldering products, film developers
	Boric acid	11113-50-1	Reproductive toxicity - Article 57(c)	Flame retardants, paints, brake fluid, soldering products, film developers
3-1-17	Cobalt chloride (CoCl)	7646-79-9	Carcinogenicity - Article 57(a)	Ink for invisible writing revealed by applying heat, lubricant, desiccant (used for silica gel, etc.)
3-1-18	Pentadecanoic acid dihydrogen	1303-28-2	Carcinogenicity - Article 57(a)	Dyeing, metallurgy, wood preservatives
3-1-19	Arsenic trioxide	1327-53-3	Carcinogenicity - Article 57(a)	Raw material for metallic arsenic
3-1-20	Dibutyl phthalate (DBP)	84-74-2	Reproductive toxicity - Article 57(c) Endocrine disrupting, PBT or	Plasticizers for vinyl chloride resin, etc.

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No	Chemical substances	CAS No.	Reason	Usage Example
			vPvB - Article 57(f)	
3-1-21	Diisobutyl phthalate (DIBP)	84-69-5	Reproductive toxicity - Article 57(c) Endocrine disrupting, PBT or vPvB - Article 57(f)	Plasticizer, combined with other plasticizers, as a gelation accelerator, for the manufacture of plastics, explosives, and paints
3-1-22	Sodium tetraborate	1330-43-4	Reproductive toxicity - Article 57(c)	Glass and glass fiber, ceramics, detergents, personal care products, metallurgy, adhesives, flame retardants, industrial fluids
	Sodium tetraborate pentahydrate	12179-04-3	Reproductive toxicity - Article 57(c)	Glass and glass fiber, ceramics, detergents, personal care products, metallurgy, adhesives, flame retardants, industrial fluids
	Disodium tetraborate, decahydrate	1303-96-4	Reproductive toxicity - Article 57(c)	Glass and glass fiber, ceramics, detergents, personal care products, metallurgy, adhesives, flame retardants, industrial fluids
3-1-23	Tetraboron disodium acid hydrate	12267-73-1	Reproductive toxicity - Article 57(c)	Fire retardant
3-1-24	Hexabromic chlododecane (HBCDD) and all major diastereomers	25637-99-4	Persistent, bioaccumulative, toxic (PBT) - Article 57(d)	Fire retardant
	Hexabromic chlododecane (HBCDD) and all major diastereomers	3194-55-6	Persistent, bioaccumulative, toxic (PBT) - Article 58(d)	Fire retardant
	Hexabromic chlododecane (HBCDD) and all major diastereomers	134237-50-6	Persistent, bioaccumulative, toxic (PBT) - Article 58(d)	Fire retardant
	Hexabromic chlododecane (HBCDD) and all major diastereomers	134237-51-7	Persistent, bioaccumulative, toxic (PBT) - Article 58(d)	Fire retardant
	Hexabromic chlododecane (HBCDD) and all major diastereomers	134237-52-8	Persistent, bioaccumulative, toxic (PBT) - Article 58(d)	Fire retardant
3-1-25	Lead chromate(II)	7758-97-6	Carcinogenicity - Article 57(a) Reproductive toxicity - Article 57(c)	Dyes and pigments, pigments for paints and varnishes
3-1-26	Lead chromate molybdate sulphate (C.I. Pigment Red 104)	12656-85-8	Carcinogenicity - Article 57(a) Reproductive toxicity - Article 57(c)	Pigments for paints and coatings, colorants for plastics, printing
3-1-27	Lead hydrogen arsenate(II)	7784-40-9	Carcinogenicity - Article 57(a) Reproductive toxicity - Article 57(c)	Insecticides, wood preservatives, pesticides
3-1-28	Yellow lead (C.I. Pigment Yellow 34)	1344-37-2	Carcinogenicity - Article 57(a) Reproductive toxicity - Article 57(c)	Pigments for paints, coatings, plastic colorants, printing
3-1-29	Coal tar pitch (high temperature)	65996-93-2	Persistent, bioaccumulative, toxic (PBT) - Article 57(d) Carcinogenicity - Article 57(a)	Electrodes, carbon products molding pigments, other graphite products, paints and coatings
3-1-30	Potassium chromate	7789-00-6	Carcinogenicity - Article 57(a) Reproductive toxicity - Article 57(c)	Treatment and coating of metals, tanning and care of leather, electrodes, ink production
3-1-31	Potassium dichromate	7778-50-9	Carcinogenicity - Article 57(a)	Chromium metal manufacturing, metal processing and coating, photolithography
3-1-32	Sodium chromate	7775-11-3	Carcinogenicity - Article 57(a)	Production of other chromium compounds
3-1-33	Disodium dichromate	7789-12-0	Carcinogenicity - Article 57(a)	Production of chromic acid compounds (chromium sulfate), production of inorganic chromic acid pigments
	Disodium dichromate	10558-01-9	Carcinogenicity - Article 57(a)	Production of chromic acid compounds (chromium sulfate), production of inorganic chromic acid pigments
3-1-34	Trichloroethylene	79-01-6	Carcinogenicity - Article 57(a)	Cleaning or degreasing agent
3-1-35	Triethyl arsenate	15606-95-8	Carcinogenicity - Article 57(a)	Pesticide, wood rod, semiconductor.
3-1-36	Tris(2-chloroethyl) phosphate (TCEP)	115-96-8	Reproductive toxicity - Article 57(c)	Fire retardant, plasticizer, adhesive

