

SAFETY DATA SHEET



Hardtop XP Comp A

Section 1. Identification

Product name	: 脂肪族聚氨酯面漆 组分A
Product code	: 3140
Product type	: Liquid.
Product description	: Paint.
Relevant identified uses of the substance or mixture and uses advised against	
Supplier's details	: 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 朝光 JOTUN 株式會社 大韓民國 釜山廣域市 江西區 科學產團 1路 96 (智士洞) Tel: + 86 535 3088 586 Fax: + 82 51 711 7735 SDSJotun@jotun.com
Emergency telephone number	: +86 535 3088 586

Section 2. Hazards identification

Classification of the substance or mixture	: FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A LONG-TERM AQUATIC HAZARD - Category 3
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GHS label elements

Hazard pictograms



Signal word	: Warning.
Hazard statements	: Flammable liquid and vapour. Causes serious eye irritation. Causes skin irritation. Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention	: Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Avoid release to the environment. Wash hands thoroughly after handling.
Response	: IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: 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.

Section 3. Composition/information on ingredients

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

CAS number/other identifiers

CAS number : Not applicable.
EC number : Mixture.
Product code : 3140

Ingredient name	%	CAS number
xylene	≥10 - <22	1330-20-7
n-butyl acetate	≤10	123-86-4
ethylbenzene	≤5	100-41-4
Solvent naphtha (petroleum), light arom.	≤3	64742-95-6
n-butyl methacrylate	<1	97-88-1
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	<0.25	41556-26-7

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 first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- 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.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. 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 symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
- Inhalation** : No specific data.

Section 4. First aid measures

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

Ingestion : No specific data.

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

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

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Flammable liquid and 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 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
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through 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.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of 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.

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.

Section 6. Accidental release measures

- 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

- 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.
- 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
xylene	GBZ 2.1 (China, 4/2007). PC-STEL: 100 mg/m ³ 15 minutes. PC-TWA: 50 mg/m ³ 8 hours.
n-butyl acetate	GBZ 2.1 (China, 4/2007). PC-STEL: 300 mg/m ³ 15 minutes. PC-TWA: 200 mg/m ³ 8 hours.
ethylbenzene	GBZ 2.1 (China, 4/2007). PC-TWA: 100 mg/m ³ 8 hours. PC-STEL: 150 mg/m ³ 15 minutes.
Solvent naphtha (petroleum), light arom.	ACGIH TLV (United States, 1/2005). TWA: 123 mg/m ³ 8 hours. Form: All forms TWA: 25 ppm 8 hours. Form: All forms

- 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.
- 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.

Individual protection measures

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye protection** : Safety eyewear complying to EN 166 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- 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.
Not recommended, gloves(breakthrough time) < 1 hour: PVC, Viton®, PE
Recommended, gloves(breakthrough time) > 8 hours: Teflon, polyvinyl alcohol (PVA), 4H, nitrile rubber
May be used, gloves(breakthrough time) 4 - 8 hours: butyl rubber, neoprene
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Colour** : Various colours.
- Odour** : Characteristic.
- Odour threshold** : Not available.
- pH** : Not applicable.
- Melting point** : Not applicable.

Section 9. Physical and chemical properties

Boiling point	: Lowest known value: 126°C (258.8°F) (n-butyl acetate). Weighted average: 137.13°C (278.8°F)
Flash point	: 25
Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Highest known value: 1 (n-butyl acetate) Weighted average: 0.77 compared with butyl acetate
Flammability (solid, gas)	: Not applicable.
Lower and upper explosive (flammable) limits	: 0.8 - 9.8%
Vapour pressure	: Highest known value: 1.5 kPa (11.3 mm Hg) (at 20°C) (n-butyl acetate). Weighted average: 1.02 kPa (7.65 mm Hg) (at 20°C)
Vapour density	: Highest known value: 4 (Air = 1) (n-butyl acetate). Weighted average: 3.78 (Air = 1)
Relative density	: 1.191 to 1.451 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: 280 to 470°C (536 to 878°F) (Solvent naphtha (petroleum), light arom.).
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Kinematic (40°C): >0.205 cm ² /s (>20.5 mm ² /s)

