

Announcement of hazards and risks of 55 new chemical substances in the third quarter of 2023

The Ministry of Employment and Labor (Minister Lee Jeong-sik) announced the names, hazards and risks of 55 new chemical substances manufactured and imported in the third quarter of this year, and measures to prevent health problems for workers .

and importers of new chemical substances must submit a hazard and risk investigation report to the Ministry of Employment and Labor at least 30 days prior to the date of manufacture or import of the relevant substance , and the Ministry of Employment and Labor reviews the report and regularly reports the name and hazards and risks of the new chemical substance. It is being announced .

the 55 new chemical substances announced this time, 20 types , including (S₁)-Nornicotine and Diphenylphosphine , were confirmed to have acute toxicity, skin and eye irritation, skin sensitization, and aquatic environment hazard. Accordingly, in order to protect workers who handle harmful or dangerous chemicals, the Ministry of Employment and Labor notified employers who manufacture or import such substances of measures to prevent health problems in workers.

Minister Lee Jeong-sik said, "In order to search for 'new chemical substances', the Ministry of Employment and Labor has established a system for 'new chemical substances' research and supervision. He said, "It should not stop at knowing the hazards and risks of new chemicals and measures to protect workers ." He also said, " Employers should install local exhaust systems, etc. , and wear respiratory protection, protective gloves, and protective gear. He emphasized, "It is important to provide and wear personal protective equipment such as safety glasses , while also ensuring that workers follow basic safety and health rules, such as thoroughly wearing personal protective equipment when handling chemicals."

2. List of new chemical substances announced

Department	Industrial Accident Prevention	responsible	Manager	Shim Woo-seop
	Chemical Accident	Secretary	Lee Ji-voon	(044-202-

□ **(Purpose)** To protect the health of workers handling the substances by investigating and confirming the **hazards and risks** of **new chemical substances in advance**.

□ **(Legal basis)** Article 108 of the Occupational Safety and Health Act

□ **(Main content)** **Manufacturing new chemical substances • Importers must submit a hazard/risk investigation report** (hereinafter referred to as "investigation report") to the Minister of Employment and Labor in advance

* If a new chemical substance is registered with the Ministry of Environment, it is considered that an investigation report has been submitted.

○ The Ministry of Employment and Labor , together with the Korea Occupational Safety and Health Agency, **reviews the hazards and risks** of new **chemicals and** notifies employers **of measures to prevent worker health problems*** and publishes **the names and hazards and risks** of new chemicals in the **Official Gazette** .

* Installation of ventilation facilities such as local exhaust system, wearing of protective gear, etc.

□ Detailed operating procedures

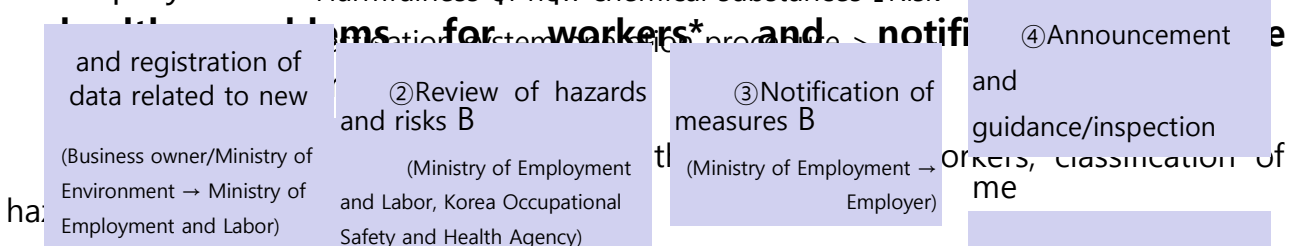
○ **(Submission of investigation report)** Manufacturers/importers of new chemical substances must submit **an investigation report*** or register **the new chemical substance** with the **Ministry of Environment 30 days before** the date of **manufacture/import (14 days** for manufacture/import quantity less than 1 ton). "Data" provided to the Ministry of Employment and Labor)

* (Attached documents) Material safety data sheet, toxicity test data, manufacturing or use/handling method, process chart, etc.

** (Registered data) Harmfulness/risk data, guidelines for safe use, exposure information related to use, etc.

○ **(Hazard/Risk Review)** The Ministry of Employment and Labor and Korea Occupational Safety and Health Agency review the submitted investigation report or the registration data provided to **confirm the hazards and risks** of the **new chemical substance** .

