

SAFETY DATA SHEET

AMERCOAT 450 GL HARDENER



Date of issue 3 March 2025

Version 16

1. Product and company identification

Product name : AMERCOAT 450 GL HARDENER

Product code : 00280749

Product type : Liquid.

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 : Not applicable.

Supplier's details : PPG PMC Japan Co., Ltd., 8F, Shintetsu Bldg., 1-1, Daikaidori 1-chome, Kobe
652-0803 Japan; Tel: +81-78-574-2777

Emergency telephone
number : 078 574 2777

2. Hazards identification

GHS Classification :  FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract
irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) -
Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
ASPIRATION HAZARD - Category 1
HAZARDOUS TO THE AQUATIC ENVIRONMENT - ACUTE HAZARD - Category 2
HAZARDOUS TO THE AQUATIC ENVIRONMENT - CHRONIC HAZARD -
Category 2

GHS label elements

Hazard pictograms



Signal word

: Danger

2. Hazards identification

Hazard statements	<ul style="list-style-type: none">Flammable liquid and vapor.May be fatal if swallowed and enters airways.Causes skin irritation.May cause an allergic skin reaction.Causes serious eye irritation.Harmful if inhaled.May cause allergy or asthma symptoms or breathing difficulties if inhaled.May cause respiratory irritation.May cause drowsiness or dizziness.May cause cancer.May damage fertility or the unborn child.May cause damage to organs. (central nervous system (CNS), kidneys, liver, respiratory organs)Causes damage to organs through prolonged or repeated exposure. (central nervous system (CNS), hearing organs, nervous system, respiratory organs)Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	<ul style="list-style-type: none">Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
Response	<ul style="list-style-type: none">Collect spillage. IF exposed or concerned: Call a POISON CENTER or doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
Storage	<ul style="list-style-type: none">Store locked up. Store in a well-ventilated place. Keep container tightly closed.
Disposal	<ul style="list-style-type: none">Dispose of contents and container in accordance with all local, regional, national and international regulations.
Other hazards which do not result in classification	<ul style="list-style-type: none">Prolonged or repeated contact may dry skin and cause irritation.

3. Composition/information on ingredients

Substance/mixture	: Mixture
CAS number/other identifiers	
CAS number	: Not applicable.
CSCL number	: Not available.

3. Composition/information on ingredients

Ingredient name	%	CAS number	CSCL
Hexamethylene diisocyanate, oligomers (Biuret type)	25 - <50	28182-81-2	7-873
Solvent naphtha (petroleum), light aromatic	15 - <20	64742-95-6	Not available.
1,2,4-Trimethylbenzene	10 - <12.5	95-63-6	3-3427; 3-7
Propylene glycol monomethyl ether acetate	7 - <10	108-65-6	2-3144
Xylene	3 - <5	1330-20-7	3-3; 3-60
Ethyl Benzene	3 - <5	100-41-4	3-28; 3-60
1,3,5-Trimethylbenzene	1 - <2	108-67-8	3-3427; 3-7
propylbenzene	1 - <2	103-65-1	3-21
1,2,3-Trimethylbenzene	1 - <2	526-73-8	3-3427; 3-7
Cumene	0.2 - <0.5	98-82-8	3-22
Hexamethylene diisocyanate	0.2 - <0.5	822-06-0	2-2863

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.

SUB codes represent substances without registered CAS Numbers.

4. First aid measures

Description of necessary first aid measures

- 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.
- 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.
- 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.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : May cause damage to organs following a single exposure in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May cause damage to organs following a single exposure if swallowed. Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

4. First aid measures

- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

- 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)

5. Fire-fighting measures

Extinguishing media

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

- Specific hazards arising from the chemical** : 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 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.

5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
Cyanate and isocyanate.
hydrogen cyanide
- Special protective actions for fire-fighters** : 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.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : 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.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- 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.

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.
- Special provisions** : 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). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter

6. Accidental release measures

drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

7. Handling and storage

Precautions for safe handling

: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. 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 swallow. 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.

Conditions for safe storage

: 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.

Precautions should be taken to minimize exposure to atmospheric humidity or water. CO₂ will be formed, which, in closed containers, could result in pressurization.

