

Jotaguard 690 Comp A

(In accordance with Article 41, Paragraph 1, of Industrial Safety and Health Act)

Section 1. Chemical product and company identification

Α.	Product name	: Jotaguard 690 Comp A
	Label No.	: 14960
	Product description	: Paint.
	Product type	: Liquid.
B. Relevant identified uses of the substance or mixture and uses advised against		<u>s of the substance or mixture and uses advised against</u>
	Identified uses	
	Use in coatings - Industrial use Use in coatings - Professional use	

C.	Supplier/Manufacturer		Chokwang Jotun Ltd. 96, Gwahaksandan 1-ro
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Section 2. Hazards identification

A. Hazard classification	: FLAMMABLE LIQUIDS - Category 3
	SKIN CORROSION/IRRITATION - Category 2
	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
	SKIN SENSITISATION - Category 1
	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

В.	GHS label elements,	including	precautio	onary statements	
	Symbol	:	\wedge	\land	
			JL.		

Signal word	: Warning.
Hazard statements	 Flammable liquid and vapour. Causes serious eye irritation. Causes skin irritation. May cause an allergic skin reaction. Harmful to aquatic life with long lasting effects.
Precautionary statem	ents
Prevention	: Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Avoid release to the environment. Avoid breathing vapour. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.

Section 2. Hazards identification

Response	N SKIN (or hair): Take off immediately all contain water or shower. IF ON SKIN: Wash with plent aminated clothing and wash it before reuse. If sl medical attention. IF IN EYES: Rinse cautiously ove contact lenses, if present and easy to do. Constant ists: Get medical attention.	y of soap and water. Take off kin irritation or rash occurs: / with water for several minutes.
Storage	e in a well-ventilated place. Keep cool.	
Disposal	ose of contents and container in accordance witl international regulations.	h all local, regional, national
Other hazards which do	e known.	

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

Section 3. Composition/information on ingredients

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

CAS	number/	other	identifiers

CAS number	: Not applicable.	
	. Mischung	

EC number	: Mixture.
Product code	: 14960

Ingredient name	Synonyms	CAS number	%
alumina	alumina	1344-28-1	30-40
4,4'-Isopropylidenediphenol, oligomericreaction products with 1-chloro-2,3-epoxypropane, reaction products with fatty	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,	67989-52-0	10-20
acids, C18-unsatd., dimers	3-epoxypropane, reaction products with fatty acids, C18-unsatd., dimers		
xylene	xylene	1330-20-7	2.5-10
epoxy resin (MW ≤ 700)	epoxy resin (MW ≤ 700)	1675-54-3	2.5-10
titanium dioxide	titanium dioxide	13463-67-7	2.5-10
glycidyl ether of 3-alkyl phenol	glycidyl ether of 3-alkyl phenol	68413-24-1	2.5-10
butan-1-ol	butan-1-ol	71-36-3	1-2.5
ethylbenzene	ethylbenzene	100-41-4	1-2.5
silica, crystalline - quartz	silica, crystalline - quartz	14808-60-7	1-2.5

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

Α.	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.
В.	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.

Section 4. First aid measures

C.	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.
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 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.
Ε.	Notes to physician	:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Specific treatments	1	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. Firefighting measures

Α.	Extinguishing media		
	Suitable extinguishing media	1	Use dry chemical, CO ₂ , water spray (fog) or foam.
	Unsuitable extinguishing media	:	Do not use water jet.
В.	Specific hazards arising from the chemical	:	Flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	Hazardous thermal decomposition products	:	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
C.	Special protective equipment for fire- fighters	:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Special precautions for fire-fighters	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Section 6. Accidental release measures

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

Section 7. Handling and storage

A. Precautions for safe handling

	Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
	Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
В.	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. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