○ **(Notification of measures)** Based on the review results, the Ministry of Employment and Labor prepares a **notice of measures for workers*** and **notifies** the



○ **(Publication)** The Ministry of Employment and Labor publishes **name, hazards/risks, manufacturing/import volume**

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List of new chemical substances

announced in the third quarter of 2023

Ministry of Employment and Labor Notice No. 2023-460

Article 108, Paragraph 3 of the Occupational Safety and Health Act and Article 153 of the Enforcement Rules of the same Act, the names, hazards, and hazards of new chemical substances are determined. The risks, annual manufacturing/import volume, and measures to prevent worker health problems are announced as follows.

September 26, 2023

Minister of Employment
and Labor

O Serial number: 23-23, year of publication - year of receipt - receipt number

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domestic and foreign chemical information databases, etc. to comply with the "Standards for classification and labeling of chemical substances and material safety data sheets" (Ministry of Employment and Labor Notice No. 2023-9) Classify hazards and risks according to

* New hazard and risk information may be confirmed through additional research such as toxicity testing.

※ Measures to prevent health problems for workers: Even if there is no information in the hazard/risk information section, basic measures that employers should take in case workers handling new chemicals are exposed to chemicals in the short or long term are presented.

Name of new chemical substance, hazard, Risks, annual manufacturing/import volume and measures

Serial Number	Name of new chemical substance	Harmfulness Risk	manufacturing	Measures to prevent worker health disorders
23-23 119	Benzene, ethenyl-, polymer with alkyl(C=3~9) kenoate (C=2~8), alkyl alkyl—alkenoate(C=2~8), substituted—alkyl(C=1~6) methacrylate and (di group kyFalkylene—alkanediyl(C=2~8)biscarbomonocycle, tert-alkyl(C=3~9) perbenzoate-initiated		1000 tons	O When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. O It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during handling.
23-23- 120 (hwan)	N1, N2-Bis(1,1 -dimethylethyl) -1,2-ethanediamine (CAS No. 4062-60-6)	O Acute toxicity category 4 (oral) O Chronic aquatic environment hazard category 3	1 ton	O When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. O It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts
23-23- 121 (hwan)	Alkyl carbopolycyclic spirobi(carbopolycyclic) heteropolycyclic amine		1 ton	O When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. O It is advisable to install appropriate ventilation facilities such as local exhaust systems in places where large amounts

Serial Number	Name of new chemical substance	Harmfulness Risk	manufacturing	Measures to prevent worker health disorders
23-23 122(ring)	Hexahydro-1,3-isobenzofurandione polymer with 2-ethyl-2-(hydroxymethyl)H ,3-p ropanediol (CAS No. 56631-93-7)		100 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities, such as local exhaust devices in places where large amounts
23-23 123(ring)	Methyl 2-propynyl carbonate (CAS No. 61764-71-4)	○ Flammable liquid category 3 ○ Acute toxicity category 3 (oral) ○ Skin corrosion/skin irritation Category 2 (Skin irritation) ○ Skin sensitization category 1 ○ Chronic aquatic environment hazard	1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts
23-23 124(ring)	(Carbopolycycle)-heteropolycycli c- carbomonocyclic- heteromonocycle		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust
23-23 125(ring)	Bicarbomonocyclic- dibenzofuranyl-phenyl- heteropolycyclic-amine		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust
23-23 126(ring)	(H eropolycy ic) —bis (4- (heteropolycyclic)phenyl)biphenyl-amine		10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust
23-23 127(ring)	Reaction mass of a-(2-methyl-1 -oxo-2-propenyl)- (1) - (phosphonooxy)poly[oxy(meth yl—1,2—ethanediyl)] and a,a'-phosphinicobis[^(2-methyl -1 —oxo—2—propenyl)oxy]poly[oxy(methyl-1,2-ethanediyl)] (CAS No. not granted)		10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts
23-23 128(ring)	Benzocarbopolycyclicfuran-2_yl_ [carbomonocyclic]-4-yl-carbomo nocyclic- heteropolycyclicamine		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust

Serial Number	Name of new chemical substance	Harmfulness Risk	manufacturing	Measures to prevent worker health disorders
23-23 129(ring)	1-Naphthalenol polymer with 1,4 -bis(methoxymethyl)benzene and (chloromethyl)oxirane (CAS No. 146088-72-4)		10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during handling.
23-23 130(ring)	Silicon dioxide reaction product with aluminosilicates, alkyl, alkyl group-terminated	○ Pyrocombustible solid Category 1	10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during handling.
23-23- 131 (hwan)	Alkan (OKF16), alkoxylated (C=1 ~ 5) koxylated (C=3 ~ 7), sulfated, sodium salt	○ Skin corrosion/ Skin irritant category 2 (skin irritation) ○ Serious eye damage/eye irritation Category 1 (Severe eye damage)	1000 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during handling.
23-23 132(ring)	Reaction mass of a—(2—methyl-1 -oxo-2-propenyl)- (1) - (phosphonooxy)poly[oxy(meth yl—1,2—ethanedyl)], ammonium salt and a,a'-phosphinicobis[^(2-methyl -1 —oxo—2—propenyl)oxy]poly[oxy(m#iy l—1,2—ethanedyl)]], ammonium s t (CAS No. not granted)		10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during handling.
23-23 133(ring)	Dodecanoic acid, monoester with decaglycerol (CAS No. 34406-66-1)	○ Chronic aquatic environment hazard category 3	10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during handling.
23-23 134	1,1,1,2,2,3,3,4,4,5,5,6,6— Tridecafluoro-8-iodooctane (CAS No. 2043-57-4)		1000 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during handling.

Serial Number	Name of new chemical substance	Harmfulness Risk	manufacturing	Measures to prevent worker health disorders
23-23 136(ring)	2-Methyloxirane polymer with oxirane, ether with 1,4 : 3,6-dianhydro-D-glucitol (2 : 1), diblock (CAS No. 2640312-34-9)		100 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts
23-23 137(ring)	Triphenylsulfonium triflate (CAS No. 66003-78-9)	○ Acute toxicity category 3 (oral)	1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local
23-23 138(ring)	Alkyl P-[[[(amino-halogenated-9+he teropolycyclic-yl)methyl]carbomo nocycle]substituted]methyl]phosphonate		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust
23-23 139(ring)	2—(Dimethylamino)ethyl 2-methyl-2-propenoate polymer with ethyl 2-propenoate and methyl 2-methyl-2-propenoate, acetate (CAS No. 67757-47-5)		100 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities, such as local
23-23 140(ring)	Diphenylphosphine (CAS No. 829-85-6)	○ Flammable Liquid Category 2 ○ Pyrocombustible liquid category 1 ○ Acute toxicity category 4 (oral) ○ Chronic aquatic environment hazard category 3	1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust
23-23- 141 (hwan)	N-[1,1'-Biphenyl]-4-yl-N-(9,9-dimethyl-9H-fluoren-2-yl)-1,11-diphenyl-11H-benzo[b]fluoren-2-amine (CAS No. 1793006-17-3)		1 ton under	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where a large amount
23-23 143(ring)	[(Tricarbomonocyclicalkoxy)alkyl]cyclopropanol		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate

Serial Number	Name of new chemical substance	Harmfulness Risk	manufacturing	Measures to prevent worker health disorders
23-23 144(ring)	Alkylalkyl(C=T5) alkyl-alkenoate(C=2~6) polymer with substitutedalkyl(C=1~5) alkyl-alkenoate(C=2 ~ 6), alkyl alkyl—alkenoate(C=2 ~ 6), 1-(phenylmethyl)-1H-pyrrole-2,5-dione and 2-propenoic acid		100 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust
23-23 145(ring)	Ethylene polymer with phenol, calcium hydroxide, sulfurized and carbonated (CAS No. not granted)		1000 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during
23-23 146(ring)	Ethylene polymer with phenol, carbon dioxide and calcium hydroxide (CAS No. not granted)	○ Skin sensitization category 1	1000 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during
23-23 147(ring)	Ethyl 3-amino-4,4,4-trifluorocrotonate (CAS No. 372-29-2)	○ Seal Liquid Category 4 ○ Acute toxicity category 4 (oral) ○ Chronic aquatic environment hazard Category 3	100 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during
23-23 - 148(ring)	Alkoxy(C=2 ~ 6) dihalogenated alkyl(C=3 ~ 7)cyclohexyl carbomonocyclic alkoxy(C=1~5) benzene		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust systems in places where large amounts of dust are generated during handling
23-23 149(ring)	(2E,2'E)—1,1'-[2,4,8,10-Tetraoxaspiro[5.5]undecane-3,9-diylbis(2,2-dimethyl-2,1-ethanediyl)] 2—cyano—3—(3,4—dimethoxyphenyl)-2-propenoate (CAS No. 2233585-18-5)	○ Chronic aquatic environment hazard category 3	10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where a large amount

