

# SAFETY DATA SHEET



## Hardtop F15 HS Alu Comp A

SDS Number: ~~AA~~A00319-000000430

In accordance with the Standard for Classification and Labeling of Chemical Substance and Safety Data Sheet,  
Article 10 Paragraph 1

### Section 1. Chemical product and company identification

**A. Product name** : Hardtop F15 HS Alu Comp A  
**Product code** : 53222  
**Product description** : Paint.

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

**Identified uses**

Use in coatings - Industrial use

**C. Manufacturer** : Chokwang Jotun Ltd.  
96, Gwahaksandan 1-ro  
Gangseo-gu, Busan  
South Korea  
Tel: +82 51 797 6000  
Fax: +82 51 711 7735  
SDSJotun@jotun.com

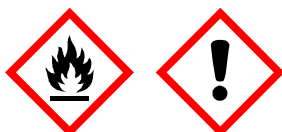
**Emergency telephone number** : H.G.LEE Chokwang Jotun Ltd.  
Tel: +82 51 797 6000

### Section 2. Hazards identification

**A. Hazard classification** : FLAMMABLE LIQUIDS - Category 3  
SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
SKIN SENSITISATION - Category 1  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3  
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3  
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** :

Warning.

## Section 2. Hazards identification

- Hazard statements** : H226 - Flammable liquid and vapour.  
 H315 - Causes skin irritation.  
 H317 - May cause an allergic skin reaction.  
 H319 - Causes serious eye irritation.  
 H335 - May cause respiratory irritation.  
 H336 - May cause drowsiness or dizziness.  
 H412 - Harmful to aquatic life with long lasting effects.
- Precautionary statements**
- Prevention** : 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.  
 P271 - Use only outdoors or in a well-ventilated area.  
 P273 - Avoid release to the environment.  
 P261 - Avoid breathing vapour.  
 P264 - Wash hands thoroughly after handling.  
 P272 - Contaminated work clothing should not be allowed out of the workplace.
- Response** : P304 + P340, P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.  
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
 P302 + P352 - IF ON SKIN: Wash with plenty of water.  
 P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.  
 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** : P405 - Store locked up.  
 P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
- 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** : None known.

## Section 3. Composition/information on ingredients

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

Ingredient name	Common name	Identifiers	%
Ethene, 1-chloro-1,2,2-trifluoro-, polymer with 1,1-difluoroethene	fluorocarbon resin	CAS: 9010-75-7	≥35 - ≤40
n-butyl acetate	n-butyl acetate	CAS: 123-86-4	≥25 - ≤30
aluminium powder (stabilised)	aluminium powder, stabilized	CAS: 7429-90-5	≤5
4-methylpentan-2-one	methyl isobutyl ketone	CAS: 108-10-1	≤5
propanoic acid, 3-ethoxy-, ethyl ester	ethyl 3-ethoxy propionate	CAS: 763-69-9	≤5
hydrocarbons, C9, aromatics	hydrocarbons, C9, aromatics	CAS: 64742-95-6	≤3
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	White spirit, h.f. d.a.(<1% aromates)	CAS: 64742-48-9	≤3
12-hydroxyoctadecanoic acid, reaction	12-hydroxyoctadecanoic	CAS: 220926-97-6	≤3

### Section 3. Composition/information on ingredients

products with 1,3-benzenedimethanamine and hexamethylenediamine	acid, reaction products with 1,3-		
3-aminopropyltriethoxysilane	3-aminopropyltriethoxysilane	CAS: 919-30-2	<3
decanedioic acid, 1,10-bis (1,2,2,6,6-pentamethyl-4-piperidiny) ester, mixt. with 1-methyl 10-(1,2,2,6,6-pentamethyl-4-piperidiny) decanedioate	Reaction mass of bis (1,2,2,6,6-pentamethyl-4-piperidyl) sebacate and methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	CAS: 82919-37-7, 41556-26-7	≤1

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** : 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.
- B. Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- C. 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 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. 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.
- D. 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 necessary, call a poison center or physician. 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.
- 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. Firefighting measures

### A. Extinguishing media

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

**B. Specific hazards arising from the chemical** : Flammable liquid and vapour. 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 harmful 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  
nitrogen oxides  
halogenated compounds  
metal oxide/oxides

**C. 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.

**Special precautions 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.

## 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**B. Environmental precautions** : Avoid dispersal of spilt 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.

