RAKU® TOOL EP-2306 Resin

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/18/2018 Revision date: 04/05/2021 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : RAKU® TOOL EP-2306 Resin

Product code : 07.03.0018

1.2. Recommended use and restrictions on use

Use of the substance/mixture : model building material

1.3. Supplier

RAMPF Group, Inc.

49037 Wixom Tech Drive

Wixom, 48393

T 2482950223 - F 2482950224

1.4. Emergency telephone number

Emergency number : CHEMTREC 1-800-424-9300 or +1-703-527-3887 CCN 649907

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation Category 2	Causes skin irritation
Serious eye damage/eye irritation Category 2	Causes serious eye irritation
Skin sensitization, Category 1	May cause an allergic skin reaction
Hazardous to the aquatic environment - Chronic Hazard Category 2	Toxic to aquatic life with long lasting effects

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) :
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :
Avoid breathing dust, fume, gas, mist, spray, vapors.
Wear eye protection, protective gloves.
If on skin: Wash with plenty of With plenty of water and soap thoroughly after handling.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Take off contaminated clothing and wash it before reuse.
Dispose of contents/container to an approved waste disposal plant

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700)	(CAS-No.) 25068-38-6	< 1	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317 Aquatic Acute 2, H401
Bisphenol F Epoxy Resin	(CAS-No.) 9003-36-5	10 - 15	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317 Aquatic Chronic 2, H411
1,2,3- propanetriol, glycidyl Ether	(CAS-No.) 90529-77-4	5 - 10	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
Diisopropylnaphthalene isomers	(CAS-No.) 38640-62-9	<= 1	Eye Irrit. 2, H319 Asp. Tox. 1, H304 Aquatic Chronic 1, H410 Aquatic Chronic 2, H411

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Immediately remove any clothing soiled by product. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after inhalation : If experiencing respiratory symptoms: Move to fresh air in case of accidental inhalation of vapors or decomposition products. If experiencing respiratory symptoms: Call a poison center or a doctor.

First-aid measures after skin contact : If skin irritation occurs: Get medical advice/attention. Wash immediately with lots of water. Soap may be used.

First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are seperated and that the eye is being irrigated. Then remove contact lenses, if easily removable, and continue eye irrigation for not less than 15 minutes. Get medical attention. . Consult an ophtalmologist if irritation persists.

First-aid measures after ingestion : Do not induce vomiting. Immediately after ingestion: give lots of water to drink. Rinse mouth with water. Never give anything by mouth to an unconscious person. Immediately consult a doctor/medical service.

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Dry chemical, CO2, or water spray or regular foam.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : Hazardous combustion products: Carbon oxides (CO,CO2) Nitrogen oxides Isocyanates Hydrogen cyanide.

Reactivity : Exothermic reaction with: Bases, Amines, Alcohols.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Wear fire/flame resistant/retardant clothing. Use breathing apparatus with independent air supply. Wear full protective suit.

Other information : Collect contaminated fire-fighting water, avoid any release into the sewerage.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Clean up any spills as soon as possible, using an absorbent material to collect it. Keep upwind. Ventilate area. Avoid breathing mist or vapor.

6.1.1. For non-emergency personnel

Protective equipment : Wear proctective equipment as described in section 8.

Emergency procedures : Do not handle until all safety precautions have been read and understood.

6.1.2. For emergency responders

Protective equipment	:	Use personal protective equipment as required.
Emergency procedures	:	Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.2. Environmental precautions

Avoid release to the environment, do not allow to enter drains or water courses . Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	:	Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite. Carefully collect the spill/leftovers. This material and its container must be disposed of in a safe way, and as per local legislation.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Keep container tightly closed. Avoid contact with skin, eyes and clothing. Provide good ventilation in process area to prevent formation of vapor.
Hygiene measures	:	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	:	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Protect from sunlight.
Incompatible materials	:	Incompatible with : Bases, Amines, Alcohols.
Storage temperature	:	5 - 40 °C
Storage area	:	Store in a well-ventilated place. Keep out of direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Diisopropylnaphthalene isomers (38640-62-9)		
Not applicable		

Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) (25068-38-6)		
DNEL	DNEL	12.3 mg/m³ Acute, inhalation
PNEC	PNEC	0.196 mg/l soil

Bisphenol F Epoxy Resin (9003-36-5)		
DNEL	DNEL	29.39 mg/m³ long-term, inhalation
PNEC	PNEC	0.003 mg/l freshwater

1,2,3- propanetriol, glycidyl Ether (90529-77-4)
Not applicable

8.2. Appropriate engineering controls

Appropriate engineering controls	:	Ensure good ventilation of the work station. Provide local exhaust or general room ventilation.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wear recommended personal protective equipment. Ensure that eyewash stations and safety s are close to the workstation location.

Hand protection:

Chemically resistant protective gloves. butyl rubber (Butyl) -=0.7 mm thickness; Nitrile rubber (Nitrile) - 0.4 mm thickness; Select the appropriate glove material adhering to the breakthrough time, permeation rate and the degradation. Because of the great variety of glove types, the manufacturer's instructions for use must be adhered to.