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23-23 150	8— (4,5,6, 7—Tetrachloro—1,3—dihydro-1,3—dioxo—2H—isoidine—2—yl)— 2 - (4,5,6,7-tetrachloro-3 -hydroxy- 1 -oxo-1H—inden—2—yl)—6—quinolinesulfonic acid (CAS No. 386254-45-1)		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust
23-23 151	Fatty acids, coco, polymers with alkane(C=4—8)dioic acid, castor-oil fatty acids, alkane(C=4-8)diol, alkyl(C=1-4)alkyl(C=3-7) alkyl(C=1—4)alkenoate(03-7), carbomonocycle-dicarboxylic acid, alkyl(C=1-4)alkenoic(C=3-7) acid, di group alkyl (C=1-4)alkane(C=3-7)diol, styrene and alkyl(C=1-3)-substituted-alkyl(C= 1—4)—alkane(C=3—7) ol, tert -Bu carbomonocycle-carboperoxoate -initiated, compds. with 2-(di alkyl(C=1-4)arhno) carb kane(C=1-3)d		100 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during handling.
23-23 152 23-23 153	1,3-Benzenedicarboxylic acid, polymer with 1,6-diisocyanatohexane, 1,2-ethanediol, 2-ethyl-2-(hydroxymethyl) ,3-p ropanediol, hexahydro-1,3-isobenzofurandione, hexanedioic acid and oxybispropanol] (CAS No. 2023756-65-0)		10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust systems in places where large amounts of dust are generated during handling.
23-23 155(ring)	2,4—Diphenyl—6 — [3—(4,4,5,5—tetramethyl-1,3,2-dioxaborolan-2-yl) phenyl]—1,3,5—tri group ne (CAS No. 1269508-31-7)		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate
23-23-156 (hwan)	Biscarbomonocyclic-heteromon ocyclic)—[terphenyl]—substituted		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate
23-23-157 (hwan)	Aluminum chloride, basic reaction products with silica (CAS No. 675106-31-7)		10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate

Serial Number	Name of new chemical substance	Harmfulness Risk	manufacturing	Measures to prevent worker health disorders
23-23-158 (hwan)	2,4-Bis([1,1' -biphenyl]-4-yl)-6-chloro-1,3,5-triazine (CAS No. 182918 Ser. 3-4)		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate
23-23-159(ring)	Reaction mass of (3E)-4-(2,6,6-trimethylcyclohex-2-en-1-yl)but-3-en-2-one and 4-(dodecylsulfanyl)-4-(2,6,6-trimethylcyclohex-1-en-1-yl)butan-2-one and 4-(dodecylsulfanyl)-4-(2,6,6-trimethylcyclohex-2-en-1-yl)butan-2-one and (T)-4-(2,6,6-trimethyl-1-cyclohexen-1-yl)-3-buten-2-one (CAS No. not granted)	○ Skin sensitization category 1B ○ Chronic aquatic environment hazard - Category 3	10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of mist or steam are generated during handling.
23-23-160(ring)	2-[3-(2H-Benzotriazol-2-yl)-4-hydroxyphenyl]ethyl 2-methyl-2-propenoate (CAS No. 96478-09-0)		1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. ○ It is advisable to install appropriate ventilation facilities such as local exhaust
23-23-161 (hwan)	Alkyl(OT5) alkenoate(C=2 ~ 6) polymer with alkane(C=1~5)amine, [hydroxy-[(alkoxy(C=1~5)substituted)alkyl(C=1~5)]carbomonocyclic] derivs.	○ Chronic aquatic environment hazard category 2	1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts
23-23-163(ring)	4-Chloro-1,3-dioxolan-2-one (CAS No. 3967-54-2)	○ Acute toxicity category 4 (oral) ○ Skin corrosion/skin irritant Category 2 (Skin irritation) ○ Skin sensitization category 1B	10 tons	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts
23-23-164(ring)	(S)-Nornicotine (CAS No. 494-97-3)	○ Acute toxicity category 3 (oral)	1 ton	○ When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. ○ It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts

