

## 4-2 Information on specified substances

### 4-2-1 Major raw materials and materials used by each industry

Each industry mainly uses the following raw materials and materials. Refer to them for investigation.

Industrial code*	Name of industry	Major raw materials and agents used		
1200	Manufacture of food	Disinfectant	Antiseptic agent	Bactericide
		Solvent	Detergent	Desiccant
		Bleaching powder	Extractant	Perfume
		Fruit essence		
1300	Manufacture of beverages, tobacco and feed	Detergent	Solvent	
1320	Alcoholic beverages			
1350	Tabacco manufactures			
1400	Manufacture of textile mill products	Detergent	Solvent	Dyestuff
		Textile eradicator	Dehydrating agent	Textile treatment
		Desiccant	Deodorant	Emulsifier
		Scouring agent	Chelating agent	Penetrant
		Remover	Resin	Stock paste
1500	Manufacture of apparel and other finished products made from fabrics and similar materials	Dyestuff	Textile eradicator	
1600	Manufacture of lumber and wood products	Deodorant	Antiseptic agent	Disinfectant
		Adhesive	Paint	Solvent
1700	Manufacture of furniture and fixtures	Paint	Desiccant	Solvent
		Paint remover		
1800	Manufacture of pulp, paper and paper products	Solvent	Antiseptic agent	Dyestuff
		Detergent	Paints	Adhesive
		Paper strength fortifier	Fire retardant	Flocculant
		Chemicals for water treatment in boiler	Chemicals for cooling or waste water treatment	
1900	Publishing, printing and allied industries	Ink	Solvent	Adhesive
		Developer	Electrode for plating	Plating solution
		Photographic sensitive material		

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Industrial code*	Name of industry	Major raw materials and agents used		
2000 2025 2060 2092	<ul style="list-style-type: none"> <li>• Manufacture of chemical and allied products</li> <li>• Salts</li> <li>• Drugs and medicines</li> <li>• Pesticides</li> </ul>	Raw material of resin	Raw material of bactericide	Insecticide material
		Paint	Plasticizer	Adhesive
		Solvent	Catalyst	Resin modifier
		Pigment	Extractant	Emulsifier
		Dehydrating agent	Textile treatment	Insecticide material
		Metallic compound	Cosmetic compounding ingredient	Insecticide material
		Desiccant	Raw material of pharmaceutical	Anti-corrosive
		Raw material of agricultural chemical		
2100	Manufacture of petroleum and coal products	Lubricating oil	Anti-freeze	Fuel-switcher
		Coolant	Anti-corrosive agent	Emulsifier
		Solvent	Extractant	Antiknock
		Catalyst	Adsorbent	Adjuster
		Petroleum refining	Chemicals for water treatment in boiler	Chemicals for cooling or waste water treatment
2200	Manufacture of plastic products, except otherwise classified	Plasticizer	Detergent	Solvent
		Raw material of resin	Flame retarder	Pigment
		Colorant	Paint remover	Adhesive
		Plastic foaming agent	Raw material of reinforced plastic	
2300	Manufacture of rubber products	Solvent	Flame retarder	Adhesive
		Detergent	Paint	Pigment
		Colorant	Paint remover	Paint
		Rubber additive	Raw material of organic rubber chemical	
2400	Manufacture of leather tanning, leather products and fur skins	Detergent	Dyestuff	Solvent
		Leather processing agent		
2500	Manufacture of ceramic, stone and clay products	Fine particle polishing agent	Chemical toner of pottery	Raw material of sintered body
		Detergent	Remover	Glass additive
		Pigment	Colorant	Resin
		Solvents	Asbesto	Resin hardener
		Raw material of brick	Antifoaming agent	Flocculant
		Mold lubricant	Paints	Adhesive

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Industrial code*	Name of industry	Major raw materials and agents used		
2600	Manufacture of iron and steel	Detergent	Solvent	Ablator
		Welding material	Raw material of iron and steel	Electrode for plating
		Fuel	Plating solution	Paints
		Acid for cleaning	Raw material of casting	Adhesive
		Resin hardener	Chemicals for water treatment in boiler	
2700	Manufacture of non-ferrous metals and products	Detergent	Solvent	Flux
		Reducing agent	Raw material of alloy	Achromatic agent
		Solvent	Remover	Desiccant
		Fuel	Cutting oil	Paints
		Acid for cleaning	Conversion treatment agent	Electrode for plating
		Coating agent	Grease	Salt bath agent
		Pig lead	Plating solution	Operating oil
		Mold lubricant	Shot agent	Resin bond
		Raw material of casting	Oxidation inhibitor	Adhesive
		Chromating agent	Electrolytic painting agent	Galvanizing agent
2800	Manufacture of fabricated metal products	Detergent	Desiccant	Remover
		Solvent	Fine particle polishing agent	Surface coating
2900	Manufacture of general machinery	Detergent	Paint	Lubricating oil
		Surface coating	Anti-corrosive agent	Dehydrating agent
		Anti-freeze	Coolant	Brake fluid
		Solvent	Desiccant	Abrasive
		Paint remover		
3000 3060 3070	<ul style="list-style-type: none"> <li>• Manufacture of electrical machinery, equipment and supplies</li> <li>• Electronic equipment</li> <li>• Electronic measuring instruments</li> </ul>	Raw material of storage battery	Raw material of permanent magnet	Chemical vapour deposition
		Paint	Surface coating	Etching gas
		Anti-corrosive agent	Photosensitive body	Luminescent paint
		Detergent	Plating solution	Desiccant
		Adhesive	Solvent	Grinding oil
		Paint remover	Acid for cleaning	Dehydrating agent
Raw material of optical fiber	Raw material of solar battery	Epitaxial growth of silicone		

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Industrial code*	Name of industry	Major raw materials and agents used		
3100 3120 3140	<ul style="list-style-type: none"> <li>• Manufacture of transportation equipment</li> <li>• Railroad equipment and parts</li> <li>• Shipbuilding and repairing, and marine engines</li> </ul>	Anti-corrosive agent	Dehydrating agent	Lubricating oil
		Grinding oil	Detergent	Anti-freeze
		Brake fluid	Antiknock	Fuel-switcher
		Solvent	Desiccant	Remover
		Paint	Seal adhesive	Adhesive
		Plating solution	Conversion treatment agent	Operating oil
		Alkalis for cleaning	Chemicals for water treatment in boiler	
3200 3230	<ul style="list-style-type: none"> <li>• Manufacture of precision instruments and machinery</li> <li>• Medical instruments and apparatus</li> </ul>	Dehydrating agent	Optical glass Additive	Anti-corrosive Agent
		Solvent	Lubricating oil	Remover
		Solvent	Surface coating	Desiccant
3300	Manufacture of ordnance and accessories	Surface coating	Detergent	Dehydrating agent
3400	Miscellaneous manufacturing industries	Detergent	Desiccant	Solvent
		Disinfectant	Dyestuff	Paint remover
3600	Electricity industry	Detergent	Raw material of insulating oil	Water treatment agent
3900	Railway industry	Detergent	Solvent	Paint remover
7210	Laundry industry	Detergent	Dry cleaning solvent	
7700	Automobile maintenance industry	Anti-freeze	Fuel-switcher	Detergent
		Solvent	Coolant	Paint
		Adhesive		
9140	Higher educational institutions	Analytical reagent	Raw material of organic synthesis	Bleaching powder
		Solvent	Oxidizing agent	Disinfectant
		Detergent	Desiccant	Additive
9210	Research institutes for natural science	Anesthetic	Detergent	Extractant
		Dehydrating agent	Pharmaceutical refining	Antiseptic agent of blood
		Solvent	Raw material of pharmaceuticals	Desiccant
		Denaturant	Disinfectant	Anti-freeze
		Raw material of organic synthesis		

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#### 4-2-2 Specified substances included in raw materials and materials

The following specified substances are included in the raw materials and materials. Use the table as required.