A. Control parameters

Occupational exposure limits

	Ingredient name			Exposure limits		
	xylene butan-1-ol			Ministry of Employment and Labor (Republic of Korea, 7/2018). STEL: 150 ppm 15 minutes. TWA: 100 ppm 8 hours. Ministry of Employment and Labor		
				(Republic of Korea, 7/2018). Absorbed through skin. TWA: 20 ppm 8 hours.		
	ethylbenzene			Ministry of Employment and Labor (Republic of Korea, 7/2018). STEL: 125 ppm 15 minutes. TWA: 100 ppm 8 hours.		
В.	Appropriate engineering controls	e process enclosures, local exhaust s to keep worker exposure to airborne l or statutory limits. The engineering controls concentrations below any lower explosive equipment.				
	Environmental exposure controls		they comply with the requirements of encases, fume scrubbers, filters or engine equipment will be necessary to reduce			
C.	Personal protective equip	m	<u>ent</u>			
	Respiratory protection	•	If workers are exposed to concentrations above the exposure limit, they must us respirator according to EN 140. Use respiratory mask with charcoal and dust filt when spraying this product, according to EN 14387(as filter combination A2-P2) confined spaces, use compressed-air or fresh-air respiratory equipment. When of roller or brush, consider use of charcoalfilter.			
	Eye protection	1	Use safety eyewear designed to protec	t against splash of liquids.		
	Hand protection	-	There is no one glove material or comb resistance to any individual or combinal The breakthrough time must be greated The instructions and information provid storage, maintenance and replacement Gloves should be replaced regularly an material. Always ensure that gloves are free from correctly. The performance or effectiveness of the damage and poor maintenance. Barrier creams may help to protect the applied once exposure has occurred. Wear suitable gloves tested to EN374. May be used, gloves(breakthrough time Barricade, CPF 3, Responder, PVC	 a hours: neoprene, butyl rubber, Viton®, 		
			penetration, seek advice by the supplie The user must check that the final choi	ce of type of glove selected for handling this ses into account the particular conditions of		

Section 8. Exposure controls/personal protection

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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.
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. 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

Α.	Appearance		
	Physical state	:	Liquid.
	Colour	:	Various colours.
В.	Odour	1	Characteristic.
С.	Odour threshold	1	Not available.
D.	рН	1	Not applicable.
Ε.	Melting/freezing point	1	Not applicable.
F.	Boiling point/boiling range	1	Lowest known value: 119°C (246.2°F) (butan-1-ol). Weighted average: 176.63°C (349.9°F)
G.	Flash point	:	Closed cup: 35°C (95°F)
	Burning time	1	Not applicable.
	Burning rate	4	Not applicable.
н.	Evaporation rate	1	Highest known value: 0.84 (ethylbenzene) Weighted average: 0.72compared with butyl acetate
Т.	Flammability (solid, gas)	4	Not available.
J.	Lower and upper explosive (flammable) limits	-	0.8 - 11.3%
К.	Vapour pressure	:	Highest known value: 1.2 kPa (9.3 mm Hg) (at 20°C) (ethylbenzene). Weighted average: 0.68 kPa (5.1 mm Hg) (at 20°C)
L.	Solubility	:	Insoluble in the following materials: cold water and hot water.
	Solubility in water	1	Not available.
Μ.	Vapour density	:	Highest known value: 11.7 (Air = 1) (epoxy resin (MW \leq 700)). Weighted average: 5.83 (Air = 1)
Ν.	Relative density	1	1.78 to 1.821 g/cm ³
	Partition coefficient: n- octanol/water	1	Not available.
Ρ.	Auto-ignition temperature	1	Lowest known value: 355°C (671°F) (butan-1-ol).
Q.	Decomposition temperature	1	Not available.
	SADT	1	Not available.
R.	Viscosity	1	Kinematic (40°C (104°F)): >0.205 cm²/s (>20.5 mm²/s)
S.	Molecular weight	1	Not applicable.

Section 10. Stability and reactivity

Α.	Chemical stability	:	The product is stable.
	Possibility of hazardous reactions	1	Under normal conditions of storage and use, hazardous reactions will not occur.
В.	Conditions to avoid	1	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.
С.	Incompatible materials	:	Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids.
D.	Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Α.	Information on likely routes of exposure	: Not available.
	Potential acute health	<u>effects</u>
	Inhalation	: No known significant effects or critical hazards.
Ingestion : No known significat		: No known significant effects or critical hazards.
	Skin contact	: Causes skin irritation. May cause an allergic skin reaction.
	Eye contact	: Causes serious eye irritation.
	Over-exposure signs/s	symptoms
	Inhalation	: No specific data.
	Ingestion	: No specific data.
	Skin contact	: Adverse symptoms may include the following: irritation redness
	Eye contact	: Adverse symptoms may include the following: pain or irritation watering redness