### C. Methods and material 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 the 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 spilt 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

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour 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.

- B. 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. Store locked up. Eliminate all ignition sources. Separate from oxidising 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 unlabelled 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. Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
n-butyl acetate	<b>Ministry of Employment and Labor (Republic of Korea, 1/2020).</b> STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours.
4-methylpentan-2-one	<b>Ministry of Employment and Labor (Republic of Korea, 1/2020).</b> STEL: 75 ppm 15 minutes. TWA: 50 ppm 8 hours.

- 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, vapour 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** : If workers are exposed to concentrations above the exposure limit, they must use a respirator according to EN 140. Use respiratory mask with charcoal and dust filter when spraying this product, according to EN 14387(as filter combination A2-P2). In confined spaces, use compressed-air or fresh-air respiratory equipment. When use of roller or brush, consider use of charcoalfilter.

## Section 8. Exposure controls/personal protection

- Eye protection** : Use safety eyewear designed to protect against splash of liquids.
- Hand protection** : There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals. The breakthrough time must be greater than the end use time of the product. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance. Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred. Wear suitable gloves tested to ISO 374-1:2016. Recommended, gloves(breakthrough time) > 8 hours: Teflon (> 0.35 mm), polyvinyl alcohol (PVA) (> 0.3 mm) Not recommended, gloves(breakthrough time) < 1 hour: Viton® (> 0.7 mm), PVC (> 0.5 mm) May be used, gloves(breakthrough time) 4 - 8 hours: 4H/Silver Shield® (> 0.07 mm), neoprene (> 0.35 mm), butyl rubber (> 0.4 mm), nitrile rubber (> 0.75 mm)
- For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.
- 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. 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.

## 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.
- Colour** : Aluminium
- B. Odour** : Characteristic.
- C. Odour threshold** : Not applicable.
- D. pH** : Not applicable.
- E. Melting/freezing point** : Not applicable.
- F. Boiling point, initial boiling point, and boiling range** : Lowest known value: 116.5°C (241.7°F) (4-methylpentan-2-one). Weighted average: 134.88°C (274.8°F)
- G. Flash point** : Closed cup: 27°C
- H. Evaporation rate** : Highest known value: 1.7 (4-methylpentan-2-one) Weighted average: 0.99 compared with butyl acetate
- I. Flammability (solid, gas)** : Not applicable.

## Section 9. Physical and chemical properties

- J. Lower and upper explosive (flammable) limits** : 1.05 - 9.8%
- K. Vapour pressure** : Highest known value: 2.1 kPa (15.8 mm Hg) (at 20°C) (4-methylpentan-2-one).  
Weighted average: 1.32 kPa (9.9 mm Hg) (at 20°C)
- L. Solubility** : cold water Not soluble  
hot water Not soluble
- M. Vapour density** : Highest known value: 4 (Air = 1) (n-butyl acetate). Weighted average: 3.93 (Air = 1)
- N. Relative density** : 1.093 g/cm<sup>3</sup>
- O. Partition coefficient: n-octanol/water** : Not available.
- P. Auto-ignition temperature** : Lowest known value: 280 to 470°C (536 to 878°F) (hydrocarbons, C9, aromatics).
- Q. Decomposition temperature** : Not available.
- R. Viscosity** : Kinematic (40°C (104°F)): <20.5 mm<sup>2</sup>/s (<20.5 cSt)
- S. Molecular weight** : Not applicable.

### Particle characteristics

- Median particle size** : 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** : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- C. Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.
- D. Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

There are no data available on the mixture itself. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. Ingestion may cause nausea, diarrhea and vomiting.

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

### Potential acute health effects

- Inhalation** : May cause drowsiness or dizziness. May cause respiratory irritation.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Eye contact** : Causes serious eye irritation.