Chemical and Raw	Specified Substance (the figures in parenthesis show substance number)				
Desiccant	cobalt and its compounds (100)				
Deodorant	formaldehyde (310)				
Adsorbent	N, N-dimethylformamide (172)				
Adhesive	acrylamide (2)	acrylic acid (3)	ethyl acrylate (4)	bisphenol A type epoxy resin (liquid) (30)	
	xylene (63)	glyoxal (65)	vinyl acetate (102)	methylene dichloride (145)	
	trichloroethylene (211)	toluene (227)	di-n-octyl phthalate (269)	di-n-butyl phthalate e(270)	
	bis (2-ethylhexyl) phthalate (272)		n-butyl benzyl phthalate(273)		formaldehyde (310)
Seal adhesive	chromium (IV) compounds (69)	toluene (227)	manganese and its compounds(311)		
Stock paste	1, 3, 5-trimethylbenzene (224)				
Dehydrating agent	selenium and its compounds (178)				
Coating	lead and its compounds (230)				
Dust inhibitor	nitrobenzene (240)				
Bleaching powder	barium and its water-soluble compounds (243)				
Solvent for detergent	ethylene glycol (43)	ethylene glycol monoethyl ether (44)	ethylene glycol monomethyl ether (45)	xylene (63)	tetrachloromethane (112)
	ethylene glycol monoethyl ether acetate (101)	1, 2-dichloroethane (116)	trans-1, 2-dichloroethylene (119)	HCFC-141b (132)	
	HCFC-225 (144)	methylene dichloride (145)	tetrachloroethylene (200)	1, 1, 1-trichloroethane (209)	1, 3, 5-trimethylbenzene (224)
	toluene (227)	benzene (299)			
Cleaning solvent	ethylbenzene (40)	xylene (63)	HCFC-225 (144)	tetrachloroethylene (200)	1, 1, 1-trichloroethane (209)
	1, 3, 5-trimethylbenzene (224)	toluene (227)			

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Chemical and Raw	Specified Substance (the figures in parenthesis show substance number)				
Cleaning agent	2-aminoethanol (16)	n-alkylbenzenesulfonic acid and its salts (alkyl C=10-14) (24)			
	ethylenediaminetetraacetic acid (47)	nitrilotriacetic acid (233)	boron and its compounds (304)	poly (oxyethylene) alkyl ether (alkyl C=12-15) (307)	
	poly (oxyethylene) octylphenyl ether (308)		poly (oxyethylene) nonylphenyl ether (309)		
Alkalis for cleaning	inorganic cyanide compounds (except complex salts and cyanates) (109)				
Acid for cleaning	hydrogen fluoride and its water-soluble salts (283)				
Textile eradicator	tetrachloromethane (112)	1,1,1-trichloroethane (209)	toluene (227)		
Dyestuff	aniline (15)	chromium and chromium (III) compounds (68)	chromium (IV) compounds (69)	3, 3'-dichloro-4, 4'-diaminodiphenylmethane (120)	dinitrotoluene (157)
	diphenylamine (159)	o-toluidine (225)	toluene (227)	nitrobenzene (240)	
	o-phenylenediamine (262)	m-phenylenediamine (263)	p-phenylenediamine (264)		
Paints	zinc compounds (water-soluble) (1)	acrylamide (2)	bis (2-ethylhexyl) adipate (9)	2-aminoethanol (16)	allyl alcohol (22)
	antimony and its compounds (25)	bisphenol A (29)	bisphenol A type epoxy resin (liquid) (30)		ethylbenzene (40)
	ethylene glycol (43)	ethylene glycol monoethyl ether (44)	ethylene glycol monomethyl ether (45)	ethylenediamine (46)	2, 3-epoxy-1-propanol (55)
	2, 3-epoxypropyl phenyl ether (57)		1-octanol (58)	cadmium and its compounds (60)	xylene (63)
	chromium and chromium (III) compounds (68)	chromium (IV) compounds (69)	cobalt and its compounds (100)	ethylene glycol monoethyl ether acetate (101)	ethylene glycol monoethyl ether acetate (103)
	2-(diethylamino) ethanol (109)	cyclohexylamine (114)	organic tin compounds (176)	styrene (177)	1, 3, 5-trimethylbenzene (224)
	toluene (227)	lead and its compounds (230)	nickel compounds (232)	di-n-octyl phthalate (269)	

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Chemical and Raw	Specified Substance (the figures in parenthesis show substance number)				
Paints	di-n-butyl phthalate (270)	tri-n-butyl phosphate (354)	di-n-heptyl phthalate (271)	bis (2-ethylhexyl) phthalate (272)	
	n-butyl benzyl phthalate (273)	boron and its compounds (304)	formaldehyde (310)	manganese and its compounds (311)	molybdenum and its compounds (346)
Colorant	nickel compounds (232)				
Ink	ethylene glycol (43)	xylene (63)	chromium (IV) compounds (69)	toluene (227)	
	lead and its compounds (230)	molybdenum and its compounds (346)			
Conversion treatment agent	zinc compounds (water-soluble) (1)	ethylene glycol (43)	lead and its compounds (230)	nickel compounds (232)	manganese and its compounds (311)
Coating agent	nickel compounds (232)	lead and its compounds (230)	boron and its compounds (304)		
Antiseptic agent	N,N-dimethylformamide (172)	formaldehyde (310)			
Plating solution	zinc compounds (water-soluble) (1)	cadmium and its compounds (60)	silver and its water-soluble compounds (64)	chromium and chromium (III) compounds (68)	chromium (IV) compounds (69)
	cobalt and its compounds (100)	inorganic cyanide compounds (except complex salts and cyanates) (109)	copper salts (water-soluble, except complex salts) (207)	lead and its compounds (230)	nickel compounds (232)
	hydrogen fluoride and its water-soluble salts (283)		boron and its compounds (304)		
Electrode for plating	silver and its water-soluble compounds (64)		lead and its compounds (230)	nickel (231)	
Chromating agent	chromium and chromium (III) compounds (68)		chromium (IV) compounds (69)		
Galvanizing agent	zinc compounds (water-soluble) (1)				
Flame retarder	antimony and its compounds (25)		formaldehyde (310)		
Plastic foaming agent	hydrazine (253)				
Antiknock	xylene (63)	1, 2-dichloroethane (116)			

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Chemical and Raw	Specified Substance (the figures in parenthesis show substance number)				
Coolant	ethylene glycol (43)	HCFC-22 (85)	chloroform (95)	tetrachloromethane (112)	CFC12 (121)
	tetrachloroethylene (200)	trichloroethylene (211)	methyl bromide (288)		
Insulating agent	benzene (299)				
Organic synthetic material	acrylonitrile (7)	acetonitrile (12)	aniline (15)	ethylbenzene (40)	epichlorohydrin (54)
	xylene (63)	chloroform (95)	1,2-dichloropropane (135)	dinitrotoluene (157)	o-toluidine (225)
	toluene (227)	nitrobenzene (240)	methyl bromide (288)	benzene (299)	formaldehyde (310)
Raw material of synthetic resin	acrylamide (2)	acrylic acid (3)	ethyl acrylate (4)	acrylonitrile (7)	vinyl chloride (77)
	bisphenol A (29)	1,2-dichloroethane (116)	styrene (177)	1,3-butadiene (268)	formaldehyde (310)
Raw material of synthetic rubber	acrylic acid (3)	ethyl acrylate (4)	styrene (177)	o-phenylenediamine (262)	
	m-phenylenediamine (263)	p-phenylenediamine (264)	1,3-butadiene (268)		
Raw material of organic rubber chemical	diphenylamine (159)				
Raw material of wax	n-alkylbenzenesulfonic acid and its salts (alkyl C=10-14) (24)		ethylbenzene (40)	ethylene glycol (43)	ethylene glycol monomethyl ether (45)
	xylene (63)	1,3,5-trimethylbenzene (224)	toluene (227)	Bis (hydrogenated tallow) dimethylammonium chloride (251)	benzene (299)
Raw material of brake fluid	bisphenol A (29)		boron and its compounds (304)		
Raw material of anti-fleeze	ethylene glycol (43)	manganse and its compounds (311)	molybdenum and its compounds (346)	tri-n-butyl phosphate (354)	



