

Date of issue 4/20/2025 (month/day/year)

Version 1

Section 1. Chemical product and company identification

A. Product name : HI-TEMP 1000 ALUMINUM
Product code : 000010024650

Other means of identification

00466853; 00479932 ; 00480352

B. Relevant identified uses of the substance or mixture and uses advised against

Product use : Professional applications, Used by spraying.
Use of the substance/
mixture : Coating.
Uses advised against : Product is not intended, labelled or packaged for consumer use.

C. Supplier's or Importer's
information : PPG SSC
(680-090)
19, Yeocheon-ro 217beon-gil, Nam-gu,
Ulsan, Korea
Tel: +82-52-210-8222

Email Address : Korea.MSDS@PPG.COM

Emergency telephone
number: : +82-52-210-8331

Section 2. Hazards identification

A. Hazard classification : FLAMMABLE LIQUIDS - Category 2
GERM CELL MUTAGENICITY - Category 1B
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 1
This product is classified in accordance with the Industrial Safety and Health Act and the Chemical Control Act.

B. GHS label elements, including precautionary statements

Symbol :   

Signal word : Danger

Section 2. Hazards identification

Hazard statements : H225 - Highly flammable liquid and vapor.
H340 - May cause genetic defects.
H350 - May cause cancer.
H361 - Suspected of damaging fertility or the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure.
(central nervous system (CNS), kidneys, liver)
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 - Use explosion-proof electrical, ventilating or lighting equipment.
P241 - Use explosion-proof electrical, ventilating or lighting equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P240 - Ground and bond container and receiving equipment.
P233 - Keep container tightly closed.
P273 - Avoid release to the environment.
P260 - Do not breathe vapor.

Response : P391 - Collect spillage.
P370 + P378 - In case of fire: Never use water to extinguish.
P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Storage : P403 + P235 - Store in a well-ventilated place. Keep cool.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

C. Other hazards which do not result in classification : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

CAS number/other identifiers

CAS number : Not applicable.

Chemical name	Common name	Identifiers	%
Dimethyl carbonate	DIMETHYL CARBONATE	CAS: 616-38-6 EC: 210-478-4	10 -<20
Aluminum	ALUMINUM POWDER	CAS: 7429-90-5 EC: 231-072-3	10 -<20
SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC	SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC	CAS: 64742-94-5 EC: 265-198-5	5 - <10
Xylene	XYLENES	CAS: 1330-20-7 EC: 215-535-7	5 - <10
ethylbenzene	ETHYLBENZENE	CAS: 100-41-4 EC: 202-849-4	1 - <5
1-Nitropropane	1-NITROPROPANE	CAS: 108-03-2 EC: 203-544-9	1 - <5

Section 3. Composition/information on ingredients

FLUX-CALCINED DIATOMACEOUS EARTH	DIATOMACEOUS EARTH	CAS: 68855-54-9	1 - <5
zinc oxide	ZINC OXIDE	EC: 272-489-0 CAS: 1314-13-2	1 - <5
SOLVENT NAPHTHA (PETROLEUM), LIGHT AROMATIC	SOLVENT NAPHTHA (PETROLEUM), LIGHT AROMATIC	EC: 215-222-5 CAS: 64742-95-6	1 - <5
1,2,4-TRIMETHYLBENZENE	1,2,4-TRIMETHYL BENZENE	EC: 265-199-0 CAS: 95-63-6 EC: 202-436-9	1 - <5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

- A. Eye contact** : Remove contact lenses, irrigate copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
- B. Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
- C. Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- D. Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.
- E. Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- A. Extinguishing media**
- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

Section 5. Fire-fighting measures

- B. Specific hazards arising from the chemical** : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
metal oxide/oxides
Formaldehyde.
- C. Special equipment for fire-fighting** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Fire-fighting procedures** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Section 6. Accidental release measures

- A. Personal precautions, protective equipment and emergency procedures** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- B. Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
- C. Methods and materials for containment and cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

- A. Precautions for safe handling** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Materials such as cleaning rags, paper wipes and protective clothing, which are contaminated with the product may spontaneously self-ignite some hours later. To avoid the risks of fires, all contaminated materials should be stored in purpose-built containers or in metal containers with tight-fitting, self-closing lids. Contaminated materials should be removed from the workplace at the end of each working day and be stored outside.
- B. Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

