SAFETY DATA SHEET

ARALDITE® RAPID TRNSP

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

Section 1. Chemical product and company identification

A. Product name : ARALDITE® RAPID TRNSP

MSDS no. : 00055272

B. Recommended use of the chemical

Adhesive system

C. Supplier : Huntsman Advanced Materials (Hong Kong) Ltd
Room 3108-11, 31/F, Tower 1
Millennium City 1
No. 388 Kwun Tong Road
Kowloon, Hong Kong
Tel: +852 2148 8800
Fax: +852 2487 1428

Huntsman Korea Ltd.
9F Dukmyung BD 170-9, Samsung-dong, Kangnam-gu, Seoul 135-741
Tel : 82-2-3404-6844
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Emergency telephone number (with hours of operation) : EUROPE: +32 35 75 1234 - USA: +1/800/424.9300 - ASIA: +65 6542 9595 - China: +86 20 39377888 - India +91 22 40506333 - Australia: 1800 786 152 - New Zealand: 0800 767 437 -Brazil 0800 70 71 767

e-mail address of person responsible for this SDS : Global_Product_EHS_AdMat@huntsman.com

Section 2. Hazards identification

A. Hazard classification : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
SKIN SENSITIZATION - Category 1
AQUATIC TOXICITY (CHRONIC) - Category 2

B. GHS label elements, including precautionary statements

Symbol :

Signal word : Warning

Hazard statements : H319 - Causes serious eye irritation.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements

General : Not applicable.

Prevention : P280 - Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection.
P273 - Avoid release to the environment.
P261 - Avoid breathing vapour.
P264 - Wash hands thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.

Section 2. Hazards identification

Response : P391 - Collect spillage.
P302 + P352 + P362-2 + P363 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse.
P333 + P313 - If skin irritation or rash occurs: Get medical attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

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

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

CAS number/other identifiers

Ingredient name	CAS number	%
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	25068-38-6	40 - 50
triethylene glycol dimercaptan	14970-87-7	1 - 5
Bisphenol F epoxy resin	9003-36-5	1 - 5
Dimethyl Dipropyl Triamine	10563-29-8	1 - 5
Terphenyl, hydrogenated	61788-32-7	1 - 5
N,N,4-Trimethylpiperazine-1-ethylamine	104-19-8	1 - 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

A. Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

B. 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.

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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

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.

Section 4. First-aid measures

E. Most important symptoms/effects, acute and delayed

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Irritating to mouth, throat and stomach.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Eye contact : Causes serious eye irritation.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : Adverse symptoms may include the following:
irritation
redness

Eyes : Adverse symptoms may include the following:
pain or irritation
watering
redness

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

Specific treatments : Not available.

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

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

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. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
halogenated compounds

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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

C. Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). 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 : 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.

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. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

B. Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). 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
Terphenyl, hydrogenated	**Ministry of Labor (Republic of Korea, 3/2012).** TWA: 5 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours.

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 : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

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 : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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.

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. > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)

Skin 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.

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

A. Appearance

Physical state : Liquid.

Colour : Not available.

B. Odour : Not available.

C. Odour threshold : Not available.

D. pH : Not available.

E. Melting/freezing point : Not available.

F. Boiling point/boiling range : Not available.

G. Flash point : Closed cup: 110°C (230°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]

Burning time : Not applicable.

Burning rate : Not applicable.

Section 9. Physical and chemical properties

H. Evaporation rate : Not available.

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

J. Lower and upper explosive (flammable) limits : Not available.

K. Vapour pressure : Not available.

L. Solubility : Not available.

M. Vapour density : Not available.

N. Relative density : Not available.

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

P. Auto-ignition temperature : Not available.

Q. Decomposition temperature : Not available.

SADT : Not available.

R. Viscosity : Not available.

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 : Reactive or incompatible with the following materials: strong acids, strong bases, strong oxidising agents

E. Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Decomposition products may include the following materials: Burning produces obnoxious and toxic fumes. Carbon oxides

Section 11. Toxicological information

A. Information on the likely routes of exposure

Respiratory : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Oral : Irritating to mouth, throat and stomach.

Skin : Causes skin irritation. May cause an allergic skin reaction.

Eyes : Causes serious eye irritation.