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Chemical and Raw	Specified Substance (the figures in parenthesis show substance number)				
Raw material of adhesive tape	acrylic acid (3)	ethyl acrylate (4)	acrylic acid (6)	antimony and its compounds (25)	cadmium and its compounds (60)
	xylene (63)	chromium and chromium (III) compounds (68)	tetrachloromethane (112)	methylene dichloride (145)	organic tin compounds (176)
	toluene (227)	lead and its compounds (230)	di-n-octyl phthalate (269)	di-n-butyl phthalate (270)	
	bis (2-ethylhexyl) phthalate (272)		benzene (299)	methyl methacrylate (320)	
Analytical reagent	aniline (15)	o-toluidine (225)	o-phenylenediamine (262)	m-phenylenediamine (263)	p-phenylenediamine (264)
Perfume	aniline (15)	nitrobenzene (240)			
Oxidizing agent	chromium (IV) compounds (69)				
Raw material of agricultural chemical	xylene (63)	p-dichlorobenzene (140)	benzene (299)		
Disinfectant	chloroform (95)	formaldehyde (310)			
Bactricide	ethylene oxide (42)	organic tin compounds (176)			
Raw material of insecticide	epichlorohydrin (54)	tetrachloromethane (112)	1,2-dichloroethane (116)	trichloroethylene (211)	
Raw material of pharmaceutical	acetonitrile (12)	aniline (15)	xylene (63)	glyoxal (65)	o-chloroaniline (71)
	chlorobenzene(93)	p-dichlorobenzene (140)	diphenylamine (159)	toluene (227)	benzene (299)
Anesthetic	chloroform (95)	methylene dichloride (145)			
Photosensitive body	selenium and its compounds (178)				
Photographic sensitive material	silver and its water-soluble compounds (64)				
Developer	hydroquinone (254)				
Catalyst	antimony and its compounds (25)	divanadium pentaoxide (99)	cobalt and its compounds (100)	selenium and its compounds (178)	nickel (231)
	nickel compounds (232)	boron and its compounds (304)			

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Chemical and Raw	Specified Substance (the figures in parenthesis show substance number)				
Reducing agent	hydrazine (253)				
Raw material of solar battery	selenium and its compounds (178)				
Plasticizer	bis (2-ethylhexyl) adipate (9)	terephthalic acid (205)	di-n-octyl phthalate (269)	di-n-butyl phthalate (270)	di-n-heptyl phthalate (271)
	bis (2-ethylhexyl) phthalate (272)		n-butyl benzyl phthalate (273)		
Solvent	acetonitrile (12)	ethylbenzene (40)	ethylene glycol (43)	epichlorohydrin (54)	xylene (63)
	chlorobenzene (93)	chloroform (95)	methyl chloride (96)		tetrachloromethane (112)
Solvent	1,2-dichloroethane (116)	1,2-dichloropropane (135)	methylene dichloride (145)	N,N-dimethylformamide (172)	tetrachloroethylene (200)
	1,1,1-trichloroethane (209)	1,1,2-trichloroethane (210)	trichloroethylene (211)	o-toluidine (225)	toluene (227)
	nitrobenzene (240)	carbon disulfide (241)	methyl bromide (288)		benzene (299)
Extractant	acetonitrile (12)	chloroform (95)	methyl chloride (96)	tetrachloromethane (112)	1,2-dichloroethane (116)
	methylene dichloride (145)		1,1,2-trichloroethane (210)	trichloroethylene (211)	benzene (299)
Chemical refining solvent	acetonitrile (12)				
Antioxidant	zinc compounds (water-soluble) (1)	bisphenol A (29)			
Rubber additive	2-imidazolidinethione (32)	N-cyclohexyl-2-benzothiazolesulfenamide (115)	3,3'-dichloro-4,4'-diaminodiphenylmethane (120)	diphenylamine (159)	thiourea (181)
	thiram(204)		lead and its compounds (230)	nickel compounds (232)	N-nitrosodiphenylamine (238)
	barium and its water-soluble compounds (243)	ziram (249)	N-(tert-butyl)-2-benzothiazolesulfenamide (282)	phthalic anhydride (312)	4,4'-methylenedianiline (340)
Additive	tri-n-butyl phosphate (354)				

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Chemical and Raw	Specified Substance (the figures in parenthesis show substance number)				
Denaturant	pyridine (259)				
Remover	xylene (63)	methylene dichloride (145)		toluene (227)	phenol l(266)
Mold lubricant	n-alkylbenzenesulfonic acid and its salts (alkyl C=10-14) (24)		ethylene oxide (42)	ethylene glycol (43)	nonylphenol (242)
	poly(oxyethylene) alkyl ether (alkyl C=12-15) (307)		poly (oxyethylene) octylphenyl ether (308)	poly (oxyethylene) nonylphenyl ether (309)	
Waterproofing agent	acrylic acid (3)	ethyl acrylate (4)	epichlorohydrin (54)	glyoxal (65)	
Textile treatment agent	chromium (IV) compounds (69)	lead and its compounds (230)	poly(oxyethylene) alkyl ether (alkyl C=12-15) (307)	poly (oxyethylene) nonylphenyl ether (309)	
Paper strength fortifier	acrylamide (2)	glyoxal (65)	formaldehyde (310)		
Resin	ethylene glycol (43)	N,N-dimethylformamide (172)	toluene (227)	phenol (266)	formaldehyde (310)
Resin hardener	hexamethylenetetramine (198)			1,3,5-trimethylbenzene (224)	phenol (266)
Resin bond	acetaldehyde (11)	xylene (63)	1,3,5-trimethylbenzene (224)	phenol (266)	formaldehyde (310)
Resin modifier	3,3'-dichloro-4,4'-diaminodiphenylmethane (120)		4,4'-methylenedianiline (340)		
Raw material of reinforced plastic	styrene (177)	2,3-epoxypropyl methacrylate (316)		methyl methacrylate (320)	
Petroleum refining	ethylbenzene (40)	xylene (63)	1,3,5-trimethylbenzene (224)	toluene (227)	benzene (299)
Grease	n-alkylbenzenesulfonic acid and its salts (alkyl C=10-14) (24)		ethylene oxide (42)	ethylene glycol (43)	2-(diethylamino) ethanol
	toluene (227)	nonylphenol (242)	poly (oxyethylene) nonylphenyl ether (309)	molybdenum and its compounds (346)	tri-n-butyl phosphate (354)
Cutting oil	2-aminoethanol (16)	boron and its compounds (304)	poly (oxyethylene) nonylphenyl ether (309)		

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<b>Chemical and Raw</b>	<b>Specified Substance (the figures in parenthesis show substance number)</b>				
Glass additive	antimony and its compounds (25)		divanadium pentaoxide (99)		
Raw material of brick	chromium and chromium (III) compounds (68)		boron and its compounds (304)		
Ablator	barium and its water-soluble compounds (243)				
Achromatic agent	selenium and its compounds (178)				
Raw material of iron and steel	antimony and its compounds (25)	chromium and chromium(III) compounds(68)	chromium(IV) compounds(69)	cobalt and its compounds(100)	selenium and its compounds(178)
	lead and its compounds (230)	nickel (231)	nickel compounds (232)	mangane and its compounds (311)	molybdenum and its compounds (346)
Welding materials	chromium and chromium (III) compounds (68)	nickel (231)	mangane and its compounds (311)	molybdenum and its compounds (346)	
Raw material of casting	chromium and chromium (III) compounds (68)	selenium and its compounds (178)	lead and its compounds (230)	nickel (231)	barium and its water-soluble compounds (243)
	beryllium and its compounds (294)	mangane and its compounds (311)	molybdenum and its compounds (346)		
Shot agent	chromium and chromium (III) compounds (68)		nickel (231)		
Flux agent	zinc compounds (water-soluble) (1)	boron and its compounds (304)			
Salt bath agent	inorganic cyanide compounds (except complex salts and cyanates) (109)		barium and its water-soluble compounds (243)		
Adjuster	2-aminoethanol (16)	1,2-dichloroethane (116)	1,2-dichloropropane (135)		
Compounding agent	cobalt and its compounds(100)		molybdenum and its compounds(346)		
Raw material of alloy	zinc compounds (water-soluble) (1)	antimony and its compounds (25)	chromium and chromium (III) compounds (68)	divanadium pentaoxide (99)	cobalt and its compounds (100)
	lead and its compounds (230)	nickel (231)	nickel compounds (232)	barium and its water-soluble compounds (243)	hydrogen fluoride and its water-soluble salts (283)
	beryllium and its compounds (294)		mangane and its compounds (311)		