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Wear suitable protective clothing. Wear impervious rubber safety shoes

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Other information:

Do not eat, drink or smoke when using this product. Use good personal hygiene practices. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated work clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Paste.
Color	:	brown
Odor	:	odorless
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	> 200 °C
Flash point	:	> 100 °C
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Specific gravity / density	:	0.8 g/cm³
Solubility	:	Insoluble in water.
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	> 200 °C
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	250000 - 350000 mPa.s
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Exothermic reaction with: Bases, Amines, Alcohols.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat (>200°C).

10.5. Incompatible materials

alcohols. Amines. Strong oxidizing agent. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Additional information : Based on available data, the classification criteria are not met

Diisopropylnaphthalene isomers (38640-62-9)	
LD50 oral rat	> 4000 mg/kg
LD50 dermal rat	> 4000 mg/kg
LC50 inhalation rat (mg/l)	> 5.6 mg/l/4h

Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) (25068-38-6)	
LD50 oral rat	> 2000 mg/kg (Rat; OECD 420: Acute Oral toxicity – Acute Toxic Class Method; Experimental value)
LD50 dermal rat	> 2000 mg/kg (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)

Bisphenol F Epoxy Resin (9003-36-5)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rat	> 2000 mg/kg

1,2,3- propanetriol, glycidyl Ether (90529-77-4)	
LD50 oral rat	> 5000 mg/kg

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity – single exposure : Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity – repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified
(Based on available data, the classification criteria are not met)

Viscosity, kinematic : No data available

SECTION 12: Ecological information

12.1. Toxicity

Diisopropylnaphthalene isomers (38640-62-9)	
LC50 fish 1	0.5 mg/l 96 h, OECD 203
EC50 other aquatic organisms 1	0.16 mg/l Daphina Magna, 48 h, DIN 38412, part 11
ErC50 (algae)	0.15 mg/l 72 h, OECD 201

Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) (25068-38-6)	
LC50 fish 2	2.3 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Oncorhynchus mykiss; Semi-static system; Fresh water; Experimental value)

Bisphenol F Epoxy Resin (9003-36-5)	
LC50 fish 1	2.54 mg/l 96 h
EC50 Daphnia 1	2.55 mg/l 48 h, Daphnia magna
ErC50 (algae)	> 1000 mg/l 72 h

1,2,3- propanetriol, glycidyl Ether (90529-77-4)	
LC50 fish 1	24 mg/l Zebra danio (96 hours)
EC50 Daphnia 1	76 mg/l water flea (24 hours)
EC50 other aquatic organisms 1	110 mg/l Algae (72 hours)

12.2. Persistence and degradability

Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) (25068-38-6)	
Persistence and degradability	Not readily biodegradable in water. Hydrolysis in water. Low potential for adsorption in soil.

Bisphenol F Epoxy Resin (9003-36-5)	
Persistence and degradability	Biodegradable (OECD): 301 B, 16%, 28 d.

12.3. Bioaccumulative potential

Diisopropylnaphthalene isomers (38640-62-9)	
Bioconcentration factor (BCF REACH)	> 500

Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) (25068-38-6)	
BCF other aquatic organisms 1	3-31,BCF
Log Pow	>= 2.918 (Experimental value; EU Method A.8: Partition Coefficient; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

Bisphenol F Epoxy Resin (9003-36-5)	
Log Pow	3.3

1,2,3- propanetriol, glycidyl Ether (90529-77-4)	
Log Pow	-0.269 - 0.15

12.4. Mobility in soil

Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) (25068-38-6)	
Surface tension	0.0587-0.0589,20 °C
Log Koc	Koc,SRC PCKOCWIN v2.0; 445; QSAR; log Koc; SRC PCKOCWIN v2.0; 2.65; QSAR

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Where possible recycling is preferred to disposal.
Can be incinerated, when in compliance with local regulations. Dispose of contents/container in accordance with licensed collector's sorting instructions. Completely empty contents of drums before discarding.

Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Dispose of at authorized waste collection point.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III

UN-No.(DOT) : UN3082

Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s.

Class (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Packing group (DOT) : III - Minor Danger

Hazard labels (DOT)	:	9 - Class 9 (Miscellaneous dangerous materials)

Dangerous for the environment	:	Yes
Marine pollutant	:	Yes

DOT Packaging Non Bulk (49 CFR 173.xxx)	:	203
DOT Packaging Bulk (49 CFR 173.xxx)	:	241
DOT Packaging Exceptions (49 CFR 173.xxx)	:	155
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	No limit
DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
Emergency Response Guide (ERG) Number	:	171
Other information	:	No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

Diisopropylnaphthalene isomers (38640-62-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) (25068-38-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).

Bisphenol F Epoxy Resin (9003-36-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).

1,2,3- propanetriol, glycidyl Ether (90529-77-4)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Diisopropylnaphthalene isomers (38640-62-9)
Listed on the Canadian DSL (Domestic Substances List)

Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) (25068-38-6)
Listed on the Canadian DSL (Domestic Substances List)

Bisphenol F Epoxy Resin (9003-36-5)
Listed on the Canadian DSL (Domestic Substances List)

1,2,3- propanetriol, glycidyl Ether (90529-77-4)
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

EU-Regulations

No additional information available

National regulations

RAKU® TOOL EP-2306 Resin
All chemical substances in this product are listed in the EPA (Enviromenta Protection Agency) TSCA (Toxic Substances Control Act) inventory or are exempt.

15.3. US State regulations

⚠ **WARNING:** This product can expose you to Reaction Product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 04/05/2021

Full text of H-phrases:

H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product