

SAFETY DATA SHEET

APCOTHERM 600AD ALUMINIUM

BERGER
PAINTS

Section 1. Identification

Product identifier	: APCOTHERM 600AD ALUMINIUM
Product code	: FHR60X090XXX
Other means of identification	: Not available.
Product type	: Liquid.

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

Identified uses

Not applicable.

Uses advised against

Not applicable.

Supplier's details	: Berger Paints Singapore Pte Ltd 22 Benoi Sector, Singapore - 629854 Email: Berger@bergeronline.com.sg Tele: +65 6801 7000 Fax: +65 6265 6356
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Emergency telephone number (with hours of operation)	: Tele: +65 9636 4852
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Section 2. Hazards identification

Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A AQUATIC HAZARD (LONG-TERM) - Category 2 Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 62.1% Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 13%
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GHS label elements, including precautionary statements

Hazard pictograms



Signal word

Hazard statements

- : Warning
- : H226 - Flammable liquid and vapor.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

- : P280 - Wear protective gloves. Wear eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 - Avoid release to the environment.
P261 - Avoid breathing vapor.
P264 - Wash thoroughly after handling.

Section 2. Hazards identification

Response	<ul style="list-style-type: none"> : P391 - Collect spillage. P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell. P302 + P352 - IF ON SKIN: Wash with plenty of water. P362 + P364 - Take off contaminated clothing and wash it before reuse. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
Storage	<ul style="list-style-type: none"> : P391 - Collect spillage. P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell. P302 + P352 - IF ON SKIN: Wash with plenty of water. P362 + P364 - Take off contaminated clothing and wash it before reuse. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
Disposal	<ul style="list-style-type: none"> : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Other hazards which do not result in classification	: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.

Ingredient name	%	Identifiers
Aluminium powder (pyrophoric)	≥10 - <25	CAS: 7429-90-5 EC: 231-072-3
xylene	≥10 - <20	CAS: 1330-20-7 EC: 215-535-7
Naphtha (petroleum), hydrodesulfurized heavy	≥10 - ≤25	CAS: 64742-82-1 EC: 265-185-4
ethylbenzene	≤10	CAS: 100-41-4 EC: 202-849-4
Stoddard solvent, 0-5% aromatic content	≤10	CAS: 8052-41-3 EC: 232-489-3
2-methylpropan-1-ol	≤3	CAS: 78-83-1 EC: 201-148-0

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.

Chemical formula : Not applicable.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
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Section 4. First aid measures

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact

: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

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

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

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

Notes to physician

: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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.

See toxicological information (Section 11)

Section 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.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
metal oxide/oxides
- 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.

Section 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. Absorb with an inert 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. 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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

- Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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.

Advice on general occupational hygiene

- Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

- 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. 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

Control parameters

Occupational exposure limits

None.

Biological exposure indices

No exposure indices known.

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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Section 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.
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	: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

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

Appearance

Physical state	: Liquid.
Color	: Not available.
Odor	: Not available.
Odor threshold	: Not available.
pH	: Not available.
Melting point/freezing point	: Not available.
Boiling point or initial boiling point and boiling range	: Not available.
Flash point	: Closed cup: 29°C (84.2°F)
Evaporation rate	: Not available.
Flammability	: Not available.
Lower and upper explosion limit/flammability limit	: Not available.
Vapor pressure	:

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
methanol	126.96329	16.9				
toluene	23.17	3.1				
2-methylpropan-1-ol	<12.00102	<1.6	DIN EN 13016-2			
ethylbenzene	9.30076	1.2				
xylene	6.7	0.89				
Stoddard solvent, 0-5% aromatic content	0.75006 to 10.50085	0.1 to 1.4				

Relative vapor density : Not available.

Relative density : Not available.

Density : 1.15 g/cm³ [25°C (77°F)]

Section 9. Physical and chemical properties and safety characteristics

Solubility in water : Not available.

Miscible with water : No.

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

Auto-ignition temperature :

Ingredient name	°C	°F	Method
Stoddard solvent, 0-5% aromatic content	230 to 240	446 to 464	
Naphtha (petroleum), hydrodesulfurized heavy	280 to 470	536 to 878	
stearic acid	400	752	
2-methylpropan-1-ol	415	779	
xylene	432	809.6	
ethylbenzene	432.22	810	
methanol	455	851	DIN 51794
toluene	480	896	
Aluminium powder (pyrophoric)	590	1094	

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): Not available.

Particle characteristics

Median particle size : Not applicable.

Section 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 : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SADT : Not available.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name

Result

Section 11. Toxicological information

xylene	Rat - Oral - LD50 4300 mg/kg <u>Toxic effects:</u> Liver - Other changes Kidney, Ureter, and Bladder - Other changes
ethylbenzene	Rat - Inhalation - LC50 Gas. 5000 ppm [4 hours]
2-methylpropan-1-ol	Rat - Oral - LD50 3500 mg/kg <u>Toxic effects:</u> Liver - Other changes Kidney, Ureter, and Bladder - Other changes

Conclusion/Summary [Product] : Not available.

