SAFETY DATA SHEET



Barrier Smart Pack Comp A

Section 1. Identif	fication
GHS product identifier	: Barrier Smart Pack Comp A
Other means of identification	: Not available.
Product code	: 29560
Product type	: Liquid.
Product description	: Paint.
Relevant identified uses of	f the substance or mixture and uses advised against
Identified uses	
Use in coatings - Industrial u Use in coatings - Professior	
Supplier's details	 : 佐敦涂料(张家港)有限公司 江苏省张家港保税区扬子江化学工业园长江路15号 215634 电话: +86 512 58937988 传真: +86 512 58937986 Jotun Coatings (Zhangjiagang) Co. Ltd No.15 Changjiang Road Jiangsu Yangtze River International Chemical Industry Park, Zhangjiagang Free Trade Zone, Jiangsu Province 215634 Tel: +86 512 58937988 Fax: +86 512 58937986 Jotun Paints (Malaysia) Sdn Bhd, Lot 7 Persiaran Perusahaan, Section 23 40300 SHAH ALAM, Selangor Darul Ehsan Malaysia Tel: +603 51235500 Fax: +603 51235599 SDSJotun@jotun.com
Emergency telephone number (with hours of operation)	: Jotun Coatings (Taiwan) Ltd. Co. Tel: +886 2 87705061

Section 2. Hazards identification

Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 3
	SKIN SENSITIZATION - Category 1 AQUATIC HAZARD (ACUTE) - Category 1
	AQUATIC HAZARD (LONG-TERM) - Category 1
GHS label elements	
Hazard pictograms	
Signal word	: Warning.

Date of issue	: 29.12.2020

Section 2. Hazards identification

Hazard statements	: Flammable liquid and vapor. Causes mild skin irritation. May cause an allergic skin reaction. Very toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	: Wear protective gloves. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Avoid release to the environment.
Response	: Collect spillage. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention.
Storage	: Store in a well-ventilated place. Keep cool.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not : None known. result in classification

Section 3. Composition/information on ingredients

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

CAS number/other identifiers

CAS number : Not applicable.		
Product code : 29560		
Product name	Concentration	CAS number
zinc epoxy-formaldehyde resin (MW<700) 1-methoxy-2-propanol zinc oxide epoxy resin (MW ≤ 700)	≥75 - ≤90 ≤5 ≤3 ≤3 ≤3	7440-66-6 9003-36-5 107-98-2 1314-13-2 1675-54-3
物品名稱	濃度	化學文摘社登記號碼(CAS No.)
鋅粉 Formaldehyde, oligomeric reaction products with 1-chloro- 2,3-epoxypropane and phenol 丙二醇甲醚 氧化鋅 (燻煙) 環氧樹脂 (MW≤700)		7440-66-6 9003-36-5 107-98-2 1314-13-2 1675-54-3

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

Description of necessary	<u>y first aid measures</u>
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. If irritation persists, get medical attention.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 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.

Section 4. First aid measures

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.
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 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 s	ymptoms/effects,	acute and delayed

Potential acute health effect	<u>s</u>	
Eye contact	:	No known significant effects or critical hazards.
Inhalation	:	No known significant effects or critical hazards.
Skin contact	:	Causes mild skin irritation. May cause an allergic skin reaction.
Ingestion	:	No known significant effects or critical hazards.
Over-exposure signs/sympto	on	<u>15</u>
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 medi	<u>ca</u>	l 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. 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. Fire-fighting measures

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Extinguishing media	
Suitable extinguishing media	: Use dry chemical, CO ₂ , 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 very 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.

Section 5. Fire-fighting measures

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	:	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.
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 co	ont	ainment and cleaning up
Small spill	:	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	:	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

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 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.

Section 7. Handling and storage

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

Ingredient name		Exposure limits		
1-methoxy-2-propanol		TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 3/2018). STEL: 461.25 mg/m ³ 15 minutes. STEL: 125 ppm 15 minutes. TWA: 369 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.		
Appropriate engineering controls	 te engineering 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 contailso need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. 			
Individual protection measu	res			
Respiratory protection	appropriate standard or certifi	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.		
Hand protection	be worn at all times when har this is necessary. Considerin check during use that the glov should be noted that the time different for different glove ma	us gloves complying with an approved standard should ndling chemical products if a risk assessment indicates g the parameters specified by the glove manufacturer, ves are still retaining their protective properties. It to breakthrough for any glove material may be anufacturers. In the case of mixtures, consisting of ection time of the gloves cannot be accurately		
	resistance to any individual or The breakthrough time must I The instructions and informat storage, maintenance and rep Gloves should be replaced re material. Always ensure that gloves are correctly.	be greater than the end use time of the product. ion provided by the glove manufacturer on use, olacement must be followed. gularly and if there is any sign of damage to the glove e free from defects and that they are stored and used ness of the glove may be reduced by physical/chemical		

Section 8. Exposure controls/personal protection

	Wear suitable gloves tested to EN374. Recommended, gloves(breakthrough time) > 8 hours: neoprene, fluor rubber, Viton®, PE, nitrile rubber, butyl rubber May be used, gloves(breakthrough time) 4 - 8 hours: 4H
Eye 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.
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.
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