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No	Chemical substances	CAS No.	Reason	Usage Example
3-1-37	Cobalt(II) sulfate	10124-43-3	Carcinogenicity - Article 57(a)	Manufacturing of chemicals, catalysts and drying materials, surface treatment (e.g. electroplating), corrosion protection, production of pigments, bleaching (glass, ceramics), batteries, animal nutrition supplements, chemical fertilizers
3-1-38	Cobalt(II) nitrate	10141-05-6	Carcinogenicity - Article 57(a) Reproductive toxicity - Article 57(c)	Manufacture of chemicals and catalysts, surface treatment, batteries
3-1-39	Cobalt carbonate (II)	513-79-1	Carcinogenicity - Article 57(a) Reproductive toxicity - Article 57(c)	Manufacture of catalysts, manufacture of chemicals, manufacture of pigments, adhesives (ground coat frit)
3-1-40	Cobalt acetate (II)	71-48-7	Carcinogenicity - Article 57(a) Reproductive toxicity - Article 57(c)	Catalyst manufacturing, chemical manufacturing, surface treatment, alloys, pigments, paints, dyes, rubber adhesives, feed additives
3-1-41	2-Methoxyethanol Methyl cellosolve	109-86-4	Reproductive toxicity - Article 57(c)	Solvents, intermediate chemicals, fuel additives
3-1-42	2-Ethoxyethanol Cellosolve	110-80-5	Reproductive toxicity - Article 57(c)	Solvents, intermediate chemicals
3-1-43	Chromium trioxide Chromic anhydride (VI)	1333-82-0	Carcinogenicity - Article 57(a) Mutagenicity - Article 57(b)	Metal finishing, waterborne wood preservative fixative
3-1-44	Acid produced from chromium trioxide and its oligomers (Chromic acid) (Dichromic acid, Dichromic acid) (Oligomers of chromic acid and dichromic acid)	7738-94-5	Carcinogenicity - Article 57(a)	Dissolution of chromium trioxide
3-1-44	Acid produced from chromium trioxide and its oligomers (Chromic acid) (Dichromic acid, Dichromic acid) (Oligomers of chromic acid and dichromic acid)	13530-68-2	Carcinogenicity - Article 57(a)	Dissolution of chromium trioxide
3-1-45	2-ethoxyethyl acetate (cellosolve acetate)	111-15-9	Carcinogenicity - Article 57(a)	Solvents for paints, printing inks and electronic materials (for resist inks), coating solvents, intermediates for instant adhesives
3-1-46	Strontium chromate	7789-06-2	Carcinogenicity - Article 57(a)	Anti-corrosive pigments
3-1-47	Di-C7-11-branched and linear alkyl esters (DHNUP: including 1,2-benzenecarboxylic acid)	68515-42-4	Carcinogenicity - Article 57(a)	Plasticizers (PVC, bubble rubber, adhesives, coatings)
3-1-48	Hydralazine - hydrate	7803-57-8	Carcinogenicity - Article 57(a)	Raw materials for foaming agents, detergents, water treatment agents, synthetic raw materials for industrial chemicals, synthetic raw materials for agricultural chemicals, synthetic raw materials for pharmaceuticals, etc.
	Hydrazine	302-01-2	Carcinogenicity - Article 57(a)	
3-1-49	1-Methyl-2-pyrrolidone (NMP)	872-50-4	Carcinogenicity - Article 57(a)	Resin solvents, acetylene solvents, solvents for MOS semiconductor manufacturing, base materials for cosmetics
3-1-50	1,2,3-Trichloropropane	96-18-4	Carcinogenicity - Article 57(a)	Cleaning agents, plasticizer raw materials
3-1-51	1,2-Benzenedicarboxylic acid, 6 to 8-carbon side-chain alkyl esters consisting mainly of 7-carbon side-chain hydrocarbons 1,2-Benzenedicarboxylic acid with 6 to 8 carbon atoms	71888-89-6	Carcinogenicity - Article 57(a)	Plasticizers (PVC, sealants, coatings, inks))

Rank 3：

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No	Chemical substances	CAS No.	Reason	Usage Example
3-1-52	4-(1,1,3,3-tetramethylbutyl)phenol (4-tert-octylphenol)	140-66-9	Endocrine disrupting, PBT or vPvB - Article 57(f)	Manufacturing of polymer formulations and ethoxylates
3-1-53	2-methoxyaniline	90-04-0	Carcinogenicity - Article 57(a)	Manufacture of dyes for colored papers, polymers and aluminum foils
3-1-54	Arsenic acid	7778-39-4	Carcinogenicity - Article 57(a)	For the removal of air bubbles from ceramic glass melts and the manufacturing of laminated printed circuit boards
3-1-55	Calcium arsenate	7778-44-1	Carcinogenicity - Article 57(a)	Metal refining process for the condensation of nickel from molten copper
3-1-56	Lead arsenate	3687-31-8	Carcinogenicity - Article 57(a) Reproductive toxicity - Article 57(c)	Manufacturing of copper, lead, and many precious metals
3-1-57	1,2-Dichloroethane	107-06-2	Carcinogenicity - Article 57(a)	Raw materials for synthesis, solvents, etc.
3-1-58	Bis(2-methoxyethyl) ether	111-96-6	Reproductive toxicity - Article 57(c)	Used as a reaction solvent or for chemical processing in a wide range of applications, and as an electrolyte in batteries
3-1-59	Bis(2-methoxyethyl) phthalate	117-82-8	Reproductive toxicity - Article 57(c)	Plasticizers for paints, lacquers and varnishes (including printing inks)
3-1-60	N,N-dimethylacetamide	127-19-5	Reproductive toxicity - Article 57(c)	Used as a solvent and for industrial coatings, polyimide thin films, paint removers and ink removers
3-1-61	Aniline-formaldehyde polycondensation product	25214-70-4	Carcinogenicity - Article 57(a)	Raw materials for synthesis, e.g. curing agents for epoxy resins
3-1-62	Lead azide	13424-46-9	Reproductive toxicity - Article 57(c)	Detonators and pyrotechnic devices
3-1-63	Lead trinitro-resorcinol	15245-44-0	Reproductive toxicity - Article 57(c)	Ammunition, fireworks and detonators
3-1-64	2,2 '-Dichloro-4,4 '-methylenedianiline	101-14-4	Carcinogenicity - Article 57(a)	Used as a curing agent for resins (such as urethane) and in the production of polymer products
3-1-65	Chromium(III) (chromic acid)	24613-89-6	Carcinogenicity - Article 57(a)	Mixtures for metal surface treatment in the aerospace, steel and aluminum coating sectors
3-1-66	Potassium hydroxyoctaoxodizinc acid dichromate	11103-86-9	Carcinogenicity - Article 57(a)	Manufacturing of aerospace, steel and aluminum coils and automotive coatings, paint films and sealants
3-1-67	Pentazinc chromate octahydroxide	49663-84-5	Carcinogenicity - Article 57(a)	Manufacturing of automotive coatings, paint films, paints and thinners
3-1-68	Phenolphthalein	77-09-8	Carcinogenicity - Article 57(a)	Used as a laboratory agent (in pH indicator solutions) for the production of pH test papers and as a medical indicator
3-1-69	Aluminosilicate Refractory Ceramic Fibres	(See CLP Regulation (EC) No 1272/ 2008ANNEX IV Table 3.1 650-017-00-8)	Carcinogenicity - Article 57(a)	High temperature insulation materials for industrial applications and fire protection
3-1-70	Zirconia Aluminosilicate Refractory Ceramic Fibres	(See CLP Regulation (EC) No 1272/ 2008ANNEX IV Table 3.1 650-017-00-8)	Carcinogenicity - Article 57(a)	High temperature insulation materials for industrial use and fire protection
3-1-71	Lead nipicrate	6477-64-1	Reproductive toxicity - Article 57(c)	Detonators
3-1-72	1,2 - Bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	Reproductive toxicity - Article 57(c)	Processing aids in the manufacture and formulation of solvents and industrial chemicals. Miner, used in brake fluid and motor vehicle repair