8. Exposure controls/personal protection


Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
 1,2,4-trimethylbenzene	Japan Society for Occupational Health (Japan, 5/2023) OEL-M 8 hours: 25 ppm. OEL-M 8 hours: 120 mg/m³.
xylene	Japan Society for Occupational Health (Japan, 5/2023) OEL-M 8 hours: 50 ppm. OEL-M 8 hours: 217 mg/m³.
ethylbenzene	Industrial Safety and Health Act (Japan, 6/2020) [xylene] TWA 8 hours: 50 ppm. Japan Society for Occupational Health (Japan, 5/2023) Absorbed through skin. OEL-M 8 hours: 20 ppm. OEL-M 8 hours: 87 mg/m³. Industrial Safety and Health Act (Japan, 6/2020)

8. Exposure controls/personal protection

mesitylene	TWA 8 hours: 20 ppm. Japan Society for Occupational Health (Japan, 5/2023) OEL-M 8 hours: 25 ppm. OEL-M 8 hours: 120 mg/m ³ .
1,2,3-trimethylbenzene	Japan Society for Occupational Health (Japan, 5/2023) OEL-M 8 hours: 25 ppm. OEL-M 8 hours: 120 mg/m ³ .
cumene	Japan Society for Occupational Health (Japan, 5/2023) Absorbed through skin. OEL-M 8 hours: 50 mg/m ³ . OEL-M 8 hours: 10 ppm. Technical Guideline Concerning the Applications, etc. of Concentration Standard for Preventing Health Hazards (Japan, 6/2024)
hexamethylene-di-isocyanate	TWA 8 hours: 10 ppm. Japan Society for Occupational Health (Japan, 5/2023) Inhalation sensitizer. OEL-M 8 hours: 0.005 ppm. OEL-M 8 hours: 0.034 mg/m ³ . Technical Guideline Concerning the Applications, etc. of Concentration Standard for Preventing Health Hazards (Japan, 6/2024) TWA 8 hours: 0.005 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.

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.

Individual protection measures

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye protection : Chemical splash goggles.

Skin protection

8. Exposure controls/personal protection


- 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** : butyl rubber
- 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.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use an air-fed respirator unless a site-specific assessment determines that an air-fed respirator is not necessary, in which case the results of the risk assessment should be utilized to determine whether respiratory protection is necessary and what type of protection is appropriate. 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.

9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Odor** : Amine-like.
- Boiling point** : >37.78°C (>100°F)
- Flash point** : Closed cup: 39°C (102.2°F)
- Relative density** : 0.99
- Bulk Density (g/cm³)** : 0.99

Solubility(ies) :

Media	Result
 cold water	Not soluble

10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : In a fire, hazardous decomposition products may be produced.
- Incompatible materials** : Keep away from: oxidizing agents, strong alkalis, strong acids, amines, alcohols, water. Uncontrolled exothermic reactions occur with amines and alcohols.

10. Stability and reactivity

Hazardous decomposition products : Depending on conditions, decomposition products may include the following materials: Cyanate and isocyanate. carbon oxides nitrogen oxides hydrogen cyanide

11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene diisocyanate, oligomers (Biuret type)	LD50 Dermal	Rat	>15800 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	-
Propylene glycol monomethyl ether acetate	LC50 Inhalation Vapor	Rat	30 mg/l	4 hours
	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	6190 mg/kg	-
Xylene	LD50 Dermal	Rabbit	1.7 g/kg	-
	LD50 Oral	Rat	4.3 g/kg	-
Ethyl Benzene	LC50 Inhalation Vapor	Rat	17.8 mg/l	4 hours
	LD50 Dermal	Rabbit	17.8 g/kg	-
	LD50 Oral	Rat	3.5 g/kg	-
1,3,5-Trimethylbenzene	LC50 Inhalation Vapor	Rat	24000 mg/m ³	4 hours
	LD50 Oral	Rat	5000 mg/kg	-
propylbenzene	LD50 Oral	Rat	6040 mg/kg	-
1,2,3-Trimethylbenzene	LD50 Oral	Rat	11.4 g/kg	-
Cumene	LC50 Inhalation Vapor	Rat	39000 mg/m ³	4 hours
	LD50 Dermal	Rabbit	12.3 g/kg	-
	LD50 Oral	Rat	2260 mg/kg	-
Hexamethylene diisocyanate	LC50 Inhalation Dusts and mists	Rat	124 mg/m ³	4 hours
	LC50 Inhalation Vapor	Rat	151 mg/m ³	4 hours
	LD50 Dermal	Rabbit	0.57 g/kg	-
	LD50 Oral	Rat	0.71 g/kg	-

