

SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Chemical Name

Product Name / Trade Name

CAS No.

Epoxy Resin

EPO-Guard™ EPO-200 Part A

Epoxy Resin

Recommended use of the chemical and restrictions on use

Identified Use(s)

Used in applications such as: Adhesive. Casting. Tooling. Civil engineering.

Uses Advised Against

None

Details of the supplier of the safety data sheet

Company Identification

Res-Tek, Inc.

110 Riverside Drive

Cartersville, Georgia 30120

United States of America

Telephone

1-888-737-8351 / 1-770-427-4034

Emergency telephone number

CHEMTREC 24 hr. 1-800-424-9300 / 1 (703) 527-3887 (Collect calls accepted)

SECTION 2: HAZARDS IDENTIFICATION

Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Skin irritation – Category 2

Eye irritation – Category 2A

Skin sensitization – Sub-category 1B

Label elements

Hazard pictograms



Signal Word(s)

WARNING

Hazard Statement(s)

Causes skin irritation.

May cause an allergic skin reaction.

Causes serious eye irritation.

Hazards not otherwise classified

May cause sensitization by skin contact.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Liquid epoxy resin. This product is a substance.

Component	CAS Number	Concentration
Propane, 2,2-bis[p=(2,3-epoxypropoxy)phenyl]-, polymers	25085-99-8	100%

SECTION 4: FIRST AID MEASURES



Description of first aid measures

General advice

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation

Move person to fresh air; if effects occur, consult a physician.

Skin Contact

Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Eye Contact

Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

Ingestion

No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed. Notes to physician

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

Unsuitable extinguishing media

Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous combustion products

During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Phenolics. Carbon monoxide. Carbon dioxide.

Unusual fire and explosion hazards

Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is emitted when burned without sufficient oxygen.

Special protective equipment for fire-fighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Advice for firefighters. Fire fighting procedures

Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.

Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and material for containment and cleaning up

Contain spilled material if possible. Absorb with materials such as: Sand. Polypropylene fiber products. Polyethylene fiber products. Remove residual with soap and hot water. Collect in suitable and properly labeled containers. Residual can be removed with solvent. Solvents are not recommended for clean-up unless the recommended exposure guidelines and safe handling practices for the specific solvent are followed. Consult appropriate solvent Safety Data Sheet for handling information and exposure guidelines. See Section 13, Disposal Considerations, for additional information.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid prolonged or repeated contact with skin. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Application of a direct flame to a container of liquid epoxy resin can also cause explosion and/or fire. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage

Store at moderate temperatures.

Storage stability

Storage temperatures: 2 - 43 °C (36 – 109 °F)
Shelf life: use within 24 months.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

None established.

Exposure controls

Engineering controls

Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Respiratory protection

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Eye/face protection

Use safety glasses (with side shields).

Skin and hand protection

Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Neoprene. Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance / Physical state

Viscous. Liquid.

Color

Colorless to yellow

Odor

Odorless to mild.

Odor threshold

Not available.

pH

Not applicable.

Melting point /range

Not applicable.

Freezing point

Not applicable

Boiling point/range

320 °C (608 °F) *Differential Scanning Calorimetry (DSC) Decomposition.*

Flash Point

closed cup 264 - 268 °C (507 - 514 °F) at 102.89 hPa *EC Method A9*

Evaporation rate (Butyl Acetate = 1)

Not available.

Flammability (solid, gas)

No.

Lower explosion limit

Not determined.

Upper explosion limit

Not determined.

Vapor pressure

<0.0000001 Pa *EC Method A4*

Relative vapor density (air = 1)

Not determined.

Relative density (water = 1)

1.16 at 20°C (68° F)/ 20°C Literature

Water solubility	5.4 – 8.4 mg/l at 20° C (68° F) EU Method A.6 (water solubility)
Partition coefficient: n-octanol/water	Log Pow: 3.242 Estimated
Autoignition temperature	Not determined.
Decomposition temperature	No data available.
Dynamic viscosity	11,000 – 14,000mPa.s at 77°F (25°C) ASTM D 445
Molecular weight	No data available.
Partical size	No dertermined.