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No	Chemical substances	CAS No.	Reason	Usage Example
3-1-73	1,2 -dimethoxyethane, ethylene glycol dimethyl ether (EGDME)	110-71-4	Reproductive toxicity - Article 57(c)	Solvent, used as a processing aid in the manufacture and formulation of industrial chemicals, including use as a solvent electrolyte in lithium batteries
3-1-74	Boron oxide	1303-86-2	Reproductive toxicity - Article 57(c)	Fungicides and insecticides used in numerous applications in glass and glass fiber, frit, ceramics, fire retardant, catalysts, industrial fluids, metallurgy, nuclear power, electrical equipment, adhesives, inks/paints, film developers, detergents, cleaners, reagent chemicals, etc.
3-1-75	Formamide	75-12-7	Reproductive toxicity - Article 57(c)	Used as intermediates in the manufacture of pesticides, pharmaceuticals and industrial chemicals. Used as laboratory reagents and solvents for quality control purposes in forensic laboratories, hospitals, pharmaceutical companies, food and beverage manufacturers and research institutions. Used as plasticizer.
3-1-76	Lead(II) methane sulfonate	17570-76-2	Reproductive toxicity - Article 57(c)	Mainly used in plating processes (both electrolytic and electroless) for electronic components (e.g., printed circuit boards). Used in batteries for special applications.
3-1-77	1,3,5-Tris(oxiranylmethyl)-1,3,5 -triazine-2,4,6(1H,3H,5H)-trione (TGIC)	2451-62-9	Mutagenicity - Article 57(b)	Curing agents for resins and paints. Printed circuit board industry, electrical insulation materials, resin molding systems, laminated sheets, silkscreen printing paints, tools, adhesives, lining materials and plastic stabilizers.
3-1-78	1,3,5-Tris[(2S and 2R)-2,3 -epoxypropyl]-1,3,5 -triazine-2,4,6 -(1H,3H,5H)-trione (β -TGIC)	59653-74-6	Mutagenicity - Article 57(b)	Used as solder mask ink in the EU. Used in plastic molding systems, laminated sheets, silk screen printing, paints, tools, adhesives, lining materials and stabilizers for plastics, and electrical insulating materials.
3-1-79	4,4' -Bis(dimethylamino)benzophenone	90-94-8	Carcinogenicity - Article 57(a)	Used as an intermediate in the manufacture of triphenylmethane dyes and other substances. Potential uses include use as a dye and pigment additive (photosensitiser) in dry film products and as a process chemical in the manufacture of electronic circuit boards.
3-1-80	N,N,N',N'-Tetramethyl-4,4'-methylenedia niline (Michler's base)	101-61-1	Carcinogenicity - Article 57(a)	Used as intermediates in the manufacture of dyes and other substances
3-1-81	C.I. Basic Blue 26	2580-56-5	Carcinogenicity - Article 57(a)	Used in the formulation of inks, cleaners and coatings, as well as in dyeing, diagnostic and analytical applications for paper, packaging, textiles, plastic products and fabrics
3-1-82	C.I. Basic Violet 3	548-62-9	Carcinogenicity - Article 57(a)	Used for paper coloration and as supply ink for printer cartridges and ballpoint pens. Staining of dry plants, staining in microbiological and clinical laboratories, used as a marker to enhance the visibility of liquids
3-1-83	4,4'-Bis(dimethylamino)-4''-(methylamin o)trityl alcohol	561-41-1	Carcinogenicity - Article 57(a)	Used in writing formulations for staining various materials, as well as other inks
3-1-84	C.I. Solvent Blue 4	6786-83-0	Carcinogenicity - Article 57(a)	Used in mixtures as a windshield washer, for dyeing paper, printing inks and writing formulations
3-1-85	Decabromodiphenyl ether (decaBDE)	1163-19-5	Persistent, bioaccumulative (vPvB) - Article 57(e)	Fire retardant for polystyrene, ABS resin, polyester, adhesive, sealant, textile coating

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No	Chemical substances	CAS No.	Reason	Usage Example
3-1-86	Pentacosafluorotridecanoic acid, Perfluorotridecanoic acid, Perfluorotridecanoic acid	72629-94-8	Persistent, bioaccumulative (vPvB) - Article 57(e)	Surfactant
3-1-87	Tricosafluorododecanoic acid, Perfluorododecanoic acid, Perfluorododecanoic acid	307-55-1	Persistent, bioaccumulative (vPvB) - Article 57(e)	Surfactant
3-1-88	Henicosafluoroundecanoic acid, Perfluoroundecanoic acid, Perfluoroundecanoic acid	2058-94-8	Persistent, bioaccumulative (vPvB) - Article 57(e)	Surfactant
3-1-89	Heptacosafluorotetradecanoic acid, Perfluorotetradecanoic acid, Perfluorotetradecanoic acid	376-06-7	Persistent, bioaccumulative (vPvB) - Article 57(e)	Surfactant
3-1-90	Azodicarbonamide, Azobisformamide, Diazene-1,2-biscarboamide	123-77-3	Endocrine disrupting, PBT or vPvB - Article 57(f)	Foaming agent for rubber and synthetic resins
3-1-91	[1] Cyclohexane-1,2-dicarboxylic anhydride [2] Cis-cyclohexane-1,2-dicarboxylic anhydride [3]Trans-cyclohexane-1,2-dicarboxylic anhydride [Individual isomers of the cis [2] and trans [3] forms and all possible combinations of cis and trans isomers [1]. All of the isomers are covered by this entry].	85-42-7 13149-00-3 14166-21-3	Endocrine disrupting, PBT or vPvB - Article 57(f)	Pharmaceuticals, agrochemicals, anthelmintics, raw materials for alkyd resins, plasticizers, rust inhibitors, resin modifiers, alkyd resins
3-1-92	[1] Methylhexahydrophthalic anhydride [2] Hexahydro-4-methylphthalic anhydride [3]Hexahydro-1-methylphthalic anhydride [4] Hexahydro-3-methylphthalic anhydride [[2], individual isomers of [3] and [4] (including their cis and trans stereoisomers) and all possible combinations of isomers [1]. All of the isomers are covered by this entry].	25550-51-0 19438-60-9 48122-14-1	Endocrine disrupting, PBT or vPvB - Article 57(f)	Epoxy resin curing agents, polyester coating materials
3-1-93	4-Nonylphenol, branched and linear 4-Nonylphenol, branched and linear [substances with a covalently bonded 9-carbon linear and/or branched alkyl chain at position 4 of phenol, including both individual isomers or mixtures of isomers, and well-defined substances (substances of known composition, etc.)	7311-27-5 68412-54-4 26027-38-3 9016-45-9 9016-45-9 68412-54-4 14409-72-4 20427-84-3 27942-27-4 104-35-8 156609-10-8 20636-48-0 127087-87-0 1119449-38-5 1119449-37-4 127087-87-0 9016-45-9 37205-87-1 34166-38-6 27177-05-5 26571-11-9 26264-02-8	Endocrine disrupting, PBT or vPvB - Article 57(f)	Surfactant, resin, modifier raw materials, adhesives, paints, inks, rubber additives
3-1-94	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylate		Endocrine disrupting, PBT or vPvB - Article 57(f)	Emulsifiers, Intermediates