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Chemical and Raw	Specified Substance (the figures in parenthesis show substance number)				
Etching gas	hydrogen fluoride and its water-soluble salts (283)		boron and its compounds (304)		
Epitaxial growth	hydrogen fluoride and its water-soluble salts (283)				
Raw material of storage battery	zinc compounds (water-soluble) (1)	antimony and its compounds (25)	ethylene glycol (43)	cadmium and its compounds (60)	xylene (63)
	cobalt and its compounds (100)		toluene (227)	lead and its compounds (230)	nickel compounds (232)
	arsenic and its inorganic compounds (252)	barium and its compounds (243)	beryllium and its compounds (294)	boron and its compounds (304)	manganese and its compounds (311)
Raw material of optical fiber	boron and its compounds (304)				
Optical glass additive	antimony and its compounds (25)	lead and its compounds (230)	barium and its water-soluble compounds (243)	arsenic and its inorganic compounds (252)	hydrogen fluoride and its water-soluble salts (283)
	boron and its compounds (304)				
Raw material of cement fiberboard	asbestos (26)				
Antifoaming agent	poly (oxyethylene) alkyl ether (alkyl C=12-15) (307)				
Water treatment agent	zinc compounds (water-soluble) (1)	N,N-dimethylformamide (172)	hydrazine (253)	boron and its compounds (304)	
Chemicals for water treatment in boiler	2-aminoethanol (16)	2-(diethylamino)ethanol (109)	cyclohexylamine (114)	hydrazine (253)	
Flocculant	acrylamide (2)				
Chelating agent	ethylenediaminetetraacetic acid (47)				
Adsorbent	2-aminoethanol (16)				
Antiseptic agent of blood	chloroform (95)				
Corrosion inhibitor	xylene (63)				

### 4-2-3 Specified substances in petroleum fuel and lubricating oil

Refer to the following table to study the specified substances in petroleum oil and lubricating oil whose quantity should be assessed.

Name of Sample	Specific Gravity	Content of Specified Substance (wt%)				
		benzene	toluene	xylene	ethyl benzene	1,3,5-trimethyl benzene
1) Gasoline (regular)	0.729 ~ 0.731	0.64	9.1	6.1	1.4	0.9
2) Gasoline (premium)	0.74 ~ 0.75	0.51	20.8	8.5	1.7	1.1
3) Naphtha	0.65 ~ 0.67	1.6	<1	<1	<1	-
4) Kerosene	0.79 ~ 0.80	0.01	0.1	1.1	0.3	0.7
5) Light oil	0.83 ~ 0.84	0.00	0.03	0.22	0.04	0.13
6) Fuel oil A	0.87 ~ 0.88	<0.1	<1	<1	<1	-
7) Fuel oil C	0.96 ~ 0.98	<0.1	<1	<1	<1	-
8) Straight asphalt	1.033 ~ 1.035	<0.1	<1	<1	<1	-
* 9) Crude petroleum (Zakum)	0.85	<1	<1	<1	<1	-
10) Crude petroleum (Upper Zakum)	0.86	0.10	<1	<1	<1	-
11) Crude petroleum (Murban)	0.83	0.16	<1	1.1	<1	-
* 12) Crude petroleum (Umm-Shaif)	0.84	<1	<1	<1	<1	-
* 13) Crude petroleum (Qatar land)	0.82	<1	<1	<1	<1	-
14) Crude petroleum (Qatar marine)	0.86	0.17	<1	<1	<1	-
15) Crude petroleum (Oman)	0.86	0.13	<1	<1	<1	-
* 16) Crude petroleum (Iranian L)	0.86	<1	<1	<1	<1	-
17) Crude petroleum (Iranian H)	0.88	0.15	<1	<1	<1	-
* 18) Crude petroleum (Arabian EL)	0.84	<1	<1	<1	<1	-
* 19) Crude petroleum (Arabian L)	0.85	<1	<1	<1	<1	-
20) Crude petroleum (Arabian M)	0.87	<0.1	<1	<1	<1	-
* 21) Crude petroleum (Arabian H)	0.89	<1	<1	<1	<1	-
22) Crude petroleum (Khafji)	0.89	<0.1	<1	<1	<1	-
23) Crude petroleum (Kuwait)	0.88	<0.1	<1	<1	<1	-
* 24) Crude petroleum (Sumatra L)	0.85	<1	<1	<1	<1	-
* 25) Crude petroleum (Bach-ho)	0.88	<1	<1	<1	<1	-
26) Crude petroleum (Daqing)	0.86	<0.1	<1	<1	<1	-

(cont'd)

Name of Sample	Specific Gravity	Content of Specified Substance (wt%)				
		benzene	toluene	xylene	ethyl benzene	1,3,5-trimethyl benzene
* 27) Crude petroleum (Seria)	0.85	<1	<1	<1	<1	-
* 28) Crude petroleum (Miri)	0.85	<1	<1	<1	<1	-
29) Crude petroleum (Minas)	0.85	<0.1	<1	<1	<1	-
* 30) Crude petroleum (Shengli)	0.90	<1	<1	<1	<1	-
* 31) Crude petroleum (Wafra)	0.91	<1	<1	<1	<1	-
32) <i>Lubricating oil (Refrigerating machine oil)</i>	<i>Light duty : 0.82 ~ 0.91 Heavy duty : 0.88 ~ 0.95</i>	<1	<1	<1	<1	-
33) <i>Lubricating oil (Turbine oil)</i>		<1	<1	<1	<1	-
34) <i>Lubricating oil (Internal combustion engine oil)</i>		<1	<1	<1	<1	-
35) <i>Lubricating oil (Ships)</i>		<1	<1	<1	<1	-
36) <i>Lubricating oil (Gear oil)</i>		<1	<1	<1	<1	-
37) <i>Lubricating oil (Grease)</i>		<1	<1	<1	<1	-
38) <i>Lubricating oil (Machine oil)</i>		<i>Light duty : 0.82 ~ 0.91 Heavy duty : 0.88 ~ 0.95</i>	<1	<1	<1	<1
39) <i>Lubricating oil (Bearing oil)</i>	<1		<1	<1	<1	-
40) <i>Lubricating oil (Grinding oil)</i>	<1		<1	<1	<1	-
41) <i>Lubricating oil (Heat treated oil)</i>	<1		<1	<1	<1	-
42) <i>Lubricating oil (Electric insulating oil)</i>	<1		<1	<1	<1	-
43) <i>Lubricating oil (Anticorrosive oil)</i>	<1		<1	<1	<1	-

(Materials provided by Japan Oil Federation)

- NOTES:**
1. The figures for those other than crude petroleum show the mean measurement values of three samples of one kind of oil, and the figures for crude petroleum show measurement value of one sample of one kind of oil.
  2. Contact analysis of lubricating oil (italicized) was not conducted. They shall be free of volatile substance and there shall be no specified substance whose content is 1% or more, based on the composition of an additive.
  3. \* is a measurement value of 1997.

(Reference): Physical properties of major oils

		Average Molecular Weight*1	Average Number of Carbons*1	Vapor Pressure (30 °C)*2 mmHg	Boiling Point*2 °C	Remarks
Gasoline		68	4.9	420	40 to 120	
Crude petroleum	A (5% distillating point: 100 °C or higher)	49	3.4	67 (45 °C)		Sumat light, Minas, Daqing or the like
	B (5% distillating point: below 100 °C)			270		Of oil produced in Arabia Of oil produced in Iran
Kerosene		101	7.0	0.7	185 to 285	
Light oil		103	7.9		190 to 350	

- Source) \*1. Investigation report on instruction manual drafting for countermeasures to environmental preservation of chemical substances in Chiba Prefectural Government in 1995.
- \*2. Investigation on rough estimation of release of hydrocarbons commissioned by Atmosphere Preservation Bureau of Environment Ministry in 1984.