A. Occupational exposure limits

Ingredient name	Exposure limits
Aluminum	ISHA Article 42 (Republic of Korea, 1/2020)
Xylene	TWA 8 hours: 10 mg/m ³ . Form: Dust. ISHA Article 42 (Republic of Korea, 1/2020) [Xylene]
ethylbenzene	STEL 15 minutes: 150 ppm. TWA 8 hours: 100 ppm.
1-Nitropropane	ISHA Article 42 (Republic of Korea, 1/2020) STEL 15 minutes: 125 ppm. TWA 8 hours: 100 ppm.
FLUX-CALCINED DIATOMACEOUS EARTH	ISHA Article 42 (Republic of Korea, 1/2020) TWA 8 hours: 25 ppm.
zinc oxide	ISHA Article 42 (Republic of Korea, 1/2020) TWA 8 hours: 10 mg/m ³ . ISHA Article 42 (Republic of Korea, 1/2020)

Section 8. Exposure controls/personal protection

1,2,4-TRIMETHYLBENZENE

STEL 15 minutes: 10 mg/m³.
TWA 8 hours: 5 mg/m³.
TWA 8 hours: 2 mg/m³. Form: Respirable dust.

ISHA Article 42 (Republic of Korea, 1/2020) [Trimethyl benzene]
TWA 8 hours: 25 ppm.

Recommended monitoring procedures

: Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

B. Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

C. Personal protective equipment

Respiratory protection

: Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Eye protection

: Chemical splash goggles.

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Gloves

: For prolonged or repeated handling, use the following type of gloves:

May be used: nitrile rubber

Recommended: polyvinyl alcohol (PVA), Viton®

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

A. Appearance

Physical state : Liquid.

Color : Not available.

B. Odor : Characteristic.

C. Odor threshold : Not available.

D. pH : Not applicable.

E. Melting/freezing point : Not available.

F. Boiling point/boiling range : >37.78°C (>100°F)

G. Flash point : Closed cup: 21°C (69.8°F)

H. Evaporation rate : Not available.

I. Flammability (solid, gas) : Not available.

J. Lower and upper explosive (flammable) limits : Not available.

K. Vapor pressure :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
dimethyl carbonate	56.78	7.6	OECD 104			

L. Solubility(ies) :

Media	Result
cold water	Not soluble

Solubility in water : Not available.

M. Vapor density : Not available.

N. Relative density : 1.16

O. Partition coefficient: n-octanol/water : Not applicable.

P. Auto-ignition temperature :

Ingredient name	°C	°F	Method
Solvent naphtha (petroleum), heavy arom.	220 to 250	428 to 482	ASTM E 659

Q. Decomposition temperature : Not available.

R. Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): >21 mm²/s (>21 cSt)

Flow time (ISO 2431) : Not available.

S. Molecular weight : Not applicable.

Section 10. Stability and reactivity

- A. Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- B. Conditions to avoid** : When exposed to high temperatures may produce hazardous decomposition products.
- C. Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
- D. Hazardous decomposition products** : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides Formaldehyde. metal oxide/oxides

Section 11. Toxicological information

- A. Information on the likely routes of exposure** : Not available.

Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Eye contact** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Eye contact** : No specific data.

B. Health hazards

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Dimethyl carbonate	LC50 Inhalation Vapor	Rat	140000 mg/m ³	4 hours
	LD50 Dermal	Rabbit	2.5 g/kg	-
	LD50 Oral	Rat	12.9 g/kg	-
Aluminum	LC50 Inhalation Dusts and mists	Rat	>5 mg/l	4 hours
	LD50 Oral	Rat	>15900 mg/kg	-
SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC	LC50 Inhalation Dusts and mists	Rat	>5.2 mg/l	4 hours
	LD50 Oral	Rat	>5 g/kg	-
Xylene	LD50 Dermal	Rabbit	1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
ethylbenzene	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
1-Nitropropane	LD50 Oral	Rat	0.455 g/kg	-
zinc oxide	LC50 Inhalation Dusts and mists	Rat	>5700 mg/m ³	4 hours
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
SOLVENT NAPHTHA (PETROLEUM), LIGHT AROMATIC	LD50 Dermal	Rabbit	3.48 g/kg	-
	LD50 Oral	Rat	8400 mg/kg	-
1,2,4-TRIMETHYLBENZENE	LC50 Inhalation Vapor	Rat	18000 mg/m ³	4 hours
	LD50 Oral	Rat	5 g/kg	-

Conclusion/Summary : There are no data available on the mixture itself.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Xylene	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Eyes : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Sensitization

Conclusion/Summary

Skin : There are no data available on the mixture itself.