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No	Chemical substances	CAS No.	Reason	Usage Example
	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylate [well-defined substances (substances of known composition, etc.) and UVCB substances, polymers and their homologues			
3-1-95	Methoxyacetic acid	625-45-6	Reproductive toxicity - Article 57(c)	Organic synthetic intermediates
3-1-96	N,N-dimethylformamide	68-12-2	Reproductive toxicity - Article 57(c)	Solvents (for urethane synthetic leather, dye intermediates, agricultural chemicals, pharmaceutical synthesis, various polymers, special inks, textile printing), catalysts, gas absorbers
3-1-97	Dibutyltin dichloride, dichlorodibutyltin (DBTC)	683-18-1	Reproductive toxicity - Article 57(c)	Vinyl chloride stabilizer intermediates, catalysts, rubber additives
3-1-98	Lead monoxide (Lead(II) oxide)	1317-36-8	Reproductive toxicity - Article 57(c)	Inorganic pigments, paints, raw materials for PVC stabilizers, solid lubricants, vulcanization promoters for synthetic rubber, raw materials for glass, batteries, raw materials for varnishes for glass and ceramics, radiation shielding agents
3-1-99	Orange red (lead tetroxide)	1314-41-6	Reproductive toxicity - Article 57(c)	Electronic materials, paints, glass materials, batteries
3-1-100	Lead bismetrafluoroborate, lead borofluoride	13814-96-5	Reproductive toxicity - Article 57(c)	Tin plating chemicals, solder plating chemicals
3-1-101	Lead bis(carbonate)trihydroxide, basic lead carbonate, lead carbonate hydroxide, lead subcarbonate	1319-46-6	Reproductive toxicity - Article 57(c)	Pigments for ceramics, paints, etc., raw materials for electronic materials
3-1-102	Lead titanium trioxide, lead titanate	12060-00-3	Reproductive toxicity - Article 57(c)	Raw materials for semiconductors
3-1-103	Lead zirconium titanate, lead zirconate titanate	12626-81-2	Reproductive toxicity - Article 57(c)	Raw materials for semiconductors
3-1-104	Lead silicate, basic lead silicate	11120-22-2	Reproductive toxicity - Article 57(c)	Pigment, paint desiccant, crystal work, glass raw materials
3-1-105	Barium silicate (Limited conditions: 1:1 composition ratio, doped with lead, with lead concentration above the threshold concentration for reproductive threshold concentration for reproductive toxicity)	68784-75-8	Reproductive toxicity - Article 57(c)	Bulb lamp coating
3-1-106	1-Bromopropane (n-propyl bromide)	106-94-5	Reproductive toxicity - Article 57(c)	Raw materials for pharmaceuticals and agrochemicals, intermediates, cleaning and degreasing
3-1-107	Methyloxirane (propylene oxide)	75-56-9	Reproductive toxicity - Article 57(c)	Polyester Resin, Urethane Resin Raw Materials, Surfactant, Solvent Raw Materials, Pigment, Pharmaceutical Intermediates Raw Materials
3-1-108	Dipentyl phthalate, branched and linear	84777-06-0	Reproductive toxicity - Article 57(c)	Plasticizer
3-1-109	Diisopentyl phthalate (DIPP)	605-50-5	Reproductive toxicity - Article 57(c)	Plasticizer
3-1-110	n-pentyl-isopentyl phthalate	776297-69-9	Reproductive toxicity - Article 57(c)	Plasticizer
3-1-111	1,2-Diethoxyethane, diethyl glycol, diethyl cellosolve	629-14-1	Reproductive toxicity - Article 57(c)	Solvents for nitrocellulose, rubber, resin, etc., organic synthetic reaction solvents
3-1-112	Basic lead acetate	51404-69-4	Reproductive toxicity - Article 57(c)	Paints, coatings, fillers, intermediates
3-1-113	Lead oxy sulphate	12036-76-9	Reproductive toxicity - Article 57(c)	PVC additives

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No	Chemical substances	CAS No.	Reason	Usage Example
3-1-114	Lead dioxide trilead phthalate	69011-06-9	Reproductive toxicity - Article 57(c)	PVC additives
3-1-115	Lead dioxobis(stearate)trilead, lead dioxobis(stearate)trilead	12578-12-0	Reproductive toxicity - Article 57(c)	PVC additives
3-1-116	Lead fatty acid salts (16-18 carbon atoms)	91031-62-8	Reproductive toxicity - Article 57(c)	PVC additives
3-1-117	Lead cyanamide	20837-86-9	Reproductive toxicity - Article 57(c)	Anti-corrosive pigments
3-1-118	Lead dinitrate, lead(II) nitrate	10099-74-8	Reproductive toxicity - Article 57(c)	Raw materials for lead compounds, raw materials for matches, explosives, optical glasses, reagents, pigments
3-1-119	Tetrabasic lead sulfate	12065-90-6	Reproductive toxicity - Article 57(c)	PVC additives, Batteries
3-1-120	Pyrochlore, C.I. Pigment Yellow 41	8012-00-8	Reproductive toxicity - Article 57(c)	Coatings, paints, ceramics
3-1-121	Basic lead sulfite	62229-08-7	Reproductive toxicity - Article 57(c)	PVC additives, resins
3-1-122	Tetraethyl lead, Tetraethyl lead	78-00-2	Reproductive toxicity - Article 57(c)	Anti-knock agents (gasoline octane improvers), fuel additives
3-1-123	Tribasic lead sulfate	12202-17-4	Reproductive toxicity - Article 57(c)	PVC additives, batteries
3-1-124	Dibasic lead phosphate, dibasic lead phosphate	12141-20-7	Reproductive toxicity - Article 57(c)	PVC additives
3-1-125	Furan	110-00-9	Carcinogenicity - Article 57(a)	Raw materials for synthetic resins, raw materials for organic synthesis, solvents, detergents
3-1-126	Diethyl sulfate	64-67-5	"Carcinogenicity - Article 57(a) Mutagenicity - Article 57(b)"	Ethylating agents, relaxant dehydrating agents, intermediates
3-1-127	Dimethyl sulfate	77-78-1	Carcinogenicity - Article 57(a)	Methylating agents for organic synthesis, pharmaceuticals (raw materials), intermediates
3-1-128	3-ethyl-2-isopentyl-2-methyl-1,3-oxazolidine	143860-04-2	Reproductive toxicity - Article 57(c)	—
3-1-129	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	Reproductive toxicity - Article 57(c)	Agrochemical intermediates (expired agrochemicals)
3-1-130	4,4'-methylenedi-o-toluidine, 4,4'-diamino-3,3'-dimethyldiphenylmethane	838-88-0	Carcinogenicity - Article 57(a)	Curing Agents for Epoxy and Urethane Resins, Synthetic Resin Intermediates
3-1-131	4,4'-oxydianiline and its salts	101-80-4	Reproductive toxicity - Article 57(c) Mutagenicity - Article 57(b)	Organic synthetic intermediates, raw materials for polyimide resin
3-1-132	4-aminoazobenzene	60-09-3	Reproductive toxicity - Article 57(c)	Dyes, pigments, intermediates
3-1-133	4-Methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	Carcinogenicity - Article 57(a)	Raw materials for polyurethane resins, synthetic intermediates for dyes and pigments
3-1-134	6-methoxy-m-toluidine (p-cresidine)	120-71-8	Carcinogenicity - Article 57(a)	Dye raw materials, intermediates
3-1-135	Biphenyl-4-ylamine	92-67-1	Carcinogenicity - Article 57(a)	—
3-1-136	o-aminoazotoluene (4-o-tolyl azo-o-toluidine)	97-56-3	Carcinogenicity - Article 57(a)	Dyestuffs
3-1-137	o-Toluidine	95-53-4	Carcinogenicity - Article 57(a)	Raw materials for intermediates of dyes and pigments, raw materials for epoxy resin curing agents
3-1-138	N-methylacetamide, methylacetylamine	79-16-3	Reproductive toxicity - Article 57(c)	Azo and sulfide dye intermediates
3-1-139	Cadmium	7440-43-9	Carcinogenicity - Article 57(a)	Pharmaceutical intermediates
3-1-140	Cadmium oxide	1306-19-0	Carcinogenicity - Article 57(a)	Pigments, batteries, alloys (nuclear reactor control materials, bearings, etc.), plating,

