

Marine Emulsion White

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

Section 1. Chemical product and company identification

- A. Product name** : Marine Emulsion White
Label No. : 4480
Product description : Waterborne paint.
Product type : Liquid.

B. Recommended use of the chemical

Identified uses

Uses in Coatings - Industrial use
 Uses in Coatings - Professional use

- C. Supplier/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** : Not classified.
- B. GHS label elements, including precautionary statements**
- Signal word** : No signal word.
Hazard statements : No known significant effects or critical hazards.
Precautionary statements
- Prevention** : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.
- C. Other hazards which do not result in classification** : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	Synonym	CAS number	%
kaolin	Argilla; Porcelain clay; Hydrite; Hydrated aluminum silicate; Clay; China clay; Clay (kaolin); Kaolin clay; Naturally occurring substances, kaolin (CI 77004); CI 77004	1332-58-7	10-20
titanium dioxide	Titanium oxide; Titanium oxide (TiO ₂); CI 77891; Titanium peroxide; Rutile; C.I. Pigment White 6;	13463-67-7	1-2.5

Section 3. Composition/information on ingredients

	titanium dioxide coated with isopropoxytitanium triisostearate, containing by weight 1,5 % or more but not more than 2,5 % of isopropoxytitanium triisostearate; E 171; C.I. 77891; titanium dioxide, other than those of heading 3206 11 00		
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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. 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.
- C. Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- D. Ingestion** : Wash out mouth with water. 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. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
- E. Most important symptoms/effects, acute and delayed**
Potential acute health effects
- 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.
- Over-exposure signs/symptoms
- Inhalation** : No specific data.
- 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- A. Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- B. Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

- 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.

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. 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).
- C. Methods and material 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. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. 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. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

- A. Precautions for safe handling** : 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 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. 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
kaolin	Ministry of Labor (Republic of Korea, 8/2013). TWA: 2 mg/m ³ 8 hours. Form: Respirable fraction
titanium dioxide	Ministry of Labor (Republic of Korea, 8/2013). TWA: 10 mg/m ³ 8 hours. Form: total dust with less than 1% of free SiO ₂

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. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.
- B. Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- 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.
- 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 EN374. Recommended, gloves(breakthrough time) > 8 hours: nitrile rubber, butyl rubber, Viton®, 4H
Not recommended, gloves(breakthrough time) < 1 hour: polyvinyl alcohol (PVA)
- 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** : White.
- B. Odour** : Characteristic.
- C. Odour threshold** : Not available.
- D. pH** : Not available.
- E. Melting/freezing point** : 0
- F. Boiling point/boiling range** : Lowest known value: 100°C (212°F) (water). Weighted average: 104.13°C (219.4°F)

Section 9. Physical and chemical properties

- G. Flash point** : Not available.
Burning time : Not applicable.
Burning rate : Not applicable.
- H. Evaporation rate** : 0.36 (water) compared with butyl acetate
- I. Flammability (solid, gas)** : Not available.
- J. Lower and upper explosive (flammable) limits** : 0.6 - 4.2%
- K. Vapour pressure** : Highest known value: 3.2 kPa (23.8 mm Hg) (at 20°C) (water). Weighted average: 3.12 kPa (23.4 mm Hg) (at 20°C)
- L. Solubility** : Easily soluble in the following materials: cold water and hot water.
- M. Vapour density** : Highest known value: 7.5 (Air = 1) (propanoic acid, 2-methyl-, monoester with 2,2,4-trimethyl-1,3-pentanediol).
- N. Relative density** : 1.528 g/cm³
- O. Partition coefficient: n-octanol/water** : Not available.
- P. Auto-ignition temperature** : Not applicable.
- Q. Decomposition temperature** : Not available.
SADT : Not available.
- R. Viscosity** : Kinematic (40°C): >0.225 cm²/s (>22.5 mm²/s)
- 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** : No specific data.
- D. Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.
- 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** : No known significant effects or critical hazards.
Oral : No known significant effects or critical hazards.
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**
 Not available.
- 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.

Section 11. Toxicological information

- 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.

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Mutagenicity

Not available.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

C. ATE value

Route	Result
Oral	266666,7 mg/kg

Section 12. Ecological information

A. Aquatic and terrestrial toxicity

- Ecotoxicity** : No known significant effects or critical hazards.
 Not available.

B. Persistence/degradability

Not available.

C. Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
titanium dioxide	-	352	low

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. 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. Empty containers or liners may retain some product residues. 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.

This preparation is not classified as dangerous according to international transport regulations (ADR/RID, IMDG or ICAO/IATA).

Section 15. Regulatory information

A. Regulation according to ISHA

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

ISHA Article 37 : None of the components are listed.

ISHA Article 38 : None of the components are listed.

ISHA Article 39 :

Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

kaolin

titanium dioxide

Exposure Standards established for Harmful Factors : None of the components are listed.

Harmful Factors Subject to Work Environment Measurement : The following components are listed: Titanium dioxide; Silicates

Harmful Factors Subject to Special Health Check-up : None of the components are listed.

Hazardous Substances Subject to Control : The following components are listed: Titanium dioxide

B. Regulation according to AREC & CCA

AREC Toxic chemicals : Not applicable

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

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

AREC Article 17 (TRI) : None of the components are listed.

Korea inventory : Not determined.

Accident Precaution chemicals : None of the components are listed.

C. Dangerous Materials Safety Management Act

: Not available.

Section 15. Regulatory information

- 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** : 11.05.2016
- C. Version** : 4
- Date of printing** : 11.05.2016
- 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.