Irritation/Corrosion

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

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

11. Toxicological information

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Hexamethylene diisocyanate, oligomers (Biuret type)	Category 3	-	Respiratory tract irritation
Solvent naphtha (petroleum), light aromatic	Category 3	-	Narcotic effects
1,2,4-Trimethylbenzene	Category 3	-	Respiratory tract irritation
-	Category 3	-	Narcotic effects
Propylene glycol monomethyl ether acetate	Category 3	-	Respiratory tract irritation
-	Category 3	-	Narcotic effects
Xylene	Category 1	-	central nervous system (CNS), kidneys, liver, respiratory organs
-	Category 3	-	Narcotic effects
Ethyl Benzene	Category 3	-	Respiratory tract irritation
-	Category 3	-	Narcotic effects
1,3,5-Trimethylbenzene	Category 3	-	Respiratory tract irritation
-	Category 3	-	Narcotic effects
1,2,3-Trimethylbenzene	Category 3	-	Respiratory tract irritation
-	Category 3	-	Narcotic effects
Cumene	Category 1	-	nervous system
-	Category 3	-	Respiratory tract irritation
-	Category 3	-	Narcotic effects
Hexamethylene diisocyanate	Category 1	-	respiratory organs

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
1,2,4-Trimethylbenzene	Category 1	-	central nervous system (CNS), respiratory organs
Xylene	Category 1	-	nervous system, respiratory organs
Ethyl Benzene	Category 1	-	hearing organs, nervous system
1,3,5-Trimethylbenzene	Category 1	-	central nervous system (CNS), respiratory organs
Cumene	Category 2	-	respiratory organs
Hexamethylene diisocyanate	Category 1	-	respiratory organs

Aspiration hazard

Name	Result
Solvent naphtha (petroleum), light aromatic	ASPIRATION HAZARD - Category 1
1,2,4-Trimethylbenzene	ASPIRATION HAZARD - Category 1
Xylene	ASPIRATION HAZARD - Category 1
Ethyl Benzene	ASPIRATION HAZARD - Category 1
1,3,5-Trimethylbenzene	ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1

11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Skin contact** : May cause damage to organs following a single exposure in contact with skin. Causes skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May cause damage to organs following a single exposure if swallowed. Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.

11. Toxicological information

Potential delayed effects : Not available.

Potential chronic health effects

- General** : Causes damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : May damage fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
AMERCOAT 450 GL HARDENER	N/A	10505.8	N/A	14.5	2.5
Hexamethylene diisocyanate, oligomers (Biuret type)	N/A	N/A	N/A	11	1.5
Solvent naphtha (petroleum), light aromatic	8400	3480	N/A	N/A	N/A
1,2,4-Trimethylbenzene	5000	N/A	N/A	18	N/A
Propylene glycol monomethyl ether acetate	6190	N/A	N/A	30	N/A
Xylene	4300	1700	N/A	11	N/A
Ethyl Benzene	3500	17800	N/A	17.8	N/A
1,3,5-Trimethylbenzene	5000	N/A	N/A	24	N/A
propylbenzene	6040	N/A	N/A	N/A	N/A
1,2,3-Trimethylbenzene	11400	N/A	N/A	N/A	N/A
Cumene	2260	12300	N/A	11	N/A
Hexamethylene diisocyanate	710	570	N/A	0.151	0.124

Other information :

Prolonged or repeated contact may dry skin and cause irritation. 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. Based on the properties of the isocyanate components and considering toxicological data on similar mixtures, this mixture may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Repeated exposure may lead to permanent respiratory disability. Moisture-sensitive material. Avoid contact with skin and clothing.

12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Hexamethylene diisocyanate, oligomers (Biuret type)	Acute EC50 >1000 mg/l	Algae - <i>scenedesmus subspicatus</i>	72 hours
	Acute EC50 >100 mg/l	Daphnia - <i>daphnia magna</i>	48 hours
	Acute LC50 >100 mg/l	Fish - <i>Danio rerio (zebra fish)</i>	96 hours
Solvent naphtha (petroleum), light aromatic	Acute LC50 8.2 mg/l	Fish	96 hours
Propylene glycol monomethyl ether acetate	Acute LC50 134 mg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours
Ethyl Benzene	Acute EC50 1.8 mg/l Fresh water	Daphnia	48 hours

12. Ecological information

	Chronic NOEC 1 mg/l Fresh water	Daphnia - <i>Ceriodaphnia dubia</i>	-
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Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Propylene glycol monomethyl ether acetate	-	83 % - Readily - 28 days	-	-
Ethyl Benzene	-	79 % - Readily - 10 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexamethylene diisocyanate, oligomers (Biuret type)	-	-	Not readily
Propylene glycol monomethyl ether acetate	-	-	Readily
Xylene	-	-	Readily
Ethyl Benzene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Hexamethylene diisocyanate, oligomers (Biuret type)	5.54	3.2	Low
1,2,4-Trimethylbenzene	3.63	120.23	Low
Propylene glycol monomethyl ether acetate	1.2	-	Low
Xylene	3.12	7.4 to 18.5	Low
Ethyl Benzene	3.6	79.43	Low
1,3,5-Trimethylbenzene	3.42	186.21	Low
propylbenzene	3.69	-	Low
1,2,3-Trimethylbenzene	3.66	194.98	Low
Cumene	3.55	35.48	Low
Hexamethylene diisocyanate	0.02	-	Low

Mobility in soil

Soil/Water partition coefficient : Not available.