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No	Chemical substances	CAS No.	Reason	Usage Example
				phosphors, electronics industry
3-1-141	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	Reproductive toxicity - Article 57(c)	Cadmium plating bath additives, pigments, catalysts, alkaline batteries
3-1-142	Perfluorooctanoic acid (PFOA)	335-67-1	Reproductive toxicity - Article 57(c)	For semiconductors, fire extinguishing agents, water repellents, paper surface treatment agents, resin modifiers
3-1-143	Dipentyl phthalate (DPP)	131-18-0	Reproductive toxicity - Article 57(c)	Plasticizer
3-1-144	4-Nonylphenol, branched and linear ethoxylates	104-40-5 30784-30-6 26543-97-5 17404-66-9 52427-13-1 186825-36-5 142731-63-3 84852-15-3 11066-49-2 186825-39-8 25154-52-3 90481-04-2 521947-27-3	Endocrine disrupting, PBT or vPvB - Article 57(f)	Raw materials for soaps, detergents and surfactants, textile processing agents, agricultural chemical extenders, quasi-drug additives (emulsifiers for cosmetics)
3-1-145	Cadmium sulfide	1306-23-6	Carcinogenicity - Article 57(a)	Pigments (high-grade paints, synthetic resins, glass)
3-1-146	Dihexyl phthalate (DnHP)	84-75-3	Reproductive toxicity - Article 57(c)	Plasticizer
3-1-147	3.3'-[(1,1'-Biphenyl)-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulfonate) disodium (C.I. Direct Red 28)	573-58-0	Carcinogenicity - Article 57(a)	Direct dyes, biological dyes
3-1-148	Disodium 4-amino-3-[4'-(2,4-diaminophenyl azo)-1,1'-biphenyl-4-yl azo]-5-hydroxy-6-phenyl azo-2,7-naphthalene disulfonate (C.I. Direct Black 38)	1937-37-7	Carcinogenicity - Article 57(a)	Dyes
3-1-149	Ethylene thiourea (2-imidazolidinedione)	96-45-7	Reproductive toxicity - Article 57(c)	Imidazoline vulcanization accelerators (chloroprene rubber, epichlorohydrin rubber, chlorinated polyethylene), organic rubber chemicals (vulcanization accelerators)
3-1-150	Lead(II) acetate	301-04-2	Reproductive toxicity - Article 57(c)	Raw materials for lead compounds, waterproofing agents, analytical reagents, pharmaceuticals (astringents)
3-1-151	Tris(dimethylphenyl) phosphate	25155-23-1	Reproductive toxicity - Article 57(c)	Plasticizer, raw material for flame retardant hydraulic oil
3-1-152	Cadmium chloride	10108-64-2	CMR - Article 57(a), (b), (c)	Plating, catalyst
3-1-153	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	CMR - Article 57(a), (b), (c)	Plasticizer
3-1-154	Sodium peroxoborate; sodium perborate	7632-04-4	CMR - Article 57(a), (b), (c)	Oxidizing bleach, cleaning and disinfecting agents, preservatives, dyeing aids
3-1-155	Sodium perborate; perboric acid, sodium salt	15120-21-5 11138-47-9	CMR - Article 57(a), (b), (c)	Oxidizing bleach, cleaning and disinfecting agents, preservatives, dyeing aids
3-1-156	Cadmium fluoride	7790-79-6	CMR - Article 57(a), (b), (c)	Glass, solar cells, alloys, etc.
3-1-157	Cadmium(II) sulfate	10124-36-4	CMR - Article 57(a), (b), (c)	Raw materials for inorganic cadmium compounds, metal surface treatment materials
3-1-157	Cadmium(II) sulfate	31119-53-6	CMR - Article 57(a), (b), (c)	Raw materials for inorganic cadmium compounds, metal surface treatment materials

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No	Chemical substances	CAS No.	Reason	Usage Example
3-1-158	2-Benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	"Persistent, bioaccumulative, toxic (PBT) - Article 57(d) Persistent, bioaccumulative (vPvB) - Article 57(e)"	UV stabilizers, UV protectants
3-1-159	2-(2H-Benzotriazol-2-yl)-4,6-di-tert-pentylphenol (UV-328)	25973-55-1	"Persistent, bioaccumulative, toxic (PBT) - Article 57(d) Persistent, bioaccumulative (vPvB) - Article 57(e)"	UV stabilizers, UV protectants, light stabilizers in coatings
3-1-160	10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoic acid 2-ethylhexyl (DOTE)	15571-58-1	Reproductive toxicity - Article 57(c)	Heat Stabilizer for PVC
3-1-161	Reaction product of 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoic acid 2-ethylhexyl and 10-ethyl-4-[[2-[(ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoic acid 2-ethylhexyl (reaction product of DOTE and MOTE)		Reproductive toxicity - Article 57(c)	Heat stabilizer for PVC, Biocide in antifouling paints
3-1-162	1,2-Benzenedicarboxylic acid, di-C6-10-alkyl ester; mixture of 1,2-benzenedicarboxylic acid, decyl-hexyl-octyl diester and more than 0.3% dihexyl phthalate (EC No. 201-559-5)	68515-51-5 68648-93-1	Reproductive toxicity - Article 57(c)	Lubricants, Adhesives, Coating materials
3-1-163	5-sec-butyl-2-(2,4-dimethylcyclohexa-3-en-1-yl)-5-methyl-1,3-dioxane[1], 5-sec-butyl-2-(4,6-dimethylcyclohexa-3-en-1-yl)-5-methyl-1,3-dioxane[2] (including individual isomers of [1] and [2], or combinations thereof)		Persistent, bioaccumulative (vPvB) - Article 57(e)	Flavoring ingredients
3-1-164	Nitrobenzene	98-95-3	Reproductive toxicity - Article 57(c)	Manufacture of other substances
3-1-165	2,4-Di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1	Persistent, bioaccumulative (vPvB) - Article 57(e)	UV protectants (paints, plastics, rubber, cosmetics)
3-1-166	2-(2H-Benzotriazol-2-yl)-6-sec-butyl-4-tert-butylphenol (UV-350)	36437-37-3	Persistent, bioaccumulative (vPvB) - Article 57(e)	UV (ultraviolet) light protectant (paints, plastics, rubber, cosmetics)
3-1-167	1,3-propanesultone	1120-71-4	Carcinogenicity - Article 57(a)	Electrolyte solution for lithium batteries
3-1-168	Perfluorononanoic acid and its sodium and ammonium salts	-	Reproductive toxicity - Article 57(c) PBT (- Article 57(d))	Processing aids: fluoropolymer manufacturing, lubricant additives, Surfactant for fire extinguishers, detergents, fabric stain inhibitors, polishing Surfactant, waterproof materials, liquid crystal display panels
3-1-168	Perfluorononanoic acid and its sodium and ammonium salts	375-95-1	Reproductive toxicity - Article 57(c) PBT (- Article 57(d))	Processing aids: fluoropolymer manufacturing, lubricant additives, Surfactant for fire extinguishers, detergents, fabric stain inhibitors, polishing Surfactant, waterproof materials, liquid crystal display panels
	Perfluorononanoic acid and its sodium and ammonium salts	21049-39-8	Reproductive toxicity - Article 57(c) PBT (- Article 57(d))	Processing aids: fluoropolymer manufacturing, lubricant additives, Surfactant for fire extinguishers, detergents, fabric stain inhibitors, polishing Surfactant, waterproof materials, liquid crystal display panels
	Perfluorononanoic acid and its sodium and ammonium salts	4149-60-4	Reproductive toxicity - Article 57(c)	Processing aids: fluoropolymer manufacturing, lubricant additives,

