SAFETY DATA SHEET

Aluminium Paint H.R.

(In accordance with Article 10 Paragraph 1, Industrial Safety and Health Act)

Section 1. Chemical product and company identification

A. Product name : Aluminium Paint H.R.

Label No. : 345

B. Recommended use of the chemical

Sector of Use	Chemical Product Category	Process Category	Article Category	Environmental Release Category
Industrial uses: Uses of substances as such or in preparations at industrial sites Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact) Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Roller application or brushing Non industrial spraying		Wide dispersive indoor use of processing aids in open systems Wide dispersive outdoor use of processing aids in open systems

Restrictions on use

None identified.

C. Supplier/Manufacturer : Chokwang Jotun Ltd.
30th Block Jisa Science Park 1205 Jisa-Dong
Gangseo-ku, 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
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Narcotic effects] - Category 3
AQUATIC TOXICITY (CHRONIC) - Category 2

B. GHS label elements, including precautionary statements

Symbol :

Signal word : Warning

Hazard statements : Flammable liquid and vapour.
May cause drowsiness or dizziness.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Avoid release to the environment.

Section 2. Hazards identification

Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Storage : Keep cool.

Disposal : Not applicable.

C. Other hazards which do not result in classification : Not available.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	Synonym	CAS number	%
Naphtha (petroleum), hydrodesulfurized heavy		64742-82-1	30-40
xylene	Benzene, dimethyl-; Benzene, dimethyl-, mixed isomers, >=25% in a non hazardous diluent; Benzene, dimethyl-, mixed isomers; Xylol	1330-20-7	2.5-10
hexanoic acid, 2-ethyl-, cobalt(2+) salt	Hexanoic acid, 2-ethyl-, cobalt(2+) salt (2:1); Hexanoic acid, 2-ethyl-, cobalt(2++) salt; Hexanoic acid, 2-ethyl-, cobalt(2+) salt; Cobalt octoate	136-52-7	0.1-1
2-butanone oxime	ethyl methyl ketone oxime; ethyl methyl ketoxime; butanone oxime; 2-Butanone, oxime; METHYL ETHYL KETOXIME; Methylethyl ketoxime	96-29-7	0.1-1

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 if irritation occurs.

B. Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. 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.

D. Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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

Section 4. First-aid measures

as a collar, tie, belt or waistband.

E. Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Ingestion : Can cause central nervous system (CNS) depression.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

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

Specific treatments : Not available.

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

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

A. Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

B. Specific hazards arising from the chemical : Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. 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
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.

Section 6. Accidental release measures

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. Collect spillage.

C. Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. 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. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. 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). Use spark-proof tools and explosion-proof equipment. 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 : Put on appropriate personal protective equipment (see Section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. 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.

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 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

A. Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Naphtha (petroleum), hydrodesulfurized heavy	**Ministry of Labor (Republic of Korea, 5/2002).** TWA: 525 mg/m³ 8 hour(s). Form: All forms TWA: 100 ppm 8 hour(s). Form: All forms
xylene	**Ministry of Labor (Republic of Korea, 3/2011).** STEL: 655 mg/m³ 15 minute(s). STEL: 150 ppm 15 minute(s). TWA: 435 mg/m³ 8 hour(s). TWA: 100 ppm 8 hour(s).

Section 8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

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 appropriate, certified respirators. Use respiratory mask with charcoal and dust filter when spraying this product.(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.

Hand protection : For prolonged or repeated handling, use the following type of gloves: gloves: polyvinyl alcohol or nitrile.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

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.

Eye protection : Use safety eyewear designed to protect against splash of liquids.

Skin protection : Personnel should wear antistatic clothing made of natural fibres or of high-temperature-resistant synthetic fibres.

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

Section 9. Physical and chemical properties

A. Appearance

Physical state : Liquid.

Colour : Various colours.

B. Odour : Characteristic.

C. Odour threshold : Not available.

D. pH : Not applicable.

E. Melting/freezing point : Not available.

F. Boiling point/boiling range : Not available.

G. Flash point : Closed cup: 36°C (96,8°F)

Burning time : Not applicable.

Burning rate : Not applicable.

H. Evaporation rate : Not available.

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

J. Lower and upper explosive (flammable) limits : 0.6 - 7%

Section 9. Physical and chemical properties

K. Vapour pressure : Not available.

L. Solubility : Insoluble in the following materials: cold water and hot water.

M. Vapour density : Not available.

N. Relative density : Not available.

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

P. Auto-ignition temperature : Not available.

Q. Decomposition temperature : Not available.

SADT : Not available.