#### 4-2-4 List of specified substances

The table below lists the substances subject to PRTR notification. Refer to it as required.

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	1	-	zinc compounds (water-soluble)	As Zinc
	2	79-06-1	acrylamide	
	3	79-10-7	acrylic acid	
	4	140-88-5	ethyl acrylate	
	5	2439-35-2	2-(dimethylamino) ethyl acrylate	
	6	96-33-3	methyl acrylate	
	7	107-13-1	acrylonitrile	
	8	107-02-8	acrolein	
	9	103-23-1	bis (2-ethylhexyl) adipate	
	10	111-69-3	adiponitrile	
	11	75-07-0	acetaldehyde	
	12	75-05-8	acetonitrile	
	13	78-67-1	2, 2'-azobisisobutyronitrile	
	14	90-04-0	o-anisidine	
	15	62-53-3	aniline	
	16	141-43-5	2-aminoethanol	
	17	111-40-0	N-(2-aminoethyl)-1,2-ethanediamine; diethylenetriamine	
	18	120068-37-3	5-amino-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-3-cyano-4-[(trifluoromethyl) sulfinyl]pyrazole; fipronil	
	19	61-82-5	3-amino-1H-1, 2, 4-triazole; amitrole	
	20	51276-47-2	2-amino-4-[hydroxyl (methyl) phosphinoyl] butyric acid; glufosinate	
	21	591-27-5	m-aminophenol	
	22	107-18-6	allyl alcohol	
	23	106-92-3	1-allyloxy-2, 3-epoxypropane	
	24	-	n-alkylbenzenesulfonic acid and its salts (alkyl C=10-14)	
	25	-	antimony and its compounds	As antimony
	26	1332-21-4	Asbestos	
	27	4098-71-9	3-isocyanatomethyl-3, 5, 5-trimethylcyclohexyl isocyanate	
	28	78-79-5	Isoprene	
	29	80-05-7	4, 4'-isopropylidenediphenol;1 bisphenol A	

(cont'd)

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	30	25068-38-6	polymer of 4, 4'-isopropylidenediphenol and 1-chloro-2, 3-epoxypropane (liquid); bisphenol A type epoxy resin (liquid)	
	31	4162-45-2	2, 2'-{isopropylidenebis [(2, 6-dibromo-4, 1-phenylene) oxy]} diethanol	
	32	96-45-7	2-imidazolidinethione	
	33	13516-27-3	1, 1'-[iminodi (octamethylene)] diguanidine; iminoctadine	
	34	76578-14-8	ethyl 2-[4-(6-chloro-2-quinoxalinyloxy) phenoxy]propionate; quizalofop-ethyl	
	35	25319-90-8	S-ethyl 2-(4-chloro-2-methylphenoxy) thioacetate; phenothiol; MCPA-thioethyl	
	36	36335-67-8	O-ethyl O-(6-nitro-m-tolyl) sec-butylphosphoramidothioate; butamifos	
	37	2104-64-5	O-ethyl O-4-nitrophenyl phenylphosphonothioate; EPN	
	38	40487-42-1	N-(1-ethylpropyl)-2, 6-dinitro-3, 4-xylidine; pendimethalin	
	39	2212-67-1	S-ethyl hexahydro-1H-azepine-1-carbothioate; molinate	
	40	100-41-4	Ethylbenzene	
	41	151-56-4	Ethyleneimine	
	42	75-21-8	ethylene oxide	
	43	107-21-1	ethylene glycol	
	44	110-80-5	ethylene glycol monoethyl ether	
	45	109-86-4	ethylene glycol onomethyl ether	
	46	107-15-3	Ethylenediamine	
	47	60-00-4	ethylenediaminetetraacetic acid	
	48	12122-67-7	zinc N, N'-ethylenebis (dithiocarbamate); zineb	
	49	12427-38-2	Manganese N, N'-ethylenebis (dithiocarbamate); maneb	
	50	8018-01-7	complex compounds of manganese N, N'-ethylenebis (dithiocarbamate) and zinc N, N'-ethylenebis (dithiocarbamate); mancozeb	
	51	85-00-7	1, 1'-ethylene-2, 2'-bipyridinium dibromide; diquat dibromide	
	52	62-44-2	4'-ethoxyacetanilide; phenacetin	
	53	2593-15-9	5-ethoxy-3-trichloromethyl-1, 2, 4-thiadiazole; echlomezol	

(cont'd)

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	54	106-89-8	Epichlorohydrin	
	55	556-52-5	2, 3-epoxy-1-propanol	
	56	75-56-9	1, 2-epoxypropane; propylene oxide	
	57	122-60-1	2, 3-epoxypropyl phenyl ether	
	58	111-87-5	1-octanol	
	59	1806-26-4	p-octylphenol	
	60	-	cadmium and its compounds	As cadmium
	61	105-60-2	-caprolactam	
	62	576-26-1	2,6-xylenol	
	63	1330-20-7	Xylene	
	64	-	silver and its water-soluble compounds	As silver
	65	107-22-2	Glyoxal	
	66	111-30-8	Glutaraldehyde	
	67	1319-77-3	cresol	
	68	-	chromium and chromium ( ) compounds	As chromium
	69	-	chromium ( ) compounds	As chromium
	70	79-04-9	chloroacetyl chloride	
	71	95-51-2	o-chloroaniline	
	72	106-47-8	p-chloroaniline	
	73	108-42-9	m-chloroaniline	
	74	75-00-3	Chloroethane	
	75	1912-24-9	2-chloro-4-ethylamino-6-isopropylamino-1,3,5-triazine; atrazine	
	76	51218-45-2	2-chloro-2'-ethyl-N-(2-methoxy-1-methylethyl)-6'-methylacetanilide; metolachlor	
	77	75-01-4	Chloroethylene; vinyl chloride	
	78	79622-59-6	3-chloro-N-(3-chloro-5-trifluoromethyl-2-pyridyl)-, -, -trifluoro-2,6-dinitro-p-toluidine; fluazinam	
	79	119446-68-3	1-({2-[2-chloro-4-(4-chlorophenoxy) phenyl]-4-methyl-1,3-dioxolan-2-yl} methyl)-1H-1,2,4-triazole; difenoconazole	
	80	79-11-8	chloroacetic acid	
	81	51218-49-6	2-chloro-2', 6'-diethyl-N-(2-propoxyethyl)acetanilide; pretilachlor	

(cont'd)

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	82	15972-60-8	2-chloro-2', 6'-diethy-N-(methoxymethyl) acetanilide;alachlor	
	83	97-00-7	1-chloro-2, 4-dinitrobenzene	
	84	75-68-3	1-chloro-1, 1-difluoroethane; HCFC-142b	
	85	75-45-6	chlorodifluoromethane; HCFC-22	
	86	2837-89-0	2-chloro-1, 1, 1, 2-tetrafluoroethane; HCFC-124	
	87	-	chlorotrifluoroethane; HCFC-133	
	88	75-72-9	chlorotrifluoromethane; CFC-13	
	89	95-49-8	o-chlorotoluene	
	90	122-34-9	2-chloro-4, 6-bis(ethylamino)-1, 3, 5-triazine; shimazine; CAT	
	91	107-05-1	3-chloropropene; allyl chloride	
	92	86598-92-7	4-chlorobenzyl N-(2, 4-dichlorophenyl)-2-(1H-1,2,4-triazol-1-yl) thioacetimidate; imibenconazole	
	93	108-90-7	Chlorobenzene	
	94	76-15-3	chloropentafluoroethane; CFC-115	
	95	67-66-3	Chloroform	
	96	74-87-3	chloromethane; methyl chloride	
	97	94-74-6	(4-chloro-2-methylphenoxy) acetic acid; MCP; MCPA	
	98	96491-05-3	2-chloro-N-(3-methoxy-2-thienyl)-2',6'-dimethylacetanilide; thenylchlor	
	99	1314-62-1	divanadium pentaoxide	
	100	-	cobalt and its compounds	As cobalt
	101	111-15-9	2-ethoxyethyl acetate; ethylene glycol monoethyl ether acetate	
	102	108-05-4	vinyl acetate	
	103	110-49-6	2-methoxyethyl acetate; ethylene glycol monomethyl ether acetate	
	104	90-02-8	Salicylaldehyde	
	105	102851-06-9	-cyano-3-phenoxybenzyl N-(2-chloro-, -trifluoro-p-tolyl)-D-valinate; fluvalinate	
	106	51630-58-1	-cyano-3-phenoxybenzyl 2-(4-chlorophenyl)-3-methylbutyrate; fenvalerate	