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No	Chemical substances	CAS No.	Reason	Usage Example
			PBT (- Article 57(d))	Surfactant for fire extinguishers, detergents, fabric stain inhibitors, polishing Surfactant, waterproof materials, liquid crystal display panels
3-1-169	Benzo(def)chrysene Benzo(a)pyrene Benzo(pqr)tetraphene	50-32-8	Carcinogenicity - Article 57(a) Mutagenicity - Article 57(b) Reproductive toxicity - Article 57(c) PBT (- Article 57(d)) vPvB (- Article 57e)	Byproducts of carbon black production, etc.
3-1-170	4,4'-isopropylidene diphenol (Bisphenol A, BPA)	80-05-7	Reproductive toxicity - Article 57(c) Endocrine disrupting, PBT or vPvB - Article 57(f)	Polycarbonate, epoxy resin manufacturing, epoxy resin hardener manufacturing
3-1-171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	-	Reproductive toxicity - Article 57(c) Persistent, bioaccumulative, toxic (PBT) - Article 57(d)	Lubricant, Wetting agent, Plasticizer, Antiseptic
	Nonadecafluorodecanoic acid	335-76-2	Reproductive toxicity - Article 57(c) Persistent, bioaccumulative, toxic (PBT) - Article 57(d)	Lubricant, Wetting agent, Plasticizer, Antiseptic
	Sodium salts of decanoic acid and nonadecafluorodecanoic acid	3830-45-3	Reproductive toxicity - Article 57(c) Persistent, bioaccumulative, toxic (PBT) - Article 57(d)	Lubricant, Wetting agent, Plasticizer, Antiseptic
	Ammonium Nonadecafluorodecanoate	3108-42-7	Reproductive toxicity - Article 57(c) Persistent, bioaccumulative, toxic (PBT) - Article 57(d)	Lubricant, Wetting agent, Plasticizer, Antiseptic
3-1-172	4-tert-pentylphenol (PTAP)	80-46-6	Endocrine disrupting, PBT or vPvB - Article 57(f)	Manufacture of chemicals and plastics
	4-tert-pentylphenol (PTAP)	30784-30-6	Endocrine disrupting, PBT or vPvB - Article 57(f)	
3-1-173	4-heptylphenol, branched and linear (4-HPbl)	-	Endocrine disrupting, PBT or vPvB - Article 57(f)	Manufacture of polymers; lubricants
3-1-174	Perfluorobutane sulfonic acid and its salts	-	Persistent, bioaccumulative (vPvB) - Article 57(e)	Plasticizer and lubricant; Surfactant, wetting agent, preservative, digestive agent
3-1-175	1,3,4-Thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [0.1% w/w 4-heptylphenol, branched and linear]	-	Endocrine disrupting, PBT or vPvB - Article 57(f)	Used as additives in lubricants and greases
3-1-176	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo [12.2.1.1 6,9 .0 2,13 .0 5,10]octadeca7,15diene ("Dechlorane Plus" TM) [any of its individual anti- and syn-isomers Any of its individual anti- and syn-isomers, or any combination thereof].	13560-89-9 135821-03-3 135821-74-8	Persistent, bioaccumulative (vPvB) - Article 57(e)	Unplasticized fire retardants, used as adhesives and sealants, binding materials
3-1-177	Chrysene	218-01-9	"Carcinogenicity - Article 57(a) PBT (- Article 57(d)) vPvB (- Article 57e)"	Usually not intentionally produced, but occur as constituents or impurities in other substances
3-1-178	Cadmium nitrate	10325-94-7	"Carcinogenicity - Article 57(a) Mutagenicity - Article 57(b)"	Used in the manufacture of glass, porcelain and ceramic products and in research chemicals
3-1-179	Cadmium hydroxide	21041-95-2	"Carcinogenicity - Article 57(a) Mutagenicity - Article 57(b)"	Used in the manufacture of electrical, electronic, and optical equipment and in research chemicals

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No	Chemical substances	CAS No.	Reason	Usage Example
3-1-180	Cadmium carbonate	513-78-0	"Carcinogenicity - Article 57(a) Mutagenicity - Article 57(b)"	Used in pH adjusters, water treatment products, research chemicals, cosmetics, and personal care products
3-1-181	Benz[a]anthracene Benz[a]anthracene	56-55-3	"Carcinogenicity - Article 57(a) PBT (- Article 57(d)) vPvB (- Article 57e)"	Usually not intentionally produced, but occur as components or impurities in other substances
3-1-182	Octamethylcyclotetrasiloxane (D4)	556-67-2	"PBT (- Article 57(d)) vPvB (- Article 57e)"	Cleaning and cleaning products, abrasives, waxes, cosmetics and personal care products applications
3-1-183	Decamethylcyclopentasiloxane (D5)	541-02-6	"PBT (- Article 57(d)) vPvB (- Article 57e)"	Cleaning and cleaning products, abrasives, waxes, cosmetics and personal care products, textile treatment products and dyestuff applications
3-1-184	Dodecamethylcyclohexasiloxane (D6)	540-97-6	"PBT (- Article 57(d)) vPvB (- Article 57e)"	For cleaning and polishing products, waxes, cosmetics and personal care products.
3-1-185	Lead	7439-92-1	Reproductive toxicity (- Article 57c)	Metal, welding and soldering products, metal surface treatment products and polymer applications
3-1-186	Disodium octaborate	12008-41-2	Reproductive toxicity (- Article 57c)	Anti-freeze products, heat transfer fluids, lubricants and greases, washing and cleaning products
3-1-187	Benzo[ghi]perylene	191-24-2	"PBT (- Article 57(d)) vPvB (- Article 57e)"	No registration under REACH. Usually not intentionally produced, but occurs as a constituent or impurity of other substances.
3-1-188	Terphenyl hydride	61788-32-7	vPvB (- Article 57e)	Plastic additives, solvents, applications in paints/inks, applications in adhesives and sealants, heat transfer fluids
3-1-189	Ethylenediamine (EDA)	107-15-3	Endocrine disrupting, PBT or vPvB - Article 57(f)	Adhesives and sealants, coating products, filters, putty, plaster, clay, pH adjusters and water treatment product applications
3-1-190	Benzene-1,2,4-tricarboxylic acid-1,2-anhydride (trimellitic anhydride)	552-30-7	Endocrine disrupting, PBT or vPvB - Article 57(f)	Ester and polymer manufacturing applications
3-1-191	Dicyclohexyl phthalate	84-61-7	Endocrine disrupting, PBT or vPvB - Article 57(f)	Plastisol, PVC, rubber and plastic molded product applications. As a reactive desensitizer and dispersant in organic peroxide formulations.
3-1-192	4,4'-(4-methylpentane-2,2-diyl)diphenol	6807-17-6	Reproductive toxicity (- Article 57c)	
3-1-193	Benzo[k]fluoranthene	207-08-9	"Carcinogenic (- Article 57a)PBT (- Article 57(d)) vPvB (- Article 57e)"	
3-1-194	Fluoranthene	206-44-0	"PBT (- Article 57(d)) vPvB (- Article 57e)"	
3-1-195	Phenanthrene	85-01-8	vPvB (- Article 57e)	
3-1-196	Pyrene	129-00-0	"PBT (- Article 57(d)) vPvB (- Article 57e)"	Transportation intermediates for the manufacture of refined chemical products (fine chemicals)
3-1-197	1,7,7-Trimethyl-3-benzylidenebicyclo[2.2.1]heptan-2-one	15087-24-8	Endocrine disrupting, PBT or vPvB - Article 57(f)	
3-1-198	2-Methoxyethyl acetate	110-49-6	Reproductive toxicity (- Article 57c)	
3-1-199	Tris(linear, branched-chain 4-nonylphenyl) phosphite (TNPP) containing more than 0.1% by weight of branched and linear 4-nonylphenol		Endocrine disrupting, PBT or vPvB - Article 57(f)	Mainly used as an antioxidant to stabilize polymers
3-1-200	2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propionic acid and its salts and acid halides [including individual isomers and		Endocrine disrupting, PBT or vPvB - Article 57(f)	Processing aids in the production of fluorinated polymers.