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

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	LC0 Inhalation Vapour	Rat - Male	0.00001 ppm	5 hours
	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Female	>2000 mg/kg	-
bisphenol F-epoxy resin	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
N	LD50 Dermal	Rabbit	1310 mg/kg	-

Section 11. Toxicological information

(3-dimethylaminopropyl)-1, 3-propylenediamine				
	LD50 Oral	Rat	1670 mg/kg	-
Terphenyl, hydrogenated	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>10000 mg/kg	-
N,N, 4-Trimethylpiperazine-1-ethylamine	LD50 Dermal	Rabbit	448 mg/kg	-
	LD50 Oral	Rat	677 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	Skin - Mild irritant	Rabbit	-	-	-
	Eyes - Mild irritant	Rabbit	-	-	-
bisphenol F-epoxy resin	Eyes - Non-irritant.	Rabbit	-	-	-
	Skin - Mild irritant	Rabbit	-	-	-
N (3-dimethylaminopropyl)-1, 3-propylenediamine	Skin - Corrosive	Rabbit	-	-	-

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	skin	Mouse	Sensitising
bisphenol F-epoxy resin	skin	Mouse	Sensitising
N (3-dimethylaminopropyl)-1, 3-propylenediamine	skin	Guinea pig	Sensitising

Potential chronic health effects

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Inhalation : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Skin contact : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

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

Product/ingredient name	Result	Species	Dose	Exposure
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	Sub-chronic NOAEL Oral	Rat - Male, Female	50 mg/kg	14 weeks; 7 days per week
	Sub-chronic NOEL Dermal	Rat - Male, Female	10 mg/kg	13 weeks; 5 days per week
	Sub-chronic NOAEL Dermal	Mouse - Male	100 mg/kg	13 weeks; 3 days per week
bisphenol F-epoxy resin	Sub-chronic NOAEL Oral	Rat - Male, Female	250 mg/kg	13 weeks; 7 days per week

Carcinogenicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	Negative - Oral - NOAEL	Rat - Male, Female	15 mg/kg	2 years; 7 days per week
	Negative - Dermal - NOEL	Rat - Female	1 mg/kg	2 years; 5 days per week
	Negative - Dermal - NOEL	Mouse - Male	0.1 mg/kg	2 years; 3 days per week

Mutagenicity

Product/ingredient name	Test	Experiment	Result
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Positive
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/-	Positive
	OECD 478 Genetic Toxicology: Rodent Dominant Lethal Test	Experiment: In vivo Subject: Mammalian-Animal Cell: Germ	Negative
	EPA OPPTS	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Negative
bisphenol F-epoxy resin	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Positive
	OECD 476 In vitro Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/-	Positive
	OECD 473 In vitro Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Human Cell: Somatic Metabolic activation: +/-	Positive
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Negative
	OECD 486 Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo	Experiment: In vivo Subject: Mammalian-Animal Cell: Somatic	Negative
N (3-dimethylaminopropyl)-1, 3-propylenediamine	-	Experiment: In vitro Subject: Bacteria	Negative

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	Negative - Oral	Rat - Female	>540 mg/kg NOEL	10 days
	Negative - Dermal	Rabbit - Female	>300 mg/kg NOEL	13 days; 6 hours per day
	Negative - Oral	Rabbit - Female	180 mg/kg NOAEL	13 days
bisphenol F-epoxy resin	Negative - Dermal	Rabbit - Female	>300 mg/kg NOEL	13 days; 6 hours per day

Reproductive toxicity

Section 11. Toxicological information

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	Negative	Negative	Negative	Rat - Male, Female	Oral: 540 mg/kg NOEL	238 days; 7 days per week
bisphenol F-epoxy resin	Negative	Negative	Negative	Rat - Male, Female	Oral: 540 mg/kg NOEL	238 days; 7 days per week

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	4959.1 mg/kg
Dermal	14743 mg/kg
Inhalation (vapours)	142.7 mg/l

Section 12. Ecological information

A. Aquatic and terrestrial toxicity

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

Product/ingredient name	Result	Species	Exposure
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	Acute EC50 9.4 mg/l Fresh water	Algae	72 hours Static
	Acute EC50 1.7 mg/l Fresh water	Daphnia	48 hours Static
	Acute IC50 >100 mg/l Fresh water	Bacteria	3 hours Static
	Acute LC50 1.5 mg/l Fresh water	Fish	96 hours Static
	Chronic NOEC 0.3 mg/l Fresh water	Daphnia	21 days Semi-static
bisphenol F-epoxy resin	Acute EC50 1.8 mg/l Fresh water	Algae	72 hours Static
	Acute EC50 1.6 mg/l Fresh water	Daphnia	48 hours Static
	Acute IC50 >100 mg/l Fresh water	Bacteria	3 hours Static
	Acute LC50 0.55 mg/l Fresh water	Fish	96 hours Semi-static
	Chronic NOEC 0.3 mg/l Fresh water	Daphnia	21 days Semi-static
N (3-dimethylaminopropyl)-1, 3-propylenediamine	Acute EC50 9.2 mg/l	Daphnia	48 hours
Terphenyl, hydrogenated	Acute ErC50 (growth rate) 21 mg/l	Algae	72 hours
	Acute EC50 56 mg/l	Algae	96 hours
	Acute LC50 >100 mg/l	Fish	96 hours