Skin corrosion/irritation

Product/ingredient name	Result
xylene	Rat - Skin - Mild irritant <u>Duration of treatment/exposure:</u> 8 hours <u>Amount/concentration applied:</u> 60 uL
ethylbenzene	Rabbit - Skin - Moderate irritant <u>Duration of treatment/exposure:</u> 24 hours <u>Amount/concentration applied:</u> 500 mg Rabbit - Skin - Moderate irritant <u>Amount/concentration applied:</u> 100 % Rabbit - Skin - Mild irritant <u>Duration of treatment/exposure:</u> 24 hours <u>Amount/concentration applied:</u> 15 mg

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
xylene	Rabbit - Eyes - Mild irritant <u>Amount/concentration applied:</u> 87 mg
ethylbenzene	Rabbit - Eyes - Severe irritant <u>Duration of treatment/exposure:</u> 24 hours <u>Amount/concentration applied:</u> 5 mg Rabbit - Eyes - Severe irritant <u>Amount/concentration applied:</u> 500 mg Human - Eyes - Mild irritant <u>Amount/concentration applied:</u> 100 ppm Rabbit - Eyes - Moderate irritant <u>Duration of treatment/exposure:</u> 24 hours <u>Amount/concentration applied:</u> 500 mg

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Section 11. Toxicological information

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name

xylene

Result

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)
(Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Product/ingredient name

xylene

Result

ASPIRATION HAZARD - Category 1

Naphtha (petroleum), hydrodesulfurized

ASPIRATION HAZARD - Category 1

heavy

ASPIRATION HAZARD - Category 1

ethylbenzene

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

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

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

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.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product] : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

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)
APCOTHERM 600AD ALUMINIUM	N/A	3229.3	12178.7	727.7	N/A
xylene	4300	1100	5000	N/A	N/A
ethylbenzene	3500	N/A	N/A	N/A	N/A
2-methylpropan-1-ol	2460	3400	N/A	19.2	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name

Aluminium powder (pyrophoric)

Result

Acute - LC50 - Fresh water

Fish - Rainbow trout, donaldson trout - *Oncorhynchus mykiss* - Embryo

120 µg/l [96 hours]

Effect: Mortality

Chronic - NOEC - Fresh water

Aquatic plants - Coontail - *Ceratophyllum demersum*

Weight: 3.5 g

Section 12. Ecological information

xylene

9 mg/l [3 days]

Effect: Enzymes**Acute - LC50 - Fresh water**Daphnia - Water flea - *Daphnia magna*

38000 µg/l [48 hours]

Effect: Mortality**Acute - LC50 - Marine water**Crustaceans - Daggerblade grass shrimp - *Palaeomonetes pugio*

8500 µg/l [48 hours]

Effect: Mortality**Acute - LC50 - Fresh water**Fish - Fathead minnow - *Pimephales promelas*Age: 31 days; Size: 18.4 mm; Weight: 0.077 g

13400 µg/l [96 hours]

Effect: Mortality**Acute - LC50 - Fresh water**Fish - Rainbow trout, donaldson trout - *Oncorhynchus mykiss*

4200 µg/l [96 hours]

Effect: Mortality**Acute - EC50 - Marine water**Algae - Diatom - *Skeletonema costatum*

4900 µg/l [72 hours]

Effect: Population**Acute - EC50 - Fresh water**Daphnia - Water flea - *Daphnia magna* - NeonateAge: ≤24 hours

2.93 mg/l [48 hours]

Effect: Intoxication**Acute - LC50 - Fresh water**Fish - Rainbow trout, donaldson trout - *Oncorhynchus mykiss*Weight: 1.67 g

1330000 µg/l [96 hours]

Effect: Mortality**Chronic - NOEC - Fresh water**Daphnia - Water flea - *Daphnia magna*Age: ≤24 hours

4 mg/l [21 days]

Effect: Reproduction**Acute - LC50 - Marine water**Crustaceans - Brine shrimp - *Artemia salina*

600 mg/l [48 hours]

Effect: Mortality

2-methylpropan-1-ol

Conclusion/Summary [Product]

: Not available.

Persistence and degradability

Not available.

Conclusion/Summary [Product]

: Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
xylene	3.12	8.1 to 25.9	Low
Naphtha (petroleum), hydrodesulfurized heavy	-	10 to 2500	High
ethylbenzene	3.6	-	Low
Stoddard solvent, 0-5% aromatic content	3.16 to 7.06	-	High
2-methylpropan-1-ol	1	-	Low

Section 12. Ecological information

Mobility in soil

Soil/Water partition coefficient : Not available.

Other adverse effects

No known significant effects or critical hazards.

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

Section 14. Transport information

	UN	IMDG	IATA	ADR/RID	ADN
UN number	UN1263	UN1263	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3  	3 	3  	3  
Packing group	III	III	III	III	III
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes.

Additional information

- 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.
- ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤ 5 L or ≤ 5 kg.
- Tunnel code (D/E)**
- ADN** : The environmentally hazardous substance mark is not required when transported in sizes of ≤ 5 L or ≤ 5 kg.

Section 14. Transport information

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 available.

Section 15. Regulatory information

Singapore - hazardous chemicals under government control

None.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Eurasian Economic Union	: Russian Federation inventory: Not determined.
Japan	: Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: Not determined.

Section 16. Other information

History

Date of printing	: 12/31/2025
Date of issue/Date of revision	: 12/31/2025
Date of previous issue	: 1/10/2023
Version	: 1.10

Section 16. Other information

Key to abbreviations

: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 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)
 N/A = Not available
 SGG = Segregation Group
 UN = United Nations

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	On basis of test data
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

References : Not available.

☒ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.