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No	Chemical substances	CAS No.	Reason	Usage Example
	combinations thereof] (HFPO-DA)			
3-1-201	4-tert-butylphenol (PTBP)	98-54-4	Endocrine disrupting, PBT or vPvB - Article 57(f)	Applications for coated products, polymers, adhesives, sealants, and for the synthesis of other substances.
3-1-202	Diisohexyl phthalate	71850-09-4	Reproductive toxicity (- Article 57c)	
	Diisobutyl phthalate	84-69-5	Reproductive toxicity (- Article 57c)	
	Diisobutyl phthalate	605-50-5	Reproductive toxicity (- Article 57c)	
3-1-203	2-Benzyl-2-(N,N-dimethylamino)-1-(4-morpholinophenyl)butan-1-one	119313-12-1	Reproductive toxicity (- Article 57c)	Used for polymer production
3-1-204	2-Methyl-1-[4-(methylthio)phenyl]-2-morpholino-1-propanone	71868-10-5	Reproductive toxicity (- Article 57c)	Used in polymer production
3-1-205	Perfluorobutane sulfonic acid (PFBS) and its salts		Endocrine disrupting, PBT or vPvB - Article 57(f)	Fire retardant in polycarbonate (for electrical and electronic equipment), catalyst, additive and reactant in polymer production and chemical synthesis.
3-1-206	1-Vinylimidazole	1072-63-5	Reproductive toxicity - Article 57(c)	
3-1-207	2-Methylimidazole	693-98-1	Reproductive toxicity - Article 57(c)	
3-1-208	Butyl 4-hydroxybenzoate	94-26-8	Endocrine disrupting, PBT or vPvB - Article 57(f)	
3-1-209	Dibutyl bis(2,4-pentanedionato)tin(IV)	22673-19-4	Reproductive toxicity - Article 57(c)	
3-1-210	Bis(2-(2-methoxyethoxy)ethyl)ether	143-24-8	Reproductive toxicity - Article 57(c)	
3-1-211	Dioctyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivatives and other stannane, dioctyl-, bis(fatty acid acyloxy) derivatives (the main carbon number of the fatty acid acyloxy moiety therein is C12)		Reproductive toxicity - Article 57(c)	
3-1-212	2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers	80-54-6	Reproductive toxicity - Article 57(c)	
3-1-213	Orthoboric acid, sodium salt	13840-56-7	Reproductive toxicity - Article 57(c)	
3-1-214	2,2-bis(bromomethyl)propane1,3-diol (BMP);	3296-90-0	Carcinogenicity - Article 57(a)	
	2,2-Dimethylpropan-1-ol	36483-57-5	Carcinogenicity - Article 57(a)	
	2,2-bis(bromomethyl)-1-propanol (TBNPA)	1522-92-5	Carcinogenicity - Article 57(a)	
	2,3-dibromo-1-propanol (2,3-DBPA)	96-13-9	Carcinogenicity - Article 57(a)	
3-1-215	Glutaral	111-30-8	Endocrine disrupting, PBT or vPvB - Article 57(f)	

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No	Chemical substances	CAS No.	Reason	Usage Example
3-1-216	Medium-chain chlorinated paraffins (MCCP) [UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain lengths within the range from C14 to C17]	-	PBT (- Article 57(d)) vPvB (- Article 57e)	
3-1-217	Phenol, alkylation products (mainly in para position) with C12-rich branched or linear alkyl chains from oligomerisation, covering any individual isomers and/ or combinations thereof (PDDP)		Reproductive toxicity - Article 57(c) vPvB (- Article 57e)	
3-1-218	1,4-dioxane	123-91-1	Endocrine disrupting, PBT or vPvB - Article 57(f)	
3-1-219	4,4'-(1-methylpropylidene)bisphenol; (bisphenol B)	77-40-7	Endocrine disrupting, PBT or vPvB - Article 57(f)	
3-1-220	Contains any of the individual isomers of (±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one and/or combinations thereof (4-MBC)		Persistent, bioaccumulative (vPvB) Article 57(e)."	Cosmetics (anti-fading agent)
	(3E)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptanone-2-one	1782069-81-1	Endocrine disrupting, PBTor vPvB Article 57(f)	Cosmetics (anti-fading agent)
	(1R, 3E, 4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptanone-2-one	95342-41-9	Endocrine disrupting, PBTor vPvB Article 57(f)	Cosmetics (anti-fading agent)
	(1S, 3Z, 4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptanone-2-one	852541-25-4	Endocrine disrupting, PBTor vPvB Article 57(f)	Cosmetics (anti-fading agent)
	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptanone-2-one	36861-47-9	Endocrine disrupting, PBTor vPvB Article 57(f)	Cosmetics (anti-fading agent)
	(1R,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptanone-2-one	741687-98-9	Endocrine disrupting, PBTor vPvB Article 57(f)	Cosmetics (anti-fading agent)
	(1S, 3E, 4R)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptanone-2-one	852541-30-1	Endocrine disrupting, PBTor vPvB Article 57(f)	Cosmetics (anti-fading agent)
	(1R,3Z,4S)-1,7,7-trimethyl-3-(4-methylbenzylidene)bicyclo[2.2.1]heptanone-2-one	852541-21-0	Endocrine disrupting, PBTor vPvB Article 57(f)	Cosmetics (anti-fading agent)
3-1-221	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)	119-47-1	Endocrine disrupting, PBTor vPvB Article 57(f)	Rubber, lubricants, adhesives, inks, fuels (antioxidants, anti-aging agents)
3-1-222	S-(tricyclo[5.2.1.0'2,6]deca-3-en-8(or 9)-yl) O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate	255881-94-8	Endocrine disrupting, PBTor vPvB Article 57(f)	Lubricants, greases
3-1-223	Tris(2-methoxyethoxy)vinylsilane	1067-53-4	Endocrine disrupting, PBTor vPvB Article 57(f)	Rubber, plastics, encapsulants (silane coupling agents)
3-1-224	N-(hydroxymethyl)acrylamide	924-42-5	Reproductive toxicity ,Article 57 (c)	Textile leather modification and resin processing, synthetic resin coatings, adhesives, paper processing enhancers, soil conditioners
3-1-225	1,1'-[Ethane-1,2-diylbisoxy]bis[2,4,6-tribromobenzene]	37853-59-1	vPvB (Article 57e)	Flame Retardants for ABS
3-1-226	2,2',6,6'-tetrabromo-4,4'-isopropylidene diphenol	79-94-7	Carcinogenicity (Article 57a)	Flame retardants
3-1-227	4,4'-Sulfonyldiphenol	80-09-1	"Reproductive toxicity (Article 57c)	Dyeing aid 225-agent, flame retardant, raw material for photographic couplers
3-1-228	Barium metaborate	13701-59-2	Reproductive toxicity (Article 57c)	Anti-mold agent, anti-corrosion paint, flame retardant