Respiratory : There are no data available on the mixture itself.

Mutagenicity

Conclusion/Summary : There are no data available on the mixture itself.

Carcinogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Reproductive toxicity

Conclusion/Summary : There are no data available on the mixture itself.

Section 11. Toxicological information

Teratogenicity

Conclusion/Summary : There are no data available on the mixture itself.

Specific target organ toxicity (single exposure)

Name	Classification	Route of exposure	Target organs
Xylene	Category 3	-	Narcotic effects
FLUX-CALCINED DIATOMACEOUS EARTH	Category 3	-	Respiratory tract irritation
1,2,4-TRIMETHYLBENZENE	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Classification	Route of exposure	Target organs
Aluminum	Category 2	-	-
Xylene	Category 1	-	central nervous system (CNS), kidneys, liver
1,2,4-TRIMETHYLBENZENE	Category 2	-	-

Aspiration hazard

Name	Result
SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC ethylbenzene	ASPIRATION HAZARD - Category 1
SOLVENT NAPHTHA (PETROLEUM), LIGHT AROMATIC	ASPIRATION HAZARD - Category 1

Potential chronic health effects

- General** : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : May cause genetic defects.
- Reproductive toxicity** : Suspected of damaging fertility or the unborn child.

Additional information

Prolonged or repeated contact may dry skin and cause irritation. Sanding and grinding dusts may be harmful if inhaled. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. Contains a substance that may emit formaldehyde if stored beyond its shelf life and/or during cure at curing temperatures greater than 60C (140F). Avoid contact with skin and clothing.

Section 11. Toxicological information

Chemical name	Identifiers	GHS Classification
Dimethyl carbonate	CAS: 616-38-6 EC: 210-478-4	FLAMMABLE LIQUIDS - Category 2 TOXIC TO REPRODUCTION - Category 2
Aluminum	CAS: 7429-90-5 EC: 231-072-3	FLAMMABLE SOLIDS - Category 1 PYROPHORIC SOLIDS - Category 1 SUBSTANCES AND MIXTURES, WHICH IN CONTACT WITH WATER, EMIT FLAMMABLE GASES - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 1 FLAMMABLE LIQUIDS - Category 4
SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC	CAS: 64742-94-5 EC: 265-198-5	ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
Xylene	CAS: 1330-20-7 EC: 215-535-7	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
ethylbenzene	CAS: 100-41-4 EC: 202-849-4	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 CARCINOGENICITY - Category 2 ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
1-Nitropropane	CAS: 108-03-2 EC: 203-544-9	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
FLUX-CALCINED DIATOMACEOUS EARTH	CAS: 68855-54-9	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
zinc oxide	EC: 272-489-0 CAS: 1314-13-2 EC: 215-222-5 CAS: 64742-95-6	AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1 FLAMMABLE LIQUIDS - Category 3
SOLVENT NAPHTHA (PETROLEUM), LIGHT AROMATIC	EC: 265-199-0	SKIN IRRITATION - Category 2 GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1B ASPIRATION HAZARD - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
1,2,4-TRIMETHYLBENZENE	CAS: 95-63-6 EC: 202-436-9	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Section 11. Toxicological information

AQUATIC HAZARD (LONG-TERM) - Category 2

Section 12. Ecological information

A. Ecotoxicity

Product/ingredient name	Result	Species	Exposure
Dimethyl carbonate SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC ethylbenzene	Acute LC50 >100 mg/l NOEL 0.48 mg/l Fresh water	Fish Daphnia	96 hours 21 days
zinc oxide	Acute EC50 1.8 mg/l Fresh water Chronic NOEC 1 mg/l Fresh water Acute EC50 0.17 mg/l Acute EC50 0.481 mg/l Fresh water	Daphnia Daphnia - <i>Ceriodaphnia dubia</i> Algae Daphnia - <i>Daphnia magna</i> - Neonate	48 hours - 72 hours 48 hours
SOLVENT NAPHTHA (PETROLEUM), LIGHT AROMATIC	Chronic NOEC 0.017 mg/l Fresh water Acute LC50 8.2 mg/l	Algae Fish	72 hours 96 hours

B. Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
ethylbenzene	-	79 % - Readily - 10 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Xylene	-	-	Readily
ethylbenzene	-	-	Readily

C. Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Dimethyl carbonate SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC	0.354 2.8 to 6.5	- -	Low High
Xylene	3.12	7.4 to 18.5	Low
ethylbenzene	3.6	79.43	Low
1-Nitropropane	0.79	-	Low
1,2,4-TRIMETHYLBENZENE	3.63	120.23	Low

D. Mobility in soil

Soil/Water partition coefficient : Not available.

E. Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

- A. Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- B. Disposal precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
A. UN number	UN1263	UN1263	UN1263
B. UN proper shipping name	PAINT	PAINT	PAINT
C. Transport hazard class(es)	3	3	3
D. Packing group	II	II	II
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
E. Marine pollutant substances	Not applicable.	(Solvent naphtha (petroleum), heavy aromatic)	Not applicable.

Additional information

UN : None identified.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.

F. Special precaution which a user to be aware of or needs to comply with in connection with transport or transportation

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

A. Regulation according to ISHA

ISHA article 117 : None of the components are listed.

(Harmful substances
prohibited from
manufacture)

ISHA article 118 : None of the components are listed.

(Harmful substances
requiring permission)

Article 2 of Youth Protection
Act on Substances Hazardous
to Youth : It is not allowed to sell to persons under the age of 19.

Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

ISHA Enforcement Regs : None of the components are listed.

Annex 19 (Exposure
standards established
for harmful factors)

ISHA Enforcement Regs : The following components are listed: aluminum and its compounds, xylene, ethyl
Annex 11-5 (Harmful
factors subject to Work
benzene, mica, zinc oxide
Environment
Measurement)

ISHA Enforcement Regs : The following components are listed: Aluminum and its compounds, Xylene, Ethyl
Annex 22 (Harmful
benzene, mica, Zinc oxide
Factors Subject to
Special Health Check-
up)

Standard of Industrial : The following components are listed: aluminum and its compounds, xylene, ethyl
Safety and Health
benzene, mica, zinc and its compounds
Annex 12 (Hazardous
substances subject to
control)

B. Regulation according to Chemicals Control Act

Article 11 (TRI) : The following components are listed: Aluminium and its compounds, Xylene
including o-,m-,p- isomer, Ethylbenzene, Zinc and its compounds

Article 18 Prohibited (K- : None of the components are listed.

Reach Article 27)

Article 19 Subject to : None of the components are listed.

authorization (K-Reach
Article 25)

Article 20 Restricted (K- : None of the components are listed.

Reach Article 27)

Article 20 Toxic : Not applicable

Chemicals (K-Reach
Article 20)

Korea inventory : All components are listed or exempted.

Article 39 (Accident : None of the components are listed.

Precaution Chemicals)

Section 15. Regulatory information

- C. [Dangerous Materials](#)** : **Class:** Class 4 - Flammable Liquid
[Safety Management Act](#) **Item:** 4. Class 2 petroleum - Water-insoluble liquid
Threshold: 1000 L
Danger category: III
Signal word: Contact with sources of ignition prohibited
- D. [Wastes regulation](#)** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- E. [Regulation according to other foreign laws](#)**
[Safety, health and environmental regulations specific for the product](#) : No known specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information

- A. [References](#)** : Korean Ministry of Environment; Chemical Control Act
Korean Ministry of Labor; Industrial Safety and Health Act
NIER Notice
Registry of Toxic Effects of Chemical Substances (RTECS)
U.S. Environmental Protection Agency, AQUIRE (Aquatic toxicity Information Retrieval) ECOTOX Database System.
- B. [First issue date](#)** : 4/20/2025
- C. [Date of issue/Date of revision](#)** : **4/20/2025**
- D. [Version](#)** : **1**
[Prepared by](#) : EHS
- E. [Other](#)**

Indicates information that has changed from previously issued version.

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