Mobility : Not available.

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


13. Disposal considerations

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. 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

13. Disposal considerations

dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport information

	UN	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL	PAINT RELATED MATERIAL
Transport hazard class(es)	3	3	3
Packing group	III	III	III
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Marine pollutant substances	Not applicable.	 Solvent naphtha (petroleum), light 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.

Special precautions for user : **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.

15. Regulatory information

Fire Service Law

Category	Substance name/Type	Danger category	Signal word	Designated quantity
Category IV	Class II petroleums	III	Flammable - Keep Fire Away	1000 L


Pollutant Release and Transfer Registers (PRTR)

Ingredient name	%	Status	Reference number
 Trimethylbenzene	14	Class 1	691
Xylene	4.8	Class 1	80
Ethylbenzene	4.2	Class 1	53


Industrial Safety and Health Act

Ordinance on the Prevention of the Hazard due to Specified Chemical Substances


15. Regulatory information

Ingredient name	%	Status	Reference number
 ethyl benzene	≤10	Special Organic Solvents	3-3


Substance(s) requiring labelling

Ingredient name	%	Status	Reference number
 Petroleum naphtha	≥10 - ≤20	Listed	330, 2-1142 (2025-04)
Trimethylbenzene	≥10 - ≤20	Listed	404, 2-1426 (2025-04)
1-Methoxy-2-propyl acetate(2026-04)	≤10	Listed	2-610 (2026-04)
Xylene	≤10	Listed	136, 2-426 (2025-04)
Ethylbenzene	≤10	Listed	70, 2-247 (2025-04)
Propylbenzene(2026-04)	≤10	Listed	2-1783 (2026-04)

Chemicals requiring notification

Ingredient name	%	Status	Reference number
 Petroleum naphtha	≥10 - ≤20	Listed	330, 2-1142 (2025-04)
Trimethylbenzene	≥10 - ≤20	Listed	404, 2-1426 (2025-04)
1-Methoxy-2-propyl acetate(2026-04)	≤10	Listed	2-610 (2026-04)
Xylene	≤10	Listed	136, 2-426 (2025-04)
Ethylbenzene	≤10	Listed	70, 2-247 (2025-04)
Propylbenzene(2026-04)	≤10	Listed	2-1783 (2026-04)
Cumene	≤10	Listed	138, 2-437 (2025-04)
Hexamethylene diisocyanate	≤10	Listed	519, 2-1860 (2025-04)

Carcinogens based on Article 577-2 of the Ordinance on ISH

 None of the components are listed.

Mutagen

None of the components are listed.

Corrosive liquid : Not listed

Occupational Safety and Health Law :  Inflammable

15. Regulatory information

Regulations on the Prevention of Tetraalkyl Lead Poisoning : Not listed

Harmful Substances Subject to Obtaining Permission for Manufacturing : Not listed

Harmful Substances, Prohibited for Manufacturing : Not listed

ISHL Enforcement Order Appendix 1 - Dangerous Substances :  flammable


Lead regulation : Not listed

Organic solvents poisoning prevention :  Class 3

Poisonous and Deleterious Substances

None of the components are listed.

Chemical Substances Control Law (CSCL)

Ingredient name	%	Status	Reference number
 1,2,4-Trimethylbenzene	≥10 - ≤20	Priority assessment	49
Xylene	≤10	Priority assessment	125
Ethylbenzene	≤10	Priority assessment	50
1,3,5-Trimethylbenzene	≤10	Priority assessment	201
Cumene	≤10	Priority assessment	126
Toluene	≤10	Priority assessment	46
Benzene	≤10	Priority assessment	45
Naphthalene	≤10	Priority assessment	76

High Pressure Gas Control Law : Not available.

Explosives Control Law

None of the components are listed.

Law concerning prevention of pollution of the ocean : Not available.

Maritime Safety Law

Notification Regulating Transportation of Dangerous Materials by Sea

None of the components are listed.

Container class

None of the components are listed.

JSOH Carcinogen : Group 2B

List of Specially Controlled Industrial Waste : Not listed

Japan inventory : All components are listed or exempted.

Road law : Not available.

16. Other information

History

Date of issue/Date of revision : 3 March 2025

Date of previous issue : 5/21/2021

Version : 16

Prepared by : EHS

Key to abbreviations : ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
UN = United Nations

▀ Indicates information that has changed from previously issued version.

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