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· **Product Identifier**
· **Trade Name: EP1330LV**
· **Application of the Substance or Mixture:** One part, heat cured epoxy adhesive

· **Details of the Supplier of the Safety Data Sheet (SDS)**
· **Manufacturer or Supplier:**
Resinlab, LLC
N109 W13300 Ellsworth Drive,
Germantown, WI 53022
1-800-388-8605
www.resinlab.com
· **Information Department:** Product Safety Department: msds@resinlab.com
· **Emergency Telephone Number:**
North America - Chemtrec: 1-800-424-9300 (24 hours)
International - Chemtrec: 01-703-527-3887 (24 hours)

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2 Hazard(s) identification

· **Hazard Classification**

GHS09 Environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

GHS07

Skin Irrit. 2	H315 Causes skin irritation.
Eye Irrit. 2A	H319 Causes serious eye irritation.
Skin Sens. 1	H317 May cause an allergic skin reaction.

· **Label Elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Pictogram(s)**

GHS07 GHS09

· **Signal Word** Warning

· **Hazard-determining Component(s)**
Bisphenol-A-(epichlorohydrin) epoxy resin
Diglycidyl ether of neopentyl gylcol
· **Hazard statements**
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
Toxic to aquatic life with long lasting effects.

· **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid release to the environment.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
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.
If on skin: Wash with plenty of water.

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Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Hazard Rating System**
· **NFPA System**
· **NFPA Ratings (scale 0 - 4)**

Health = 2
Fire = 1
Reactivity = 0

NFPA special hazards (water reactivity and oxidizing property): None

· **HMIS System**
· **HMIS Ratings (scale 0 - 4)**

Health = 2
Fire = 1
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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3 Composition/information on ingredients

· **Chemical Characterization: Mixtures**

· Composition/Information on Ingredients		
CAS: 1344-28-1 EINECS: 215-691-6 RTECS: BD120000	Aluminum oxide	60-70%
CAS: 25068-38-6 NLP: 500-033-5 Index Number: 603-074-00-8	Bisphenol-A-(epichlorohydrin) epoxy resin Aquatic Chronic 2, H411 Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317	25-30%
CAS: 17557-23-2 EINECS: 241-536-7 Index Number: 603-094-00-7 RTECS: TX3760000	Diglycidyl ether of neopentyl gylcol Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335 Eye Dam. 2B, H320	2.5-5%
CAS: 67762-90-7 EC number: 614-122-2	Siloxanes and Silicones, di-Me, reaction products with silica	0.1-<1%
CAS: 1333-86-4 EINECS: 215-609-9 RTECS: FF5800000	Carbon black	0.1-<1%

· **Classification System:**
The Classifications were based on the Toxicological and Ecological Data of the substances/mixtures in the Section 11 and 12.

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4 First-aid measures

· **Description of First Aid Measures**
· **General Information**
Ensure medical personnel are aware of exposure and take precautions for their personal protection; see Section 8 for the information of personal protection.

· **After Inhalation**
Remove victim from exposure to fresh air. Keep person at rest. Provide oxygen if person is not breathing.
Supply fresh air and to be sure call for a doctor.

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In case of unconsciousness place patient stably in side position for transportation.
Supply fresh air; consult doctor in case of complaints.

· **After Skin Contact**
Remove all contaminated clothing and wash before reuse.
Wash contaminated skin with water and soap and rinse thoroughly.
Seek immediate medical advice.

· **After Eye Contact**
Immediately bathe eyes for 15 minutes under running water.
Immediately remove contact lenses if present. Continue rinsing.
Seek immediate medical advice.

· **After Swallowing**
If victim is unconscious; never give anything by mouth.
If victim is conscious; rinse out mouth and give victim small amounts of water.
Seek medical treatment in case of complaints.

· **After Exposure** Seek medical treatment in case of complaints.

· **Information for Doctor** Have chemical containers, labels and/or (M)SDS ready when calling or visiting a medical center.

· **Indication of any Immediate Medical Attention and Special Treatment Needed**
After frequent or high intense exposure, the following medical tests are recommended:
eye tests
skin tests
Check section 11 Toxicological Information for further relevant information.

· **Additional Information**
For additional information, please consult the corresponding first aid measures in the most current version of Emergency Response Guidebook which is produced by the US Department of Transportation.

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5 Fire-fighting measures

· **Extinguishing Media**

· **Suitable Extinguishing Agent(s)**
Use fire fighting measures and extinguishing agents that suit the environment.
In case of fire, suitable extinguishing agents are:
Alcohol resistant foam.
Dry chemical or fire-extinguishing powder.
Carbon dioxide (CO_2).
Water spray or water fog.

· **Unsuitable Extinguishing Agent(s)** Water with full jet

· **Firefighting Procedures**
Isolate fire and deny unnecessary entry.
Immediately withdraw all personnel from the area in case of rising sound from venting safety device.
Eliminate all ignition sources if safe to do so.
Do not extinguish fire unless flow can be stopped.
Fight fire remotely due to the risk of explosion.
Burning liquids may be moved by flushing with water; protect personnel and minimize property damage.
Contain fire water runoff if possible to prevent environmental pollution.
Fight fire from protected location or safe distance.
Contain fire water runoff if possible to prevent environmental pollution.

· **Special Hazards Arising in Fire**
Will not burn unless preheated.
In case of fire, following can be released:
Phenolic compounds
Carbon oxides, Nitrogen oxides, Aluminum oxide

· **Advice for Firefighters**
If employees are expected to fight fires, they must be trained and equipped as stated in the OSHA fire brigades standard (29 CFR 1910.156).
As with any fire, wear positive-pressure self-contained breathing apparatus and full protective gear that are NIOSH approved.