## Section 11. Toxicological information

### Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness
- Ingestion** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

### B. Health hazards

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
n-butyl acetate	LC50 Inhalation Vapour	Rat	>21.1 mg/l	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LD50 Oral	Rat	13100 mg/kg	-
propanoic acid, 3-ethoxy-, ethyl ester	LD50 Oral	Rat	3200 mg/kg	-
	LD50 Oral	Rat	1780 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Ethene, 1-chloro-1,2,2-trifluoro-, polymer with 1,1-difluoroethene	Eyes - Mild irritant	Mammal - species unspecified	-	-	-
	Skin - Mild irritant	Mammal - species unspecified	-	-	-
4-methylpentan-2-one	Eyes - Mild irritant	Mammal - species unspecified	-	-	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters	-
	Eyes - Severe irritant	Rabbit	-	40 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
propanoic acid, 3-ethoxy-, ethyl ester	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

#### Sensitisation

Not available.

#### CMR - ISHA Article 42 Occupational Exposure Limits

Product/ingredient name	Identifiers	Classification
Hexone	CAS: 108-10-1	CARCINOGENICITY - Category 2

#### Mutagenicity

**Conclusion/Summary** : No known significant effects or critical hazards.

#### Carcinogenicity



## Section 11. Toxicological information

**Conclusion/Summary** : No known significant effects or critical hazards.

### Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH
aluminium powder (stabilised)	-	-	-	A4
4-methylpentan-2-one	-	2B	-	A3

### Reproductive toxicity

Not available.

### Teratogenicity

**Conclusion/Summary** : No known significant effects or critical hazards.

### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Ethene, 1-chloro-1,2,2-trifluoro-, polymer with 1,1-difluoroethene	Category 3	-	Respiratory tract irritation
n-butyl acetate	Category 3	-	Narcotic effects
4-methylpentan-2-one	Category 3	-	Narcotic effects
hydrocarbons, C9, aromatics	Category 3	-	Respiratory tract irritation
	Category 3	-	Respiratory tract irritation Narcotic effects

### Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine	Category 2	-	-

### Aspiration hazard

Product/ingredient name	Result
hydrocarbons, C9, aromatics	ASPIRATION HAZARD - Category 1
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	ASPIRATION HAZARD - Category 1

### Potential chronic health effects

#### Chronic toxicity

**General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**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 (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)

## Section 11. Toxicological information

Hardtop F15 HS Alu Comp A	178000.0	N/A	N/A	26.0	131.6
Ethene, 1-chloro-1,2,2-trifluoro-, polymer with 1,1-difluoroethene	N/A	N/A	N/A	11	N/A
n-butyl acetate	13100	N/A	N/A	N/A	N/A
4-methylpentan-2-one	2080	N/A	N/A	11	N/A
propanoic acid, 3-ethoxy-, ethyl ester	3200	N/A	N/A	N/A	N/A
12-hydroxyoctadecanoic acid, reaction products with 1,3-benzenedimethanamine and hexamethylenediamine	N/A	N/A	N/A	N/A	1.5
3-aminopropyltriethoxysilane	1780	N/A	N/A	N/A	N/A

## Section 12. Ecological information

### A. Ecotoxicity

This material is harmful to aquatic life with long lasting effects.

Product/ingredient name	Result	Species	Exposure
aluminium powder (stabilised)	Acute LC50 38000 µg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 1130 µg/l Fresh water	Fish - Cobitidae - Fry	96 hours
	Chronic NOEC 9 mg/l Fresh water	Aquatic plants - Ceratophyllum demersum	3 days
4-methylpentan-2-one	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days
propanoic acid, 3-ethoxy-, ethyl ester	Acute EC50 480 mg/l	Daphnia	48 hours
	Acute LC50 50 mg/l	Fish	96 hours
hydrocarbons, C9, aromatics	Acute EC50 <10 mg/l	Daphnia	48 hours
	Acute IC50 <10 mg/l	Algae	72 hours
decanedioic acid, 1,10-bis (1,2,2,6,6-pentamethyl-4-piperidinyl) ester, mixt. with 1-methyl 10-(1,2,2,6,6-pentamethyl-4-piperidinyl) decanedioate	Acute LC50 <10 mg/l	Fish	96 hours
	Acute EC50 1.68 mg/l	Algae	96 hours
	Acute LC50 0.9 mg/l Chronic NOEC 1 mg/l	Fish Daphnia	96 hours 21 days