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23-23 165 (ring)	Coconut oil reaction products with boric acid (H ₃ BO ₃), diethan amine and glycerol (CAS No. 1428353-74-5)	- o Serious eye damage/eye irritation category 2 (eye irritation) - o Skin sensitization category 1 - o Chronic aquatic environment hazard category 2	100 tons	- o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. - o It is advisable to install appropriate ventilation facilities such as local exhaust devices in places where large amounts of dust are generated during handling.
23-23 166 (ring)	Zinc hexacyanocobaltate (III), tertiary butyl alcohol/polypropylene glycol complex (CAS No. not granted)		1 ton	- o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. - o It is advisable to install appropriate
23-23 167 (ring)	Metal substituted phosphide sulfide	o Acute toxicity category 4 (oral)	1 ton	- o Since flammable gas may be generated when in contact with water, it is advisable to avoid contact with water and prevent moisture. - o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc.
23-23 168 (Hwan) 23-23 170 (Hwan) 23-23-171 (Hwan)) 23-23 - 172 (	2,2'-Diglycidoxy-1,1'-binaphthalene (CAS No. 1106-42-9)		1 ton	- o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. - o It is advisable to install appropriate ventilation facilities, such as local exhaust systems, in places where a large amount of dust is generated during
23-23 169 (ring)	1 — (Dimethylamino) — 3 — [2 — [2 — (3 — m ethoxyphenyl) ethyl]phenoxy]-2-propanol, hydrochloride (1 : 1) (CAS No. 135261-74-4)	- o Acute toxicity category 4 (oral) - o Chronic aquatic environment hazard Category 2	10 tons	- o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. - o It is advisable to install appropriate
23-23 174	2-Propenoic acid, 2-methyl-, polymer with butyl 2-methyl-2-propenoate, butyl 2-propenoate, ethenylbenzene, 2-hydroxyethyl 2-methyl-2-propenoate and methyl 2-methyl-2-propenoate, tert-Bu 2-ethylhexaneperoxoate- and tert-Bu peroxide-initiated (CAS No. 1807725-50-3)		100 tons	- o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. - o It is advisable to install appropriate ventilation facilities such as local exhaust systems in places where large amounts of dust are generated during handling.

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23-23 175(ring)	Hexafluoropropene, oxidized, oligomers, reduced, fluorinated (CAS No. 161075-00-9)	o Chronic aquatic environment hazard category 4	1000 tons	o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. o It is advisable to install appropriate ventilation facilities such as local exhaust
23-23 176(ring)	2-Cyanoethyl N,N,N',N'-tetrakis(1-methylethyl)phosphorodiamidite (CAS No. 102691-36-1)	o Acute toxicity category 4 (oral) o Skin sensitization category 1B	1 ton	o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to mist and vapor. o It is advisable to install appropriate ventilation facilities such as local exhaust
23-23 177(ring)	9,9'-Bis([1,1'-biphenyl]-3-yl)-3,3'-bi-ah—l—carbaz this e (CAS No. 1352040-89-1)		1 ton	o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. o It is advisable to install appropriate
23-23 178(ring)	2-(4-Bromophenyl)naphthalene (CAS No. 22082-99-1)		1 ton	o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. o It is advisable to install appropriate
23-23 179(ring)	3-(4-Chlorophenyl)-1-phenyl-naphthalene (CAS No. 103973-25-7)		1 ton	o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. o It is advisable to install appropriate
23-23- 181 (hwan)	N-(Carbopolycyclic carbomonocyclic)-N-carbomonocyclic-(carbomonocyclic quatercarbomonocyclic)-amine		1 ton	o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. o It is advisable to install appropriate
23-23 182(ring)	N,N-Diethyl-3-methyl-4-[2-(5-nitro-2-thiazolyl)diazenyl]benzen amine (CAS No. 70693-64-0)	o Flammable solid Category 1 o Skin sensitization category 1 o Acute aquatic environment hazard category 1 o Chronic aquatic environment hazard category 1	10 tons	o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. o It is advisable to install appropriate
23-23 - 184(ring)	N-Phenyl-4-(4-phenyl-2-naphthalenyl)benzenamine (CAS No. 1345860-74-3)		1 ton	o When handling, it is advisable to wear appropriate personal protective equipment such as respiratory protection, protective gloves, and safety glasses to avoid direct exposure to dust, etc. o It is advisable to install appropriate