



SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1 Product identifier** EPO-TEK EK1000
 GHS Product Identifier EPO-TEK EK1000
 Chemical Name Not applicable
 Trade name EPO-TEK EK1000
 CAS No. Mixture
 EINECS No. Mixture
 REACH Registration No. Not available
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
 Identified use(s)
 Uses advised against Users are recommended to seek further advice.
- 1.3 Details of the supplier of the safety data sheet**
 Company Identification Epoxy Technology, Inc.
 14 Fortune Drive, Billerica MA 01821 USA
 Telephone (978) 667-3805
 E-Mail (competent person) techserv@epotek.com
- 1.4 Emergency telephone number – Chemtel Inc.**
 Emergency Phone No. (800) 255-3924, (813) 248-0585

**SECTION 2: HAZARDS IDENTIFICATION**

- 2.1 Classification of the substance or mixture**
- 2.1.1 Regulation (EC) No. 1272/2008 (CLP)** - Acute toxicity 5, Skin Irritation 2, Eye Damage 2A, Skin Sensitizer 1(3.1/5, 3.2/2, 3.3/2A, 3.4/1)
- 2.1.2 Directive 67/548/EEC & Directive 1999/45/EC** - HARMFUL, IRRITANT
- 2.2 Label elements**
- 2.2.1 Label elements According to Regulation (EC) No. 1272/2008 (CLP)**
 GHS Product Identifier (EU)
- Hazard pictogram(s)  Signal word(s) **DANGER**
- Hazard statement(s) H303: May be harmful if swallowed.
 H315: Causes skin irritation.
 H317: May cause an allergic skin reaction.
 H319: Causes serious eye irritation.
 H336: May cause drowsiness or dizziness.
 H411: Toxic to aquatic life with long lasting effects.
 EUH205: Contains epoxy constituents. See information supplied by the manufacturer.
- Precautionary statement(s) P202: Do not handle until all safety precautions have been read and understood.
 P280: Wear protective gloves/protective clothing/eye protection/face protection.
 P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
 P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
 P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P305: IF IN EYES: Get immediate medical attention.
 P312: Call a POISON CENTER or doctor if you feel unwell.
 P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.
 P501: Dispose of contents/container to: Send to a licensed recycler, reclaimer or incinerator.
- 2.2.2 Label elements According to Directive 67/548/EEC & Directive 1999/45/EC**
- Hazard Symbol 
- Risk Phrases R22: Harmful if swallowed.
 R36/38: Irritating to eyes and skin.
 R41: Risk of serious damage to eyes.
 R43: May cause sensitization by skin contact.
 R51: Toxic to aquatic organisms.
 R67: Vapors may cause drowsiness and dizziness.

Safety Phrases S2: Keep out of the reach of children.
 S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S28: After contact with skin, wash immediately with plenty of soap and water.
 S36/39: Wear suitable protective clothing and eye/face protection.
 S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S53: Avoid exposure - obtain special instructions before use.
 S56: Dispose of this material and its container to hazardous or special waste collection point.

2.3 Other hazards **GHS Classification (USA): Hazardous under OSHA Hazard Communication Standard – Corrosive (Eyes), Irritant (Skin)**
HMIS: Health-2, Flammability-1 Reactivity – 1



WHMIS Classification (Canada): Hazardous under WHMIS Class D2A – Material With Other Toxic Effects
Class E – Corrosive



2.4 Additional Information None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

EC Classification No. 1272/2008/EC

Hazardous ingredient(s)	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard pictogram(s) and Hazard statement(s)
Reactive Diluent	5-10	Proprietary	Proprietary	NA	3.1/4, 3.3/1, 3.8/3, H302, H318, H336
Specialty Epoxy Resin	<5	Proprietary	None	NA	3.1/5, 3.2/2, 3.4/1, 3.3/2A H303, H315, H317, H319
Epoxy Phenol Novolac	5-10	28064-14-4	None	NA	3.1/5, 3.2/2, 3.4/1, 3.3/2, 4.1/2 H303, H315, H317, H319, H411, EUH205

EC Classification No. 67/548/EEC

Hazardous ingredient(s)	%W/W	CAS No.	EC No.	REACH Registration No.	Hazard pictogram(s) and Risk (R) Phras(es)
Reactive Diluent	5-10	Proprietary	Proprietary	NA	Xn, Xi: R22, R41, R67
Specialty Epoxy Resin	<5	Proprietary	None	NA	Xi: R36/38, R43
Epoxy Phenol Novolac	5-10	28064-14-4	None	NA	Xn, Xi; R22, R36/38, R43, R51

3.3 Additional Information

- For full text of H phrases see section 16. For full text of R phrases see section 16. Non-Hazardous ingredients are not listed and make up the balance of the product.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation Remove patient from exposure. Keep patient at rest and give oxygen if breathing difficult. If symptoms develop, obtain medical attention.

Skin Contact	Causes skin irritation. May cause an allergic skin reaction. Remove contaminated clothing immediately and drench affected skin with plenty of water, then wash with soap and water. If irritation (redness, rash, blistering) develops, get medical attention.
Eye Contact	May cause corneal injury. May cause corneal damage. Remove any contact lenses. Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.
Ingestion	Ingestion may cause irritation of the gastrointestinal tract. If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting. Make victim drink plenty of water. Get immediate medical attention.
4.2 Most important symptoms and effects, both acute and delayed	Acute: Causes serious eye irritation. Causes skin irritation. Ingestion may cause irritation of the gastrointestinal tract. May cause sensitization by skin contact. Delayed and chronic effects: May cause corneal damage. Discolors skin and mucous membranes.
4.3 Indication of the immediate medical attention and special treatment needed	Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Combustible but not readily ignited. Acrid smoke. Flash Point > 93.3°C / 200°F.

5.1 Extinguishing media	
Suitable Extinguishing Media	Extinguish preferably with dry chemical, foam or water spray.
Unsuitable Extinguishing Media	None known.
5.2 Special hazards arising from the substance or mixture	A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions. Inhalation of metal fumes from fire may result in metal fume disease.
5.3 Advice for fire-fighters	Extinguish preferably with dry chemical, foam or water spray. Launder contaminated protective devices.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures	Ensure full personal protection (including respiratory protection) during removal of spillages. Evacuate if necessary.
6.2 Environmental Precautions	Ventilation recommended.
6.3 Methods and material for containment and cleaning up	Transfer to a lidded container for disposal or recovery. Re-use/recycling of waste highly recommended.
6.4 Reference to other sections	See Also Section 7, 8, 13.
6.5 Additional Information	None

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling	Avoid ingestion. Use only in well-ventilated areas. Avoid inhalation of high concentrations of vapors. Keep away from oxidizing agents. Keep away from fire, sparks and heated surfaces - no smoking.
7.2 Conditions for safe	Protect from sunlight. Store in a well-ventilated place. Do not use or store near

storage, including any incompatibilities heat or open flame. Do not store and transport with oxidizers etc.

Storage Temperature Ambient.

Storage Life Not available

Incompatible materials Oxidizing agents, Can react violently if in contact with acids, alkalis, reducing agents and heavy metals.

7.3 Specific end use(s) Consult the supplier.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note:
No occupational exposure limits have been established for this product or any listed components.						

OELs are not available for non-listed components.

8.1.2 Biological limit value





Limit value type (country of origin)	SUBSTANCE.	CAS No.	Biological limit value	Note:
USA	None	None	None	None

8.1.3 PNECs and DNELs

DNEL	Oral	Inhalation	Dermal
Industry - Long Term – Local effects	NA	NA	NA
Industry - Long Term - Systemic effects	NA	NA	NA
Industry - Short term - Local effects	NA	NA	NA
Industry - Short term - Systemic effects	NA	NA	NA
Professional - Long Term - Local effects	NA	NA	NA
Professional - Long Term – Systemic effects	NA	NA	NA
Professional - Short term - Local effects	NA	NA	NA
Professional - Short term - Systemic effects	NA	NA	NA
Consumer - Long Term - Local effects	NA	NA	NA
Consumer - Long Term - Systemic effects	NA	NA	NA
Consumer - Short term - Local effects	NA	NA	NA
Consumer - Short term - Systemic effects	NA	NA	NA

	PNEC
Aquatic Compartment	Not available
Terrestrial Compartment	Not available
Atmospheric Compartment	Not available

8.2.2 Personal protection equipment

	Respirators	Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely.
	Eye Protection	Safety glasses.
	Gloves	Wear protective gloves.
	Body protection	Wear suitable protective clothing and gloves.
	Engineering Controls	Use adequate ventilation and/or engineering controls in high temperature processing to prevent exposure to vapors.
	Other	Remove contaminated, saturated clothing immediately. Contaminated clothing should be thoroughly cleaned.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Silver paste	Color	Silver paste
Odor	Mild / Slight	Odor Threshold (ppm)	Not available
Melting Point (°C) / Freezing Point (°C)	Not available	Boiling point/boiling range (°C):	Not available
Flash Point (°C)	> 200°F / 93°C	Explosive limit ranges	Not available
Auto Ignition Temperature (°C)	Not available	Decomposition Temperature (°C)	Not available
Explosive properties	Not available	Oxidizing properties	Not available
Flammability (solid, gas)	Not available	pH (Value)	Not available
Evaporation rate	Not available	Vapor Pressure (mm Hg)	Not available
Vapor Density (Air=1)	Not available	Density (g/ml)	Not available
Solubility (Water)	Practically insoluble.	Solubility (Other)	Not available
Partition Coefficient (n-Octanol/water)	Not available	Viscosity (mPa.s)	Paste

9.2 Other information Volatile Organic Chemical (VOC) Content – Not available.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Contains epoxy constituents. See information supplied by the manufacturer. May react with incompatible materials.
10.2 Chemical stability	Stable under normal conditions.
10.3 Possibility of hazardous reactions	Can react violently if in contact with - Oxidizing agents. Can react violently if in contact with acids, alkalis, reducing agents and heavy metals.
10.4 Conditions to avoid	Avoid contact with heat and ignition sources.
10.5 Incompatible materials	Bleaching products and comparable oxidizers. Can react violently if in contact with acids, alkalis, reducing agents and heavy metals.
10.6 Hazardous Decomposition Product(s)	Carbon monoxide, Carbon dioxide, Metal fumes and oxides. Thermal decomposition will evolve toxic, irritant and flammable vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

SUBSTANCE.	CAS No.	LD ₅₀ (Oral, Rat)	LC ₅₀ (Inhalation, Rat)	LD50 (Dermal, Rat)
Reactive Diluent	Proprietary	1540 mg/kg	5100 mg/m ³ / 4H	5000 mg/kg (guinea pig)
Specialty Epoxy Resin	Proprietary	Not established	>2000mg/kg<5000mg/kg	Not established
Epoxy Phenol Novolac	28064-14-4	Not established	Not established	Not established

11.1 Information on toxicological effects

11.1.2 Mixtures

Acute toxicity

May be harmful if swallowed. Ingestion may cause irritation of the gastrointestinal tract. May cause drowsiness or dizziness.

Irritation

May cause sensitization by skin contact.

Corrosivity

Not to be expected.

Repeated dose toxicity

Expected to be similar to single exposures.

Carcinogenicity

No data.

Mutagenicity

No data.

Toxicity for reproduction

No data.

11.2 Other information

None

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	No data
12.2 Persistence and degradability	Moderately/partially biodegradable. Not persistent.
12.3 Bioaccumulative potential	Moderately/partially biodegradable.
12.4 Mobility in soil	The product has moderate mobility in soil.
12.5 Results of PBT and vPvB assessment	No data.
12.6 Other adverse effects	No data.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	Disposal should be in accordance with local, state or national legislation. Containers must not be punctured or destroyed by burning, even when empty.
13.2 Additional Information	None

SECTION 14: TRANSPORT INFORMATION

Land transport (ADR/RID) (b)(c)(d)

UN number UN3082
 Environmentally
 Proper Shipping Name Hazardous
 Substance, Liquid, n.o.s.
 Transport hazard class(es) 9

DOT Classification (USA) (c)(d)

UN number
 Proper Shipping Name Not classified as dangerous for
 transport
 Transport hazard class(es) None

Packing Group III
 Hazard label(s) Miscellaneous
 Environmental hazards Marine Pollutant
 Special precautions for user None

Packing Group None
 Hazard label(s) None
 Environmental hazards None
 Special precautions for user None

Sea transport (IMDG) (b)(c)

UN number UN3082
 Environmentally Hazardous
 Proper Shipping Name Substance, Liquid, n.o.s.
 Transport hazard class(es) 9
 Packing Group III
 Marine Pollutant Yes
 Special precautions for user None

Air transport (ICAO/IATA) (c) (d)

UN number UN3082
 Proper Shipping Name Environmentally Hazardous
 Substance, Liquid, n.o.s.
 Transport hazard class(es) 9
 Packing Group III
 Environmental hazards Marine Pollutant
 Special precautions for user None

(b)– Full proper shipping name: Environmentally Hazardous Substance, Liquid, n.o.s. (Epoxy Phenol Novolac)

(c)– Consult with transport provider.

(d)– Check relevant regulations for Special Provisions.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
SECTION 15: REGULATORY INFORMATION
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
15.1.1 EU regulations

Authorizations and/or restrictions on use Consult the supplier.

European Union (EINECS/ELINCS) All components listed or polymer exempt.

German WGK number 1

15.1.2 National regulations
USA

TSCA (Toxic Substance Control Act) All chemicals listed.