(cont'd)

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	107	52315-07-8	-cyano-3-phenoxybenzyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylate; cypermethrin	
	108	-	inorganic cyanide compounds (except complex salts and cyanates)	As cyan
	109	100-37-8	2-(diethylamino) ethanol	
	110	28249-77-6	S-4-chlorobenzyl N, N-diethylthiocarbamate; Thiobencarb	
	111	125306-83-4	N, N-diethyl-3-(2, 4, 6-trimethylphenylsulfonyl)-1H-1, 2, 4-triazole-1-carboxamide; cafenstrole	
	112	56-23-5	Tetrachloromethane	
	113	123-91-1	1, 4-dioxane	
	114	108-91-8	Cyclohexylamine	
	115	95-33-0	N-cyclohexyl-2-benzothiazolesulfenamide	
	116	107-06-2	1, 2-dichloroethane	
	117	75-35-4	1, 1-dichloroethylene; vinylydene dichloride	
	118	156-59-2	cis-1, 2-dichloroethylene	
	119	156-60-5	trans-1, 2-dichloroethylene	
	120	101-14-4	3, 3'-dichloro-4, 4'-diaminodiphenylmethane	
	121	75-71-8	Dichlorodifluoromethane; CFC-12	
	122	23950-58-5	3,5-dichloro-N-(1,1-dimethyl-2-propynyl)benzamide; propyzamide	
	123	-	dichlorotetrafluoroethane; CFC-114	
	124	306-83-2	2,2-dichloro-1,1,1-trifluoroethane; HCFC-123	
	125	106917-52-6	2', 4-dichloro-, -trifluoro-4'-nitro-m-toluenesulfonanilide; flusulfamide	
	126	82692-44-2	2-[4-(2,4-dichloro-m-toluoyl)-1,3-dimethyl-5-pyrazolyloxy]-4-methylacetophenone; benzofenap	
	127	3209-22-1	1, 2-dichloro-3-nitrobenzene	
	128	89-61-2	1, 4-dichloro-2-nitrobenzene	
	129	330-54-1	3-(3, 4-dichlorophenyl)-1,1-dimethylurea; diuron; DCMU	

(cont'd)

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	130	330-55-2	3-(3, 4-dichlorophenyl)-1-methoxy-1-methylurea; linuron	
	131	94-75-7	2, 4-dichlorophenoxyacetic acid; 2, 4-D; 2, 4-PA	
	132	1717-00-6	1, 1-dichloro-1-fluoroethane; HCFC-141b	
	133	75-43-4	dichlorofluoromethane; HCFC-21	
	134	96-23-1	1, 3-dichloro-2-propanol	
	135	78-87-5	1, 2-dichloropropane	
	136	709-98-8	3', 4'-dichloropropionanilide; propanil; DCPA	
	137	542-75-6	1, 3-dichloropropene; D-D	
	138	91-94-1	3, 3'-dichlorobenzidine	
	139	95-50-1	o-dichlorobenzene	
	140	106-46-7	p-dichlorobenzene	
	141	71561-11-0	2-[4-(2, 4-dichlorobenzoyl)-1, 3-dimethyl-5-pyrazolyloxy] acetophenone; pyrazoxyfen	
	142	58011-68-0	4-(2, 4-dichlorobenzoyl)-1, 3-dimethyl-5-pyrazolyl 4-toluenesulfonate; pyrazolynate	
	143	1194-65-6	2, 6-dichlorobenzonitrile; dichlobenil; DBN	
	144	-	Dichloropentafluoropropane; HCFC-225	
	145	75-09-2	Dichloromethane; methylene dichloride	
	146	3347-22-6	2, 3-dicyano-1, 4-dithiaanthraquinone; dithianon	
	147	50512-35-1	diisopropyl 1, 3-dithiolan-2-ylidenemalonate; isoprothiolane	
	148	17109-49-8	O-ethyl S,S-diphenyl phosphorodithioate; edifenphos; EDDP	
	149	640-15-3	S-2-(ethylthio) ethyl O, O-dimethyl phosphorodithioate; thiometon	
	150	35400-43-2	O-ethyl O-4-(methylthio)phenyl S-n-propyl phosphorodithioate; sulprofos	
	151	298-04-4	O, O-diethyl S-2-(ethylthio) ethyl phosphorodithioate; ethylthiometon; disulfoton	

(cont'd)

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	152	2310-17-0	O, O-diethyl S-(6-chloro-2, 3-dihydro-2-oxobenzoxazoliny) methyl phosphorodithioate; phosalone	
	153	34643-46-4	O-2, 4-dichlorophenyl O-ethyl S-propyl phosphorodithioate; prothiofos	
	154	950-37-8	S-(2, 3-dihydro-5-methoxy-2-oxo-1,3,4-thiadiazol-3-yl) methyl O, O-dimethyl phosphorodithioate; methidathion; DMTP	
	155	121-75-5	O, O-dimethyl S-1, 2-bis (ethoxycarbonyl)ethyl Phosphorodithioate; malathon; malathion	
	156	60-51-5	O, O-dimethyl S-(N-methylcarbamoyl) methyl Phosphorodithioate; dimethoate	
	157	25321-14-6	dinitrotoluene	
	158	51-28-5	2, 4-dinitrophenol	
	159	122-39-4	diphenylamine	
	160	102-81-8	2-(di-n-butylamino) ethanol	
	161	55285-14-8	2, 3-dihydro-2, 2-dimethyl-7-benzo [b] furyl N-(dibutylamino) thio-N-methylcarbamate; arbosulfan	
	162	-	dibromotetrafluoroethane; halone-2402	
	163	87-62-7	2, 6-dimethylaniline	
	164	95-64-7	3, 4-dimethylaniline	
	165	62850-32-2	S-4-phenoxybutyl N, N-dimethylthiocarbamate; Phenothiocarb	
	166	1643-20-5	N, N-dimethyldodecylamine N-oxide	
	167	52-68-6	dimethyl 2, 2, 2-trichloro-1-hydroxyethylphosphonate; trichlorfon; DEP	
	168	4685-14-7	1, 1'-dimethyl-4, 4'-bipyridinium salts (except paraquat dichloride)	
	169	1910-42-5	1, 1'-dimethyl-4, 4'-bipyridinium dichloride; paraquat; paraquat dichloride	
	170	85785-20-2	S-benzyl N-(1, 2-dimethylpropyl) -N-ethylthiocarbamate; esprocarb	
	171	119-93-7	3, 3'-dimethylbenzidine; o-tolidine	
	172	68-12-2	N, N-dimethylformamide	

(cont'd)