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No	Chemical substances	CAS No.	Reason	Usage Example
3-1-229	Bis(2-ethylhexyl) tetrabromophthalate (covering any of the individual isomers and/or combinations thereof)	26040-51-7	e) vPvB (extremely persistent and highly bioaccumulative substance)	Added as plasticizers to polyvinyl chloride products (sheets, leather, wire coating materials, films for agricultural vinyl, etc.)
3-1-230	Isobutyl 4-hydroxybenzoate	4247-02-3	Endocrine disrupting properties (Article 57(f) - Human health)	Antifungal agents and preservatives for cosmetics, pharmaceuticals, foods, etc.
3-1-231	Melamine (monomer)	108-78-1	Equivalent level of concern that may seriously affect human health (Article 57(f) - Human health) Equivalent level of concern that may have a serious effect on the environment (Article 57 (f) - Environment)	Melamine resin (POM), adhesives, pharmaceutical raw materials
3-1-232	Perfluoroheptanoic acid and its salts Ammonium perfluoroheptanoate Potassium perfluoroheptanoate Perfluoroheptanoic acid Sodium perfluoroheptanoate	- 6130-43-4 21049-36-5 375-85-9 20109-59-5	Reproductive toxicity (Article 57c) PBT (Article 57d) vPvB (Article 57e) Equivalent level of concern with potentially serious effects on human health (Article 57(f) - Human health)	
3-1-233	Reaction products of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine		Reproductive toxicity (Article 57c)	
3-1-234	Bis(4-chlorophenyl)sulfone (BCPS)	80-07-9	Article 57e/vPvB	"Polyethersulfone (PESU)", "polysulfone (PSU)" and "polyphenylsulfone (PPSU)" of engineering plastics
3-1-235	Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (TPO)	75980-60-8	Reproductive toxicity (Article 57c)	"The mixture is a photo-initiator for graphic arts, wood coatings, plastic coatings, metal coatings and other adhesives."
3-1-236	2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol (UV-329)	3147-75-9	(Article 57e)	Benzotriazole UV absorber
3-1-237	2-(Dimethylamino)-2-[(4-methylphenyl)methyl]-1-[(4-morpholin-4-yl)phenyl]butan-1-one	119344-86-4	(Article 57c)	Photoinitiator
3-1-238	Bumetrizole (UV-326)	3896-11-5	(Article 57e)	Benzotriazole UV absorber
3-1-239	2,4,6-Tri-tert-butylphenol	732-26-3	(Article 57c,d,e)	Antioxidant (fuel, polymer additive) intermediate
3-1-240	Oligomerization and alkylation products of 2-phenylpropene and phenol	68512-30-1	(Article 57e)	"Hydrocarbon Resins (polymer additives)"
3-1-241	Bis(α ,α -dimethylbenzyl)peroxide	80-43-3	(Article 57c)	Polymerization initiator for styrene, cross-linking agent for various olefin polymers such as PE, EPR, and PDM, copolymers and synthetic rubbers, curing agent for heat molding of unsaturated polyester resin
3-1-242	Triphenyl phosphate	115-86-6	(Article 57f)	Plasticizer for cellulose acetate film, flame retardant plasticizer for phenolic resin laminates, flame retardant and plasticizer for engineering plastics; Additives for synthetic rubber
3-1-243	6-[(C10-C13)-alkyl-(branched, unsaturated)-2,5-dioxopyrrolidin-1-yl]hexanoic acid	2156592-54-8	(Article 57c)	Lubricants, greases, slow-release formulations and metalworking oils
3-1-244	Triphenyl thiophosphate	597-82-0	(Article 57 d)	Lubricants and greases
3-1-245	Octamethyltrisiloxane (L3)	107-51-7	(Article 57e)	Adhesives, lubricants, cosmetic

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No	Chemical substances	CAS No.	Reason	Usage Example
				formulations, raw materials for polymerized products
3-1-246	Perfluorotripropylamine	338-83-0	(Article 57e)	Widely used in the manufacture of electrical, electronic, optical equipment, machinery, vehicles, etc.
3-1-247	Reaction products of triphenyl thiophosphate and tert-butylated phenyl derivatives	192268-65-8	(Article 57 d)	Metalworking fluids, hydraulic fluids, lubricants, greases

2. Relevant legislation: 2011/65/EU(RoHS)・1907/2006/EC(REACH) Candidate substance

No	Chemical substances	CAS No.	Reason	Usage Example
3-2-1	Tetrabromobisphenol A (TBBP-A)	79-94-7	Acute toxicity, carcinogenicity, reproductive toxicity	Epoxy and polycarbonate resins, impact-resistant polystyrene and phenolic resins, adhesives
3-2-2	Medium Chain Chlorinated Paraffins (MCCP) C14-C17	—	Persistent, bioaccumulation	Plasticizers to increase flame retardancy of polyvinyl chloride (PVC) and rubber for cables, etc.

3. Relevant legislation: PFAS (Organic Fluorine Compounds) Candidate Substances for Regulation

No	Chemical substances	CAS No.	Reason	Usage Example
3-3-1	PFHxA (perfluorohexanoic acid) its salts and related substances	307-24-4 2923-26-4 21615-47-4	Persistent, bioaccumulative	Foam firefighting chemicals, metal plating, textiles, leather goods and interior decorations, abrasives and cleaners, coatings, impregnation/reinforcement materials, electronics and semiconductor manufacturing, etc.
3-3-2	Perfluoroalkyl and polyfluoroalkyl compounds (PFAS)	—	Persistent, bioaccumulative	-
3-3-3	Perfluorocarboxylic acids (C9-C21PFCAs) with carbon numbers from 9 to 21, their salts and related substances	—	Persistent, bioaccumulative	Water repellents, fire extinguishing agents, semiconductor etching treatment agents, etc.

Rank 4：

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Rank 4: Standards for substances that are prohibited from use in the manufacturing process of procured items (*1)

No.	Chemical substances	Primary legislation	Primary environmental effects	Primary applications
1	Ozone depleting substances (*2)	Ozone Layer Protection Law	Ozone depletion	Detergents and refrigerants
2	Organochlorine detergents (*3)	Soil Contamination Countermeasures Law	Soil contamination	Detergents

(*1) Except being used only in a hermetically sealed state (e.g. cooling medium in chillers).

(*2) The ozone-depleting substances prohibited from use in the manufacturing process are the specified substances listed in the middle column of the Table attached to Annex 1 of the Enforcement Order of the Law Concerning the Protection of the Ozone Layer Through the Control of Specified Substances and other Measures.

(*3) Organochlorine detergents prohibited for use in manufacturing processes are as follows; carbon tetrachloride, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-dichloroethylene, 1,3-dichloropropene, dichloromethane, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene,