

# KNFR Resin

## Safety Data Sheet

According to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

Date of issue: 12/28/2018

Revision date: 03/17/2020

Version: ER-KNFR-2020a

### SECTION 1: Identification

#### Identification

**Product form** : Mixture  
**Product name** : KNFR Resin  
**Product code** : ER-KNFR, ER-KNFR-6  
**Chemical family** : Epoxy resin adhesive mixture

#### Relevant identified uses of the substance or mixture and uses advised against

**Recommended use** : Epoxy adhesive

#### Details of the supplier of the safety data sheet

##### Manufacturer

Gougeon Brothers, Inc  
100 Patterson Ave.  
Bay City, MI 48706 - U.S.A.  
T 888-377-6738 or 989-684-7286

##### Distributor

#### Emergency telephone number

**Emergency number** : CHEMTREC 1 (800) 424-9300  
CHEMTREC International +1 (703) 527-3887 24 hr

### SECTION 2: Hazard identification

#### Classification of the substance or mixture

Skin Irrit. 2  
Eye Irrit. 2A  
Skin Sens. 1  
Aquatic Chronic 2

#### Label elements

##### Hazard pictograms (GHS)



GHS07

GHS09

##### Signal word (GHS)

Warning

##### Hazard statements (GHS)

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Toxic to aquatic life with long lasting effects.

##### Precautionary statements (GHS)

Avoid breathing dust/fume/gas/mist/vapours/spray. Wash hands, forearms and face thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. If on skin: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Collect spillage. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

#### Other hazards

No additional information available

#### Unknown acute toxicity

Not applicable

### SECTION 3: Composition/information on ingredients

#### Substances

Not applicable

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### Mixtures

Name	Product identifier	%
Bisphenol A-epichlorohydrin polymer	(CAS-No.) 25068-38-6	65 - 85
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	(CAS-No.) 68609-97-2	7 - 13
Dimethyl silicone polymer with silica	(CAS-No.) 67762-90-7	1 - 5

The exact chemical identity and/or exact percentage (concentration) of each ingredient may be held as confidential business information (CBI). Any ingredient not disclosed in this section may have been determined not to be hazardous to health or the environment, or it may be present at a level below its disclosure threshold.

## SECTION 4: First-aid measures

### Description of first aid measures

- First-aid measures after inhalation** : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact** : IF ON SKIN: Wash with plenty of Water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact** : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion** : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

### Most important symptoms and effects, both acute and delayed

- Symptoms/effects after inhalation** : May cause irritation to the respiratory tract.
- Symptoms/effects after skin contact** : Causes skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause an allergic skin reaction.
- Symptoms/effects after eye contact** : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Symptoms/effects after ingestion** : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

### Indication of any immediate medical attention and special treatment needed

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## SECTION 5: Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Foam. Carbon dioxide. Dry chemical.
- Unsuitable extinguishing media** : Do not use a heavy water stream.

### Special hazards arising from the substance or mixture

- Fire hazard** : Products of combustion may include, and are not limited to: oxides of carbon. Oxides of nitrogen. Silicon compounds. Formaldehyde.
- Reactivity** : No dangerous reactions known under normal conditions of use.

### Advice for firefighters

- Firefighting instructions** : Under fire conditions closed containers may rupture or explode.
- Protection during firefighting** : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- General measures** : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

### For non-emergency personnel

No additional information available

### For emergency responders

No additional information available

### Environmental precautions

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

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### Methods and material for containment and cleaning up

- For containment** : Stop leak if safe to do so. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.
- Methods for cleaning up** : Sweep or shovel spills into appropriate container for disposal. Warm, soapy water or non-flammable, safe solvent may be used to clean residual. Provide ventilation.

### Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

## SECTION 7: Handling and storage

### Precautions for safe handling

- Precautions for safe handling** : Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Provide adequate ventilation. When mixed with epoxy resin this product causes an exothermic reaction, which in large masses, can produce enough heat to damage or ignite surrounding materials and emit fumes and vapors that vary widely in composition and toxicity.
- Hygiene measures** : Wash contaminated clothing before reuse. Always wash hands after handling the product.

### Conditions for safe storage, including any incompatibilities

- Storage conditions** : Keep out of the reach of children. Keep container tightly closed. Store in dry, cool, well-ventilated area. Avoid high temperatures. Protect from moisture.
- Storage temperature** : 40 - 120 °F / 4 - 49 °C

## SECTION 8: Exposure controls/personal protection

### Control parameters

<b>Bisphenol A-epichlorohydrin polymer (25068-38-6)</b>		
Not applicable		
<b>Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. (68609-97-2)</b>		
Not applicable		
<b>Dimethyl silicone polymer with silica (67762-90-7)</b>		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> inhalable 3 mg/m <sup>3</sup> respirable fraction
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	6 mg/m <sup>3</sup> Amorphous silica 15 mg/m <sup>3</sup> Total dust 5 mg/m <sup>3</sup> respirable fraction

### Exposure controls

- Appropriate engineering controls** : Ensure good ventilation of the work station.
- Hand protection** : Wear suitable gloves resistant to chemical penetration.
- Eye protection** : Wear eye/face protection.
- Skin and body protection** : Wear suitable protective clothing.
- Respiratory protection** : In case of insufficient ventilation, wear suitable respiratory equipment. 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.
- Environmental exposure controls** : Avoid release to the environment.
- Other information** : Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

- Physical state** : Solid
- Appearance** : Gel / paste
- Colour** : Cloudy / Off-white
- Odour** : Mild
- Odour threshold** : No data available
- pH** : No data available

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<b>Melting point</b>	: No data available
<b>Freezing point</b>	: No data available
<b>Boiling point</b>	: > 400 °F / 204 °C Estimated based on ingredient data.
<b>Flash point</b>	: > 200 °F / 93 °C Estimated based on ingredient data.
<b>Relative evaporation rate (butylacetate=1)</b>	: No data available
<b>Flammability (solid, gas)</b>	: Not flammable
<b>Vapour pressure</b>	: No data available
<b>Relative vapour density at 20 °C</b>	: No data available
<b>Relative density (water = 1)</b>	: 1.12
<b>Solubility</b>	: No data available
<b>Partition coefficient n-octanol/water</b>	: No data available
<b>Auto-ignition temperature</b>	: No data available
<b>Decomposition temperature</b>	: No data available
<b>Viscosity, kinematic</b>	: Gel;-paste
<b>Viscosity, dynamic</b>	: No data available
<b>Explosive limits</b>	: No data available
<b>Explosive properties</b>	: No data available
<b>Oxidising properties</b>	: No data available

### Other information

<b>VOC content</b>	: ASTM D 2369-07 was used to determine the Volatile Content of mixed epoxy resin and hardener. Refer to the hardener SDS for information about the total volatile content of the resin/hardener system.
<b>Bulk density</b>	: 9.33 lb/gal (1.12 kg/L)

## SECTION 10: Stability and reactivity

<b>Reactivity</b>	: No dangerous reactions known under normal conditions of use.
<b>Chemical stability</b>	: Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	: No dangerous reactions known under normal conditions of use. A mass of more than one pound of product plus an aliphatic amine will cause irreversible polymerization with significant heat buildup. Strong acids, bases, amines and mercaptans can cause polymerization.
<b>Conditions to avoid</b>	: Heat. Incompatible materials. On heating, there is a risk of bursting due to internal pressure build-up.
<b>Incompatible materials</b>	: Amines. Mercaptans. Strong acids. Strong bases.
<b>Hazardous decomposition products</b>	: May include, and are not limited to: oxides of carbon. Oxides of nitrogen. Silicon compounds. Formaldehyde.

## SECTION 11: Toxicological information

### Information on toxicological effects

<b>Bisphenol A-epichlorohydrin polymer (25068-38-6)</b>	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	2200 mg/kg

<b>Oxirane, mono[(C12-14-alkyloxy)methyl] derivs. (68609-97-2)</b>	
LD50 oral rat	17000 mg/kg
LD50 dermal rabbit	> 4500 mg/kg

<b>Dimethyl silicone polymer with silica (67762-90-7)</b>	
LD50 oral rat	> 5000 mg/kg OECD 401
LD50 dermal rabbit	> 2000 mg/kg OECD 402

<b>Acute toxicity (oral)</b>	: Not classified.
<b>Acute toxicity (dermal)</b>	: Not classified.
<b>Acute toxicity (inhalation)</b>	: Not classified.
<b>Skin corrosion/irritation</b>	: Causes skin irritation.
<b>Serious eye damage/irritation</b>	: Causes serious eye irritation.
<b>Respiratory or skin sensitization</b>	: May cause an allergic skin reaction.

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<b>Germ cell mutagenicity</b>	: Not classified.
<b>Carcinogenicity</b>	: Not classified.
<b>Reproductive toxicity</b>	: Not classified.
<b>STOT-single exposure</b>	: Not classified.
<b>STOT-repeated exposure</b>	: Not classified.
<b>Aspiration hazard</b>	: Not classified.
<b>Symptoms/effects after inhalation</b>	: May cause irritation to the respiratory tract.
<b>Symptoms/effects after skin contact</b>	: Causes skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause an allergic skin reaction.
<b>Symptoms/effects after eye contact</b>	: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
<b>Symptoms/effects after ingestion</b>	: May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
<b>Other information</b>	: Likely routes of exposure: ingestion, inhalation, skin and eye.

### SECTION 12: Ecological information

#### Toxicity

**Ecology - general** : Toxic to aquatic life with long lasting effects.

#### Persistence and degradability

KNFR Resin	
Persistence and degradability	Not established.

#### Bioaccumulative potential

KNFR Resin	
Bioaccumulative potential	Not established.

#### Mobility in soil

No additional information available

#### Other adverse effects

**Other information** : No other effects known.

Name	Product identifier	Ecotoxicity Classification Information
Bisphenol A-epichlorohydrin polymer	(CAS-No.) 25068-38-6	Aquatic Chronic Cat. 2
Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.	(CAS-No.) 68609-97-2	Not Classified
Dimethyl silicone polymer with silica	(CAS-No.) 67762-90-7	Not Classified

### SECTION 13: Disposal considerations

#### Waste treatment methods

**Product/Packaging disposal recommendations** : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

### SECTION 14: Transport information

#### Department of Transportation (DOT) and Transportation of Dangerous Goods (TDG)

In accordance with DOT/TDG

Not regulated

#### Transport by sea

In accordance with IMDG

UN-No. (IMDG) : 3077  
Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
Proper Shipping Name - Addition : Epoxy resin  
Class (IMDG) : 9 - Miscellaneous dangerous substances and articles

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Packing group (IMDG) : III  
EmS-No. (1) : F-A, S-F  
Marine pollutant : Yes

### Transport by air

In accordance with IATA  
UN-No. (IATA) : 3077  
Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.  
Proper Shipping Name - Addition : Epoxy resin  
Class (IATA) : 9 - Miscellaneous Dangerous Goods  
Packing group (IATA) : III  
Marine pollutant : Yes

## SECTION 15: Regulatory information

### Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

#### Bisphenol A-epichlorohydrin polymer (25068-38-6)

EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
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#### Dimethyl silicone polymer with silica (67762-90-7)

EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
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#### Epichlorohydrin (106-89-8)


Listed on the United States SARA Section 302  
Subject to reporting requirements of United States SARA Section 313

CERCLA RQ	100 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	1000 lb
SARA Section 313 - Emission Reporting	0.1 %

### International regulations

No additional information available

### US State regulations

 **WARNING:** This product can expose you to Epichlorohydrin, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### Epichlorohydrin (106-89-8)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances  
U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

Date of issue : 12/28/2018  
Revision date : 03/17/2020  
Version : ER-KNFR-2020a  
Other information : None.

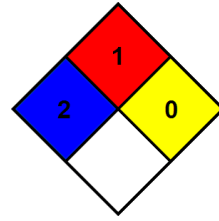
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**NFPA health hazard** : 2  
**NFPA fire hazard** : 1  
**NFPA reactivity** : 0



Hazard Rating  
**Health** : 2 Moderate Hazard  
**Flammability** : 1 Slight Hazard  
**Physical** : 0 Minimal Hazard

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