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	173	2597-03-7	ethyl 2-[(dimethoxyphosphinothioyl)thio]-2-phenylacetate; phenthoate; PAP	
	174	3861-47-0	3, 5-diiodo-4-octanoyloxybenzotrile; ioxynil octanoate	
	175	-	mercury and its compounds	As mercury
	176	-	organic tin compounds	As tin
	177	100-42-5	Styrene	
	178	-	selenium and its compounds	As selenium
	179	-	Dioxins	
	180	533-74-4	2-thioxo-3, 5-dimethyltetrahydro-2H-1, 3, 5-thiadiazine; dazomet	
	181	62-56-6	Thiourea	
	182	108-98-5	Thiophenol	
	183	77458-01-6	O-1-(4-chlorophenyl)-4-pyrazolyl O-ethyl S-propyl phosphorothioate; pyraclofos	
	184	2636-26-2	O-4-cyanophenyl O, O-dimethyl Phosphorothioate; Cyanophos; CYAP	
	185	333-41-5	O,O-diethyl O-2-isopropyl-6-methyl-4-pyrimidinyl phosphorothioate; diazinon	
	186	119-12-0	O, O-diethyl O-6-oxo-1-phenyl-1, 6-dihydro-3-pyridazinyl phosphorothioate; pyridaphenthion	
	187	13593-03-8	O, O-diethyl O-2-quinoxaliny Phosphorothioate; quinalphos	
	188	2921-88-2	O, O-diethyl O-3, 5, 6-trichloro-2-pyridyl phosphorothioate; Chlorpyrifos	
	189	18854-01-8	O, O-diethyl O-5-phenyl-3-isoxazolyl phosphorothioate; isoxathion	
	190	97-17-6	O-2, 4-dichlorophenyl O, O-diethyl phosphorothioate; dichlofenthion; ECP	
	191	2275-23-2	O, O-dimethyl S-2-[1-(N-methylcarbamoyl) ethylthio] ethyl phosphorothioate; vamidothion	
	192	122-14-5	O, O-dimethyl O-3-methyl-4-nitrophenyl phosphorothioate; fenitrothion; MEP	



(cont'd)

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	193	55-38-9	O, O-dimethyl O-3-methyl-4-(methylthio)phenyl phosphorothioate; fenthion; MPP	
	194	5598-13-0	O-3, 5, 6-trichloro-2-pyridyl O, O-dimethyl phosphorothioate; chlorpyrifos-methyl	
	195	41198-08-7	O-4-bromo-2-chlorophenyl O-ethyl S-propyl phosphorothioate; profenofos	
	196	26087-47-8	S-benzyl O, O-diisopropyl phosphorothioate; iprobenfos; IBP	
	197	1163-19-5	decabromodiphenyl ether	
	198	100-97-0	1, 3, 5, 7-tetraazatricyclo [3.3.1.1 <sup>3,7</sup> ]decane; hexamethylenetetramine	
	199	1897-45-6	tetrachloroisophthalonitrile; chlorothalonil; TPN	
	200	127-18-4	Tetrachloroethylene	
	201	-	tetrachlorodifluoroethane; CFC-112	
	202	11070-44-3	tetrahydromethylphthalic anhydride	
	203	116-14-3	Tetrafluoroethylene	
	204	137-26-8	tetramethylthiuram disulfide; thiram	
	205	100-21-0	terephthalic acid	
	206	120-61-6	dimethyl terephthalate	
	207	-	copper salts (water-soluble, except complex salts)	As copper
	208	75-87-6	Trichloroacetaldehyde	
	209	71-55-6	1, 1, 1-trichloroethane	
	210	79-00-5	1, 1, 2-trichloroethane	
	211	79-01-6	Trichloroethylene	
	212	108-77-0	2, 4, 6-trichloro-1, 3, 5-triazine	
	213	-	trichlorotrifluoroethane; CFC-113	
	214	76-06-2	trichloronitromethane; chloropicrin	
	215	115-32-2	2, 2, 2-trichloro-1, 1-bis (4-chlorophenyl) ethanol; kelthane; dicofol	
	216	55335-06-3	(3, 5, 6-trichloro-2-pyridyl) oxyacetic acid; triclopyr	
	217	75-69-4	Trichlorofluoromethane; CFC-11	

(cont'd)

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	218	2451-62-9	1, 3, 5-tris (2, 3-epoxypropyl)-1, 3, 5-triazine-2, 4, 6 (1H, 3H, 5H)-trione	
	219	118-96-7	2, 4, 6-trinitrotoluene	
	220	1582-09-8	, , -trifluoro-2, 6-dinitro-N, N-dipropyl-p-toluidine; trifluralin	
	221	118-79-6	2, 4, 6-tribromophenol	
	222	75-25-2	tribromomethane; bromoform	
	223	3452-97-9	3, 5, 5-trimethyl-1-hexanol	
	224	108-67-8	1, 3, 5-trimethylbenzene	
	225	95-53-4	o-toluidine	
	226	106-49-0	p-toluidine	
	227	108-88-3	Toluene	
	228	95-80-7	2, 4-toluenediamine	
	229	52570-16-8	2-(2-naphthyloxy) propionanilide; naproanilide	
	230	-	lead and its compounds	As lead
	231	7440-02-0	nickel	
	232	-	nickel compounds	As nickel
	233	139-13-9	nitrilotriacetic acid	
	234	100-01-6	p-nitroaniline	
	235	628-96-6	nitroglycol	
	236	55-63-0	nitroglycerin	
	237	100-00-5	p-nitrochlorobenzene	
	238	86-30-6	N-nitrosodiphenylamine	
	239	100-02-7	p-nitrophenol	
	240	98-95-3	nitrobenzene	
	241	75-15-0	carbon disulfide	
	242	25154-52-3	nonylphenol	
	243	-	barium and its water-soluble compounds	As barium
	244	88-89-1	picric acid	
	245	1014-70-6	2, 4-bis (ethylamino)-6-methylthio-1, 3, 5-triazine; simetryn	
	246	10380-28-6	bis (8-quinolinolato)copper; oxine-copper	
	247	74115-24-5	3, 6-bis (2-chlorophenyl)-1, 2, 4, 5-tetrazine; clofentezine	
	248	563-12-2	S, S'-methylene O, O, O', O'-tetraethyl bis (phosphorodithioate); ethion	

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Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	249	137-30-4	zinc bis (N, N'-dimethyldithiocarbamate); ziram	
	250	64440-88-6	N, N'-ethylenebis (thiocarbamoylthiozinc) bis (N, N-dimethyldithiocarbamate); polycarbamate	
	251	61789-80-8	bis (hydrogenated tallow) dimethylammonium chloride	
	252	-	arsenic and its inorganic compounds	As arsenic
	253	302-01-2	hydrazine	
	254	123-31-9	hydroquinone	
	255	100-40-3	4-vinyl-1-cyclohexene	
	256	100-69-6	2-vinylpyridine	
	257	55179-31-2	1-(4-biphenyloxy)-3, 3-dimethyl-1-(1H-1, 2, 4-triazol-1-yl)-2-butanol; bitertanol	
	258	110-85-0	piperazine	
	259	110-86-1	pyridine	
	260	120-80-9	pyrocatechol	
	261	96-09-3	phenyloxirane	
	262	95-54-5	o-phenylenediamine	
	263	106-50-3	p-phenylenediamine	
	264	108-45-2	m-phenylenediamine	
	265	156-43-4	p-phenetidine	
	266	108-95-2	phenol	
	267	52645-53-1	3-phenoxybenzyl 3-(2,2-dichlorovinyl)-2, 2-dimethylcyclopropanecarboxylate; permethrin	
	268	106-99-0	1,3-butadiene	
	269	117-84-0	di-n-octyl phthalate	
	270	84-74-2	di-n-butyl phthalate	
	271	3648-21-3	di-n-heptyl phthalate	
	272	117-81-7	bis (2-ethylhexyl) phthalate	
	273	85-68-7	n-butyl benzyl phthalate	
	274	69327-76-0	2-tert-butylimino-3-isopropyl-5-p henyltetrahydro-4H-1, 3, 5-thiadiazin-4-one; buprofezin	
	275	112410-23-8	N-tert-butyl-N'-(4-ethylbenzoyl)-3, 5-dimethylbenzohydrazide; tebufenozide	