SARA 311/312 - Hazard Categories Acute Health

SARA 302 - Extremely Hazardous Substances Listed. - None

SARA 313 - Toxic Chemicals Silver, CAS #7440-22-4 (de minimis concentration 1.0%)

CERCLA (Comprehensive Environmental Response Compensation and Liability Act) Listed. - None

CAA (Clean Air Act 1990) Listed. – None

CWA (Clean Water Act) Listed. - None

State Right to Know Lists Listed. – CA, FL, MA, MN, NJ, PA, and RI.

Proposition 65 (California) - WARNING: This product contains chemicals known to the state of California to cause cancer and/or reproductive harm.

Canada

WHMIS Classification Class D, Division 2, Subdivision A, Material With Other Toxic Effects

Class E, Corrosive Material

	Canada (DSL/NDSL)	Listed. - DSL
	Canada Ingredient Disclosure List (CIDL)	Listed. – Listed as required
15.2	Chemical Safety Assessment	Corrosive (Eye), Irritant (Skin), Harmful if swallowed.
15.3	Label elements (EU)	



Label as Harmful, Irritant under 1999/45/EC and 1907/2006/EC and Harmful, Irritant and Corrosive under 1272/2008/EC. See Section 2 for full label requirements.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

LEGEND

ACGIH	American Conference of Governmental Industrial Hygienists	NA	not applicable, not available
AICS	Australian Inventory of Chemical Substances	NIOSH	National Institute for Occupational Safety and Health
ANSI	American National Standards Institute	ND	not determined
atm	atmosphere (pressure unit)	NFPA	National Fire Prevention Association
BOD	biological oxygen demand	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OC	open cup
CC	closed cup	OSHA	Occupational Safety and Health Administration
CDTA	Chemical Drug and Trafficking Act	Part	partition
COC	Cleveland Open Cup	PEL	permissible exposure limits
COD	chemical oxygen demand	ppb	parts per billion
coeff.	coefficient	PPE	personal protective equipment
CFR	Code of Federal Regulations	ppm	parts per million
CPR	cardio-pulmonary resuscitation	psi	pounds per square inch
DEA	Drug Enforcement Agency	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	RQ	Reportable quantity
DSCL	Dangerous Substances Classification and Labeling	RTK	Right to Know
EEC	European Economic Community	SARA	Superfund Amendments and Reauthorization Act
FDA	Food and Drug Administration	STEL	short-term exposure limit
HMIS	Hazardous Materials Information System	SUSDP	Standard for the Uniform Scheduling of Drugs and Poisons (Australia)
IARC	International Agency for Research on Cancer	TCC	Tagliabue Closed Cup
IDLH	immediate danger to life or health	TDG	Transportation of Dangerous Goods
kg	kilogram	TPQ	threshold planning quantity
L	liter	TQ	threshold quantity
LC50	median lethal concentration	TSCA	Toxic Substances Control Act
LD50	median lethal dose	TWA	time-weighted average
LEL	lower explosive limit	UEL	upper explosive limit
mg	milligram	WES	Workplace Exposure Standard (New Zealand)
mL	milliliter	WHMIS	Workplace Hazardous Material Information System

References: RTECS, CAS Registry, EINECS/ESIS, *Casarett & Doull's Toxicology*, *Goldfrank's Toxicological Emergencies*, Manufacturer Information

Risk Phrases and Safety Phrases

R22: Harmful if swallowed.
 R36/38: Irritating to eyes and skin.
 R41: Risk of serious damage to eyes.
 R43: May cause sensitization by skin contact.
 R51: Toxic to aquatic organisms.

R67: Vapors may cause drowsiness and dizziness.

S2: Keep out of the reach of children.

S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S28: After contact with skin, wash immediately with plenty of soap and water.

S36/39: Wear suitable protective clothing and eye/face protection.

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53: Avoid exposure - obtain special instructions before use.

S56: Dispose of this material and its container to hazardous or special waste collection point.

Hazard statement(s) and Precautionary statement(s)

H302: Harmful if swallowed.

H303: May be harmful if swallowed.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H318: Causes serious eye damage.

H319: Causes serious eye irritation.

H336: May cause drowsiness or dizziness.

H411: Toxic to aquatic life with long lasting effects.

EUH205: Contains epoxy constituents. See information supplied by the manufacturer.

P202: Do not handle until all safety precautions have been read and understood.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P305: IF IN EYES: Get immediate medical attention.

P312: Call a POISON CENTER or doctor if you feel unwell.

P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.

P501: Dispose of contents/container to: Send to a licensed recycler, reclaimer or incinerator.

Training advice: None

Additional Information: None

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Epoxy Technology, Inc. gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Epoxy Technology, Inc. accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.