Appearance		
Physical state	Liquid.	
Color	Various colors.	
Odor	Characteristic.	
Odor threshold	Not available.	
рН	Not applicable.	
Melting point	Not applicable.	
Boiling point	Lowest known value: 120.17°C (248.3°F) (1-methoxy-2-propanol). Weighted average: 185°C (365°F)	
Flash point	Closed cup: 42°C (107.6°F)	
Evaporation rate	0.814 (1-methoxy-2-propanol) compared with butyl acetate	
Flammability (solid, gas)	Not applicable.	
Lower and upper explosive (flammable) limits	1.48 - 13.74%	
Vapor pressure	Highest known value: 1.1 kPa (8.5 mm Hg) (at 20°C) (1-methoxy-2-propanol). Weighted average: 0.39 kPa (2.93 mm Hg) (at 20°C)	
Vapor density	Highest known value: 11.7 (Air = 1) (epoxy resin (MW \leq 700)). Weighted ave 6.47 (Air = 1)	erage:
Relative density	3.869 g/cm ³	
Solubility	Insoluble in the following materials: cold water and hot water.	
Partition coefficient: n- octanol/water	Not available.	
Auto-ignition temperature	Lowest known value: 270°C (518°F) (1-methoxy-2-propanol).	
Decomposition temperature	Not available.	
Viscosity	Not available.	

Section 10. Stability and reactivity

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	: Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity				
Product/ingredient name	Result	Species	Dose	Exposure
1-methoxy-2-propanol	LD50 Dermal LD50 Oral	Rabbit Rat	13 g/kg 6600 mg/kg	-
epoxy resin (MW ≤ 700)	LD50 Dermal LD50 Oral	Rabbit Mouse	20 g/kg 15600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
zinc	Skin - Mild irritant	Human	-	72 hours 300 Micrograms Intermittent	-
epoxy-formaldehyde resin (MW<700)	Skin - Mild irritant	Mammal - species unspecified	-	-	-
1-methoxy-2-propanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
zinc oxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500	-
epoxy resin (MW ≤ 700)	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-

Sensitization

Product/ingredient name	Route of exposure	Species	Result
epoxy-formaldehyde resin (MW<700)	skin	Mammal - species unspecified	Sensitizing
epoxy resin (MW ≤ 700)	skin	Mammal - species unspecified	Sensitizing

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Section 11. Toxicological information

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name		Route of exposure	Target organs
1-methoxy-2-propanol	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure	: Not available.
Potential acute health effects	
Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: Causes mild skin irritation. May cause an allergic skin reaction.
Ingestion	: No known significant effects or critical hazards.
Symptoms related to the phy	ical, chemical and toxicological characteristics
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 effect	s 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 eff	<u>ets</u>
Not available.	
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.
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.

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<u>Numerical</u>	measures	of toxicity
A outo tox		ataa

Acute toxicity estimates		stimates			
٦	Date of issue	: 29.12.2020			

Section 11. Toxicological information

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
zinc	Acute LC50 330 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 0.78 mg/l Fresh water	Fish	96 hours
epoxy-formaldehyde resin (MW<700)	Acute EC50 2 mg/l	Daphnia	24 hours
	Acute LC50 2 mg/l	Fish	96 hours
zinc oxide	Acute LC50 1.1 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 0.02 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
epoxy resin (MW ≤ 700)	Acute EC50 1.4 mg/l	Daphnia	48 hours
	Acute LC50 3.1 mg/l	Fish - pimephales promelas	96 hours
	Chronic NOEC 0.3 mg/l	Fish	21 days

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
zinc epoxy-formaldehyde resin (MW<700)	-	-	Not readily Not readily
zinc oxide epoxy resin (MW ≤ 700)	-	-	Not readily Not readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
epoxy-formaldehyde resin (MW<700)	2.7	-	low
1-methoxý-2-propanol zinc oxide epoxy resin (MW ≤ 700)	<1 - 2.64 to 3.78	- 28960 31	low high low

Mobility in soil

Soil/water partition coefficient (Koc)

: 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,

Section 13. Disposal considerations

waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	ΙΑΤΑ
UN number	UN1263	UN1263	UN1263
UN proper shipping name	Paint	Paint. Marine pollutant (zinc, zinc oxide)	Paint
Transport hazard class(es)	3		3
Packing group	III	111	Ш
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	-	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <u>Emergency schedules</u> F-E, <u>S-E</u>	The environmentally hazardous substance mark may appear if required by other transportation regulations.

ADR / RID

: Tunnel restriction code: (D/E)

Hazard identification number: 30

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.

Section 15. Regulatory information

List of chemicals for which : This product contains substances "Specially hazardous to health": xylene, lead. manufacturing or handling is defined as "work specially hazardous to health"	
Safety, health and environmental regulations specific for the product: No known specific national and/or regional regulations applicable to this product (including its ingredients).	
Taiwan Chemical : Not determined. Substances Inventory (TCSI)	
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

<u>History</u>	
Date of printing	: 29.12.2020
Date of previous issue	: 27.09.2018
Version	: 1.04
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 = Internediate 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) UN = United Nations

Indicates information that has changed from previously issued version.

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.