Note; The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	No data available.
Chemical stability	Stable under recommended storage conditions. See Storage, Section 7.
Possibility of hazardous reactions	Will not occur by itself. Masses of more than one pound (0.5 kg) of product plus an aliphatic amine will cause irreversible polymerization with considerable heat buildup.
Conditions to avoid	Avoid short term exposures to temperatures above 300 °C Potentially violent decomposition can occur above 350 °C Avoid prolonged exposure to temperatures above 250 °C Generation of gas during decomposition can cause pressure in closed systems. Pressure build-up can be rapid.
Incompaible materials	Avoid contact with oxidizing materials. Avoid contact with: Acids. Bases. Avoid unintended contact with amines.
Hazardous decomposition products	Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition. Uncontrolled exothermic reaction of epoxy resins release phenolics, carbon monoxide, and water.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Likely routes of exposure

Serious eye damage/eye irritation	May cause eye irritation. Corneal injury is unlikely.
Skin corrosion/irritation	Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin irritation with local redness.
Respiratory sensitization	No data available.

Acute toxicity

Acute oral toxicity	Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. LD50, Rat, > 15,000 mg/kg
Acute dermal toxicity	Prolonged skin contact is unlikely to result in absorption of harmful amounts. LD50, Rabbit, 23,000 mg/kg
Acute inhalation toxicity	At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material, mist or aerosols may cause respiratory irritation. The LC50 has not been determined.
Sensitization	For similar material(s): Has caused allergic skin reactions in humans. Has demonstrated the potential for contact allergy in mice.

Specific target organ systemic toxicity (single exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific target organ systemic toxicity (repeated exposure)

Except for skin sensitization, repeated exposures to low molecular weight epoxy resins of this type are not anticipated to

Carcinogenicity

cause any significant adverse effects.

Many studies have been conducted to assess the potential carcinogenicity of diglycidyl ether of bisphenol A (DGEBA). Indeed, the most recent review of the available data by the International Agency for Research on Cancer (IARC) has concluded that DGEBA is not classified as a carcinogen. Although some weak evidence of carcinogenicity has been reported in animals, when all of the data are considered, the weight of evidence does not show that DGEBA is carcinogenic.

Teratogenicity

Resins based on the diglycidyl ether of bisphenol A (DGEBA) did not cause birth defects or other adverse effects on the fetus when pregnant rabbits were exposed by skin contact, the most likely route of exposure, or when pregnant rats or rabbits were exposed orally.

Reproductive toxicity

In animal studies, did not interfere with reproduction.

Mutagenicity

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Aspiration hazard

Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY

Propane, 2,2-bis[p-(2.3-epoxypropoxy)phenyl]-, polymers

Acute inhalation toxicity

The LC50 has not been determined.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Acute toxicity in fish

Material is moderately toxic to aquatic organisms on the acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, 2 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, 1.8 mg/l

Acute toxicity in algae/aquatic plants

ErC50, Scenedesmus capricornutum (fresh water algae), static test, 72 Hour, Growth rate inhibition, 11 mg/l

Toxicity to bacteria

IC50 (18h) : >42.6 mg/l
Bacteria, Respiration rates.

Chronic aquatic toxicity
Chronic toxicity to aquatic invertebrates

Persistence and degradability

Biodegradability

Biodegradation
Exposure time
Method
Theoretical oxygen demand
Photodegradation

Mobility in soil

Bioaccumulation potential

Bioaccumulative

Partition coefficient: n-octanol/water(log Pow)

MATC (Maximum Acceptable Toxicant Level), Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 0.55 mg/l

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. 10-day Window: Not applicable 12%

28 d

OECD Test Guideline 302B or equivalent.

2.35 mg/mg estimated.

Test type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Atmospheric half-life: 1.92 hour

Method: estimated.

Potential for mobility in soil is low (Koc between 500 and 2000). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process. **Partition coefficient(Koc):** 1800 - 4400 Estimated.

Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). 3.242 at 25 °C Estimated.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device.

SECTION 14: TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG)

UN/ID number

UN 3082

Proper shipping name

Environmentally hazardous substance, liquid, N.O.S., (Epoxy Resin)

Class or division

9

Packing group

III

Marine pollutant

Epoxy resin

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC code

Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO)

UN/ID number

UN 3082

Proper shipping name

Environmentally hazardous substance, liquid, N.O.S., (Epoxy Resin)

Class or division

9

Packing group

III

Further Information

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

United States TSCA Inventory (TSCA)

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

SECTION 16: OTHER INFORMATION

Product literature

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure. Additional information on this and other products may be obtained by visiting our web page.

Hazard Rating System NFPA

Health: 1
Flammability: 1
Reactivity: 2

Information source and references

This SDS is prepared by Res-Tek from information supplied by internal references within our company.

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