### B. Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
hydrocarbons, C9, aromatics	-	-	Not readily

### C. Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
n-butyl acetate	2.3	-	low
4-methylpentan-2-one	1.9	-	low
propanoic acid, 3-ethoxy-, ethyl ester	1.47	-	low
hydrocarbons, C9, aromatics	-	10 to 2500	high
hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	-	10 to 2500	high
3-aminopropyltriethoxysilane	1.7	3.4	low

### D. Mobility in soil

## Section 12. Ecological information

**Soil/water partition coefficient (K<sub>oc</sub>)** : 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 minimised 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. Vapour 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	UN	IMDG	IATA
<b>A. UN number</b>	UN1263	UN1263	UN1263
<b>B. UN proper shipping name</b>	Paint	Paint	Paint
<b>C. Transport hazard class(es)</b>	3 	3 	3 
<b>D. Packing group</b>	III	III	III
<b>E. Environmental hazards</b>	No.	No.	No.

### Additional information

**IMDG** : **Emergency schedules** F-E, S-E  
**ADR/RID** : **Hazard identification number** 30  
**Tunnel code** (D/E)

**F. 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.

Transport in accordance with ADR/RID, IMDG/IMO and ICAO/IATA and national regulation.

## Section 15. Regulatory information

### A. Regulation according to ISHA

**ISHA article 117 (Harmful substances prohibited from manufacture)** : None of the components are listed.

**ISHA article 118 (Harmful substances requiring permission)** : None of the components are listed.

**Article 2 of Youth Protection Act on Substances Hazardous to Youth** : Not applicable.

### Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

n-butyl acetate

4-methylpentan-2-one

**ISHA Enforcement Regs Annex 19 (Exposure standards established for harmful factors)** : None of the components are listed.

**ISHA Enforcement Regs Annex 21 (Harmful factors subject to Work Environment Measurement)** : The following components are listed: n-butyl acetate, aluminum and its compounds, methyl isobutyl ketone

**ISHA Enforcement Regs Annex 22 (Harmful Factors Subject to Special Health Check-up)** : The following components are listed: Aluminum and its compounds, Methyl isobutyl ketone

**Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control)** : The following components are listed: n-butyl acetate, aluminum and its compounds, methyl isobutyl ketone

### B. Regulation according to Chemicals Control Act

**AREC Article 17 (TRI)** : The following components are listed: Aluminium and its compounds

**AREC Article 32 (Banned)** : None of the components are listed.

**Article 19 Subject to authorization (K-Reach Article 25)** : None of the components are listed.

**AREC Toxic chemicals** : Not applicable

**AREC Article 32 (Restricted)** : None of the components are listed.

**CCA Article 39 (Accident Precaution Chemicals)** : None of the components are listed.

**Existing Chemical Substances Subject to Registration** : None of the components are listed.

## Section 15. Regulatory information

- C. Dangerous Materials Safety Management Act** : **Class:** Class 4 - Flammable Liquid  
**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**
- 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.

## Section 16. Other information

- A. References** : - Registry of Toxic Effects of Chemical Substances  
 - United States Environmental Protection Agency ECOTOX
- B. Date of issue** : 25.01.2022  
**Date of revision** : 29.01.2024
- C. Version** : 1.02  
**Date of printing** : **29.01.2024**
- D. Other**

✔ Indicates information that has changed from previously issued version.

- 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

### Notice to reader

The information in this document is given to the best of Jotun's knowledge, based on laboratory testing and practical experience. Jotun's products are considered as semi-finished goods and as such, products are often used under conditions beyond Jotun's control. Jotun cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with local requirements. Jotun reserves the right to change the given data without further notice.

Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.