R. Viscosity : > 20,5 mm2/s (40 °C)

S. Molecular weight : Not applicable.

Section 10. Stability and reactivity

A. Chemical stability : The product is stable.

B. Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

C. 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.

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

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

Section 11. Toxicological information

A. Information on the likely routes of exposure

Respiratory : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Oral : Can cause central nervous system (CNS) depression.

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

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

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
xylene	LC50 Inhalation Gas. LD50 Oral	Rat Rat	6700 ppm 4300 mg/kg	4 hours -

Irritation/Corrosion

Not available.

Sensitisation

Not available.

Potential chronic health effects

General : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 11. Toxicological information

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Mutagenicity

Not available.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Naphtha (petroleum), hydrodesulfurized heavy	Category 3	Not determined	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
2-butanone oxime	Category 1	Not determined	Not determined

Aspiration hazard

Name	Result
Naphtha (petroleum), hydrodesulfurized heavy	ASPIRATION HAZARD - Category 1

C. ATE value

Route	Result
Dermal Inhalation (vapours)	28376,2 mg/kg 283,8 mg/l

Section 12. Ecological information

A. Aquatic and terrestrial toxicity

Ecotoxicity : Water polluting material. May be harmful to the environment if released in large quantities. This material is toxic to aquatic life with long lasting effects.

Product/ingredient name	Result	Species	Exposure
ethylbenzene	Acute EC50 7,2 mg/L Acute EC50 2,93 mg/L Acute LC50 4,2 mg/L	Algae Daphnia Fish	48 hours 48 hours 96 hours
aluminium stabilized	Acute LC50 120 ug/L Fresh water	Fish - Oncorhynchus mykiss - EMBRYO	96 hours
Naphtha (petroleum), hydrodesulfurized heavy	Acute EC50 <10 mg/L Acute IC50 <10 mg/L Acute LC50 <10 mg/L	Daphnia Algae Fish	48 hours 72 hours 96 hours

B. Persistence/degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Naphtha (petroleum), hydrodesulfurized heavy	-	-	Not readily
xylene	-	-	Readily

C. Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
xylene	3,12	-	low
2-butanone oxime	0,63	5,011872336	low

Section 12. Ecological information

D. Mobility in soil

Soil/water partition coefficient (K_{OC}) : 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. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

B. Disposal precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

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.

International transport regulations

Proper shipping name : Paint.

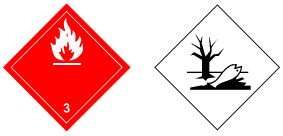
Marine pollutant substances : Naphtha (petroleum), hydrodesulfurized heavy

UN Number : 1263

Class : 3

Packing group : III

Label :



Marking :

The environmental hazardous / marine pollutant mark is only applicable for packages containing more than 5 litres for liquids and 5 kg for solids.

Additional information

ADR / RID : Tunnel restriction code: (D/E)
Hazard identification number: 30
Special provisions: 640E

IMDG : Emergency schedules (EmS): F-E, S-E
Marine pollutant: Yes.

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 37 : None of the components are listed.

ISHA Article 38 : None of the components are listed.

B. Regulation according to TCCA

TCCA Toxic chemicals : Not applicable

Section 15. Regulatory information

TCCA Observational chemicals : None of the components are listed.

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

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

TCCA Article 17 (TRI) : The following components are listed: Aluminium and its compounds; Xylene(including o-,m-,p- isomer); Ethylbenzene; Cobalt and its compounds

Korea inventory : Not determined.

C. Dangerous Materials Control Act : Not available.

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

Europe inventory : Not determined.

United States inventory (TSCA 8b) : Not determined.

Japan inventory : Not determined.

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information

A. References : Not available.

B. Date of issue/Date of revision : 13.02.2013.

C. Version : 1

Date of printing : **13.02.2013.**

D. Other

Indicates information that has changed from previously issued version.

Notice to reader

The information in this SDS is based on the present state of our knowledge and on current laws. The product is not to be used for purposes other than those specified under section 1 without first obtaining written handling instructions. It is always the responsibility of the user to take all necessary steps to fulfil the demands set out in the local rules and legislation. The information in this SDS is meant to be a description of the safety requirements for our product. It is not to be considered a guarantee of the product's properties.