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Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	276	17804-35-2	methyl N-[1-(N-n-butylcarbamoyl)-1H-2-benzimidazolyl]carbamate; benomyl	
	277	122008-85-9	butyl (R)-2-[4-(4-cyano-2-fluorophenoxy)phenoxy]propionate; cyhalofop-butyl	
	278	134098-61-6	tert-butyl 4-({[(1, 3-dimethyl-5-phenoxy-4-pyrazolyl)methylidene] aminoxy} methyl) benzoate; fenpyroximate	
	279	2312-35-8	2-(4-tert-butylphenoxy)cyclohexyl 2-propynyl sulfite; propargite; BPPS	
	280	96489-71-3	2-tert-butyl-5-(4-tert-butylbenzylthio)-4-chloro-3 (2H)-pyridazinone; pyridaben	
	281	119168-77-3	N-(4-tert-butylbenzyl)-4-chloro-3-ethyl-1-methylpyrazole-5-carboxamide; tebufenpyrad	
	282	95-31-8	N-(tert-butyl)-2-benzothiazolesulfenamide	
	283	-	hydrogen fluoride and its water-soluble salts	As fluoride
	284	12071-83-9	polymer of N, N'-propylenebis (dithiocarbamic acid) and zinc; propineb	
	285	353-59-3	bromochlorodifluoromethane; halone-1211	
	286	75-63-8	bromotrifluoromethane; halone-1301	
	287	75-26-3	2-bromopropane	
	288	74-83-9	bromomethane; methyl bromide	
	289	13356-08-6	hexakis (2-methyl-2-phenylpropyl) distannoxane; fenbutatin oxide	
	290	115-28-6	1, 4, 5, 6, 7, 7-hexachlorobicyclo [2.2.1]-5-heptene-2, 3-dicarboxylic acid; chlorendic acid	
	291	115-29-7	6, 7, 8, 9, 10, 10-hexachloro-1, 5, 5a, 6, 9, 9a-hexahydro-6, 9-methano-2, 4, 3-benzodioxathiepine 3-oxide; endosulfan	
	292	124-09-4	hexamethylenediamine	
	293	822-06-0	hexamethylene diisocyanate	
	294	-	beryllium and its compounds	As beryllium
	295	98-07-7	benzylidyne trichloride	
	296	98-87-3	benzylidene dichloride	

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Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	297	100-44-7	benzyl chloride	
	298	100-52-7	benzaldehyde	
	299	71-43-2	benzene	
	300	552-30-7	1, 2, 4-benzenetricarboxylic 1, 2-anhydride	
	301	73250-68-7	2-(2-benzothiazolyloxy)-N-methylacetanilide; mefenacet	
	302	82-68-8	pentachloronitrobenzene; quintozone; PCNB	
	303	87-86-5	pentachlorophenol	
	304	-	boron and its compounds	As boron
	305	75-44-5	phosgene	
	306	1336-36-3	polychlorinated biphenyls; PCBs	
	307	-	poly (oxyethylene) alkyl ether (alkyl C=12-15)	
	308	9036-19-5	poly (oxyethylene) octylphenyl ether	
	309	9016-45-9	poly (oxyethylene) nonylphenyl ether	
	310	50-00-0	formaldehyde	
	311	-	manganese and its compounds	as manganese
	312	85-44-9	phthalic anhydride	
	313	108-31-6	maleic anhydride	
	314	79-41-4	methacrylic acid	
	315	688-84-6	2-ethylhexyl methacrylate	
	316	106-91-2	2,3-epoxypropyl methacrylate	
	317	105-16-8	2-(diethylamino) ethyl methacrylate	
	318	2867-47-2	2-(dimethylamino) ethyl methacrylate	
	319	97-88-1	n-butyl methacrylate	
	320	80-62-6	methyl methacrylate	
	321	126-98-7	methacrylonitrile	
	322	89269-64-7	(Z)-2'-methylacetophenone 4, 6-dimethyl-2-pyrimidinylhydrazone; ferimzone	
	323	100-61-8	N-methylaniline	
	324	556-61-6	methyl isothiocyanate	
	325	2631-40-5	2-isopropylphenyl N-methylcarbamate; isoprocarb; MIPC	

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Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	326	114-26-1	2-isopropoxyphenyl N-methylcarbamate; propoxur; PHC	
	327	1563-66-2	2, 3-dihydro-2, 2-dimethyl-7-benzo [b] furanyl N-methylcarbamate; carbofuran	
	328	2655-14-3	3, 5-dimethylphenyl N-methylcarbamate; XMC	
	329	63-25-2	1-naphthyl N-methylcarbamate; carbaryl; NAC	
	330	3766-81-2	2-sec-butylphenyl -methylcarbamate; fenobucarb; BPMC	
	331	100784-20-1	methyl 3-chloro-5-(4, 6-dimethoxy-2-pyrimidinylcarbamoylsulfamoyl)-1-methylpyrazole-4-carboxylate; halosulfuron-methyl	
	332	33089-61-1	3-methyl-1, 5-di (2, 4-xylyl)-1, 3, 5-triazapenta-1, 4-diene; amitraz	
	333	144-54-7	N-methyldithiocarbamic acid; carbam	
	334	2439-01-2	6-methyl-1, 3-dithiolo [4, 5-b] quinoxalin-2-one	
	335	98-83-9	-methylstyrene	
	336	108-99-6	3-methylpyridine	
	337	61432-55-1	S-1-methyl-1-phenylethyl 1-piperidinecarbothioate; dimepiperate	
	338	26471-62-5	Methyl-1, 3-phenylene diisocyanate; m-tolylene diisocyanate	
	339	88-85-7	2-(1-methylpropyl)-4, 6-dinitrophenol	
	340	101-77-9	4, 4'-methylenedianiline	
	341	5124-30-1	methylenebis (4, 1-cyclohexylene) diisocyanate	
	342	88678-67-5	O-3-tert-butylphenyl N-(6-methoxy-2-pyridyl)-N-methylthiocarbamate; pyributicarb	
	343	298-81-7	9-methoxy-7H-furo [3 ,2-g] [1] benzopyran-7-one; methoxsalen	
	344	120-71-8	2-methoxy-5-methylaniline	
	345	68-11-1	mercaptoacetic acid	
	346	-	molybdenum and its compounds	As molybdenum
	347	470-90-6	2-chloro-1-(2, 4-dichlorophenyl) vinyl diethyl phosphate; chlorfenvinphos; CVP	

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Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of specified substance	Remarks
	348	2274-67-1	2-chloro-1-(2, 4-dichlorophenyl) vinyl dimethyl phosphate; dimethylvinphos	
	349	300-76-5	1, 2-dibromo-2, 2-dichloroethyl dimethyl phosphate; naled; BRP	
	350	62-73-7	dimethyl 2, 2-dichlorovinyl phosphate; dichlorvos; DDVP	
	351	6923-22-4	dimethyl (E)-1-methyl-2-(N-methylcarbamoyl) vinyl phosphate; monocrotophos	
	352	115-96-8	tris (2-chloroethyl) phosphate	
	353	25155-23-1	tris (dimethylphenyl) phosphate	
	354	126-73-8	tri-n-butyl phosphate	

## (Reference) Specified Class I Designated Chemical Substances

Specified Class I Designated Chemical substance *1	Number specified in Cabinet Order	CAS No.	Name of Specified Substance	Remarks
	26	1332-21-4	asbestos	
	42	75-21-8	ethylene oxide	
	60	-	cadmium and its compounds	As cadmium
	69	-	chromium ( ) compounds	As chromium
	77	75-01-4	chloroethylene; vinyl chloride	
	179	-	dioxins	
	232	-	nickel compounds	As nickel
	252	-	arsenic and its inorganic compounds	As arsenic
	294	-	beryllium and its compounds	As beryllium
	295	98-07-7	benzylidyne trichloride	
	299	71-43-2	benzene	
	343	298-81-7	9-methoxy-7H-furo [3, 2-g] [1] benzopyran-7-one; methoxsalen	

\*1 Specified Class I Designated Chemical Substances are specified in Article 4, Cabinet Order for Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management.

\*2 The names of substances are the ones described in the attached table 1 of Cabinet Order (Government Ordinance No.138 of 2000) for Law Concerning Reporting, etc. of Releases to the Environment of Specified Chemical Substances and Promoting Improvements in Their Management. Note that the names other than those may be used.

\*3 "Water soluble" means that mass percentage of 1 % or more is dissolved in chemically neutral water (10g/L) at an ordinary temperature.