B. Health hazards

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
xylene	LC50 Inhalation Vapour	Rat	20 mg/l	4 hours
	LD50 Oral	Rat	4300 mg/kg	-
	TDLo Dermal	Rabbit	4300 mg/kg	-
epoxy resin (MW ≤ 700)	LD50 Dermal	Rabbit	20 g/kg	-
	LD50 Oral	Mouse	15600 mg/kg	-
butan-1-ol	LD50 Oral	Rat	790 mg/kg	-
ethylbenzene	LC50 Inhalation Gas.	Rabbit	4000 ppm	4 hours
-	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
epoxy resin (MW ≤ 700)	Eyes - Severe irritant	Rabbit	-	24 hours 2	-
	Skin - Mild irritant	Rabbit	-	mg 500 mg	-

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Section 11. Toxicological information

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
xylene	Category 3		Respiratory tract irritation
butan-1-ol	Category 3		Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

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

Aspiration hazard

Name	Result
	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Potential chronic health effects

Chronic toxicity

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.

ATE value

Route	Result
Dermal	16832.2 mg/kg 17543.9 mg/kg 138.2 mg/l

Section 12. Ecological information

A. Aquatic and terrestrial toxicity

Ecotoxicity :	This material is harmful to aqua	s material is harmful to aquatic life with long lasting effects.		
Product/ingredient name	Result	Species	Exposure	
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	
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	

B. Persistence and degradability

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Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
xylene epoxy resin (MW ≤ 700) ethylbenzene	-		Readily Not readily Readily

C. Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
xylene	3.12	8.1 to 25.9	low
epoxy resin (MW ≤ 700)	2.64 to 3.78	31	low
butan-1-ol	1	-	low
ethylbenzene	3.6		low

D. Mobility in soil

Soil/water partition	: Not available.
coefficient (Koc)	

E. Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

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

Section 14. Transport information

	UN	IMDG	ΙΑΤΑ
A. UN number	UN1263	UN1263	UN1263
B. UN proper shipping name	Paint	Paint	Paint
C. Transport hazard class(es)	3	3	3
D. Packing group	111	Ш	Ш
E. Environmental hazards	No.	No.	No.
F. Additional information	Tunnel restriction code: (D/E) Hazard identification number: 30	<u>Emergency schedules</u> F-E, <u>S-E</u>	-

Section 14. Transport information

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.
	IMDG: Viscous substance. Transport in accordance with paragraph 2.3.2.5 (applicable to receptacles < 30 litre capacity).

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

Section 15. Regulatory information

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Α.	Regulation according to	<u>A</u>	
	ISHA article 37 (Harmful substances prohibited from manufacture)	None of the components are listed.	
	ISHA article 38 (Harmful substances requiring permission)	None of the components are listed.	
В.	Regulation according to	<u>EC & CCA</u>	
	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)	The following components are listed: Aluminium and its compounds; Xylene Ethylbenzene	э;
	Korea inventory	Not determined.	
C.	Dangerous Materials Safety Management Act	Class: Class 4 - Flammable Liquid Item: 4. Class 2 petroleums - Water-insoluble liquid Threshold: 1000 L Danger category: III Signal word: Contact with sources of ignition prohibited	
D.	Wastes regulation	Dispose of contents and container in accordance with all local, regional, nat and international regulations.	tional
Ε.	Regulation according to	<u>er foreign laws</u>	
	Europe inventory	At least one component is not listed.	
	United States inventory (TSCA 8b)	Not determined.	
	Japan inventory	Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.	
	Safety, health and environmental regulations specific for the product	No known specific national and/or regional regulations applicable to this pro (including its ingredients).	oduct

Section 16. Other information

Α.	References	:	Not available.
В.	Date of issue/Date of revision	:	12.07.2019
С.	Version	:	2
	Date of printing	:	12.07.2019
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D. Other

✓ Indicates information that has changed from previously issued version.

Section 16. Other information

Key to abbreviations	: ATE = Acute Toxicity Estimate
	BCF = Bioconcentration Factor
	GHS = Globally Harmonized System of Classification and Labelling of Chemicals
	IATA = International Air Transport Association
	IBC = Intermediate Bulk Container
	IMDG = International Maritime Dangerous Goods
	LogPow = logarithm of the octanol/water partition coefficient
	MARPOL = International Convention for the Prevention of Pollution From Ships,
	1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
	UN = United Nations

Notice to reader

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

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

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