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurise, 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: oxidising agents, strong alkalis, strong acids.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Fine dust clouds may form explosive mixtures with air.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
xylene	LC50 Inhalation Vapour	Rat	20 mg/l	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
n-butyl acetate	TDL ₀ Dermal	Rabbit	4300 mg/kg	-
	LC50 Inhalation Vapour	Rat	>21.1 mg/l	4 hours
	LD50 Dermal	Rabbit	>17600 mg/kg	-
ethylbenzene	LD50 Oral	Rat	13100 mg/kg	-
	LC50 Inhalation Gas.	Rabbit	4000 ppm	4 hours
	LD50 Dermal	Rabbit	>5000 mg/kg	-
n-butyl methacrylate	LD50 Oral	Rat	3500 mg/kg	-
	LD50 Oral	Rat	16 g/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
n-butyl methacrylate	Skin - Mild irritant	Rabbit	-	500 microliters	-

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
n-butyl acetate Solvent naphtha (petroleum), light arom.	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation and Narcotic effects
n-butyl methacrylate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
ethylbenzene	Category 2	Not determined	hearing organs

Aspiration hazard

Name	Result
ethylbenzene Solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- Ingestion** : No known significant effects or critical hazards.

Symptoms related to the physical, 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.

Section 11. Toxicological information

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : 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.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Dermal	10128.9 mg/kg
Inhalation (vapours)	75.97 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
ethylbenzene	Acute EC50 7.2 mg/l	Algae	48 hours
	Acute EC50 2.93 mg/l	Daphnia	48 hours
	Acute LC50 4.2 mg/l	Fish	96 hours
Solvent naphtha (petroleum), light arom.	Acute EC50 <10 mg/l	Daphnia	48 hours
	Acute IC50 <10 mg/l	Algae	72 hours
	Acute LC50 <10 mg/l	Fish	96 hours
n-butyl methacrylate	Chronic NOEC 2.6 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days

Persistence/degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene	-	-	Readily
ethylbenzene	-	-	Readily
Solvent naphtha (petroleum), light arom.	-	-	Not readily
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	-	-	Not readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
xylene	3.12	8.1 to 25.9	low
n-butyl acetate	2.3	-	low
ethylbenzene	3.6	-	low
Solvent naphtha (petroleum), light arom.	-	10 to 2500	high
n-butyl methacrylate	2.99	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : 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 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. 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

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.

	UN	IMDG	IATA
UN number	1263	1263	1263
UN proper shipping name	Paint	Paint	Paint
Transport hazard class(es)	3 	3 	3 
Packing group	III	III	III
Environmental hazards	No.	No.	No.
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 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 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.

Date of issue : 23.10.2017

Section 14. Transport information

Additional information	-	Emergency schedules (EmS) F-E, S-E	-

- ADR / RID** : Tunnel restriction code: (D/E)
Hazard identification number: 30
Special provisions: 640E
ADR/RID: Viscous substance. Not restricted, ref. chapter 2.2.3.1.5 (applicable to receptacles < 450 litre capacity).
- IMDG** : IMDG: Viscous substance. Transport in accordance with paragraph 2.3.2.5 (applicable to receptacles < 30 litre capacity).

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product:

Law of the People's Republic of China on the Prevention and Control of Occupational Diseases

Regulations on the Control over Safety of Dangerous Chemicals
Measures for Environmental Management of New Chemical Substances
Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes
Safety regulations for the use of chemicals in the workplace
General Rule for Classification and Hazard Communication of Chemicals
Classification and code of dangerous goods

List of Goods banned for Importing

None of the components are listed.

List of Goods banned for Exporting

None of the components are listed.

List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

Section 16. Other information

History

Date of printing : 23.10.2017

Key to abbreviations : ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
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)
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
UN = United Nations

Notice to reader

Section 16. Other information

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.