B. Persistence/degradability

Section 12. Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	OECD Derived from OECD 301F (Biodegradation Test)	5 % - Not readily - 28 days	20 mg/l Oxygen consumption	-
bisphenol F-epoxy resin	EU	0 % - Not readily - 28 days	3 mg/l Oxygen consumption	Activated sludge
N (3-dimethylaminopropyl)-1, 3-propylenediamine	ISO ISO 7827, 1984 - Evaluation in an aqueous medium of the ultimate aerobic biodegradability of organic compounds	100 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	Fresh water 4.83 days Fresh water 3.58 days Fresh water 7.1 days	-	Not readily
bisphenol F-epoxy resin	-	-	Not readily
N (3-dimethylaminopropyl)-1, 3-propylenediamine	-	-	Readily

C. Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane	3.242	31	low
bisphenol F-epoxy resin	2.7 to 3.6	-	low
N (3-dimethylaminopropyl)-1, 3-propylenediamine	0.5	-	low
Terphenyl, hydrogenated	6.5	-	high

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. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

ADR/RID Class

A. UN number : UN3082

B. Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. BISPHENOL A EPOXY RESIN

C. Classes : 9

D. Packing group : III

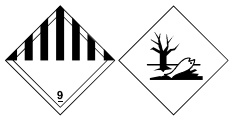
E. Environmental hazards : Yes.

F. Additional information : **Hazard identification number**
90

Special provisions
274, 335, 601

Tunnel code
E

Label :



IMDG Class

A. UN number : UN3082

B. Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A EPOXY RESIN). Marine pollutant (triethylene glycol dimercaptan)

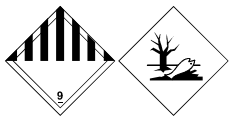
C. Classes : 9

D. Packing group : III

E. Marine pollutant : Yes.

F. Additional information : **Emergency schedules (EmS)**
F-A, S-F

Label :



IATA Class

A. UN number : UN3082

B. Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (BISPHENOL A EPOXY RESIN)

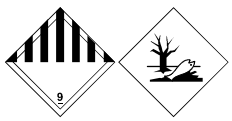
C. Classes : 9

D. Packing group : III

E. Environmental hazards : Yes.

F. Additional information : **Passenger and Cargo Aircraft**Quantity limitation: 450 L
Packaging instructions: 964
Cargo Aircraft Only Quantity limitation: 450 L
Packaging instructions: 964

Label :



Section 15. Regulatory information

A. Regulation according to ISHA

Prohibited substances pursuant to provision in Article 37 of the Act : Not applicable

Section 15. Regulatory information

Permitted substances pursuant to provision in Article 38 of the Act : Not applicable

Harmful factors subject to work environment measurement pursuant to provision in Paragraph 1, Article 93 of the Act : Not applicable.

Harmful substances subject to special medical examination pursuant to provision in Article 98-2 of the Act : Not applicable.

Harmful factors below permission standard pursuant to provision in Paragraph 2-1, Article 39 of the Act : Not applicable.

Hazardous Substances subject to control pursuant to provision in Article 420 of the Regulation for Occupational Safety and Health Standards : Not applicable.

B. Regulation according to TCCA

TCCA Toxic chemicals : Not applicable

TCCA Observational chemicals : Applicable: 4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane (Cut-off limit: 25%)

TCCA Article 32 (Banned) : Not applicable

TCCA Article 32 (Restricted) : Not applicable

TCCA Article 17 (TRI) : Applicable: 4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl)oxirane (Cut-off limit: 1%)

TCCA Chemicals requiring Preparation for Accidents : Not applicable

Korea inventory : Listed

C. Dangerous Materials Control Act : Class 4 - Flammable liquid
Substance, group or criteria: Class 4: Type 3 Petroleum (Non water-soluble liquid) (2000 l)
Designated quantity: 2000 L

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 : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Japan inventory : At least one component is not listed.

Section 15. Regulatory information

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 : 3 June 2013

C. Version : 1

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