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· **Additional Information** Be Caution! Finely dispersed substance may form explosive mixtures in air.

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6 Accidental release measures

· **Personal Precautions**
Do not breathe gas, vapors, dusts or mists if their inhalable particles occur during use.
Ensure personnel take precautions for their personal protection during clean up; see Section 8 for the specific requirements.

· **Environmental Precautions**
Keep away from sewage system or other water courses; do not penetrate ground/soil.
Inform respective authorities in case of any seepage to the environment.

· **Cleaning Up Methods**
Ensure adequate ventilation.
Eliminate all ignition sources.
Keep unauthorized personnel away.
For large spills:
Shut off source of leak if safe to do so.
Dike and contain.
Remove with vacuum trucks or pump to storage/salvage vessels.
Allow molten product to cool.
Absorb residues with liquid-binding materials.
Avoid confined spaces, such as sewers, because of the possibility of an explosion.
For small spills:
Ventilate and wash area after clean-up is complete.
Collect spills in suitable and properly labeled containers.
Do not use solvents unless following safe handling practices and within the recommended exposure guidelines.
Dispose contaminated chemicals as waste according to Section 13.

· **Additional Information** No further relevant information.

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7 Handling and storage

· **Handling**
· **Precautions for Safe Handling**
Obtain special instruction before use; do not handle until all safety precautions have been read and understood.
Do not breathe gas, vapors, dusts or mists if their inhalable particles occur during handling.
Wear respiratory protection when handling.
Keep away from incompatible material(s).
Avoid any release into the environment.
Observe all the personal protection requirements in Section 8.
· **Information about Protection Against Explosions and Fires**
Will not burn unless preheated.
Keep away from heat, sparks, open flame and other ignition sources during handling.
Dust can combine with air to form an explosive mixture.

· **Storage**
· **Requirements to be Met by Storerooms and Receptacles**
Store in a well-ventilated place; provide ventilation for receptacles.
Keep stored in accordance with local, regional, national, and international regulations.
· **Information about Storage in One Common Storage Facility**
Store away from incompatible material(s).
Store away from foodstuffs.
Avoid release to the environment.
Store away from direct sunlight.

· **Additional Information** No further relevant information.

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8 Exposure controls/personal protection

· **Engineering Measures or Controls**

· Exposure Limit Values that Require Monitoring at the Workplace	
1344-28-1 Aluminum oxide	
ACGIH	Long-term value: 1 mg/m³ respirable fraction as Aluminum
OSHA	Long-term value: 15 TWA total dust mg/m³
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
OSHA PEL	Short-term value: 15 mg/m³
US ACGIH	Short-term value: 10 mg/m³
1333-86-4 Carbon black	
PEL	Long-term value: 3.5 mg/m³
REL	Long-term value: 3.5* mg/m³ *0.1 in presence of PAHs;See Pocket Guide Apps.A+C
TLV	Long-term value: 3* mg/m³ *inhalable fraction

· **Other Engineering Measures or Controls**
Ventilation rates should be matched to conditions.
If applicable, use process enclosure(s), local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

· **Personal Protective**

· **General Protective and Hygienic Measures**
Avoid any contact with eye.
Do not eat, drink or smoke during work.
Keep food, drink or feed away from working area.
Contaminated work clothing is not allowed out of workplace.
Clean hands and exposed skin thoroughly after work and before breaks.

· **Personal Protective Equipment (PPE)**

· **Breathing Equipment**
Caution! Improper use of respirators is dangerous.
In case of brief exposure or low pollution, use a respiratory filter device.
In case of intensive or longer exposure, use a positive-pressure respiratory protective device that is independent of circulating air.

· **Hand Protection**

Protective gloves

Selection of glove material should take into consideration the penetration times, rates of diffusion, and the degradation.
Suggested glove type(s):
Nitrile Gloves
Butyl Rubber Gloves

· **Eye Protection**

Tightly sealed goggles

· **Body Protection** No relevant information.

· **Additional Information**
All protective clothing (suits, gloves, footwear, headgear) should be clean, available every day, and put on before work.

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The Engineering measures or controls, and PPE recommendations are only guidelines and may not apply to every situation. For additional information, please consult the corresponding requirements under OSHA 29 CFR 1910.94-95, and 29 CFR 1910.132-138.

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9 Physical and chemical properties

· **Information on Basic Physical and Chemical Properties**

· **Appearance:**	
· **Form:**	Liquid
· **Color:**	Black
· **Odor:**	Mild
· **Odor Threshold:**	Not determined.
· **PH-Value at 20 °C (68 °F):**	> 7
· **Change in Condition:**	
· **Melting Point:**	Not determined.
· **Boiling Point:**	>102 °C (>216 °F)
· **Flash Point:**	> 93 °C (> 199 °F)
· **Decomposition Temperature:**	Not determined.
· **Flammability:**	Not determined.
· **Explosion:**	Not determined.
· **Explosion Limits:**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Vapor Pressure:**	Not determined.
· **Vapor Density:**	not determined
· **Density at 25 °C (77 °F):**	1.99 g/cm³ (16.607 lbs/gal)
· **Solubility in or Miscibility with**	
· **Water:**	Not miscible or difficult to mix.
· **Segregation coefficient LogPow (n-octanol/ water):**	Not determined.
· **Viscosity:**	
· **Dynamic at 20 °C (68 °F):**	140000 mPas
· **Kinematic:**	Not determined.
· **Additional Information**	No further relevant information.

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10 Stability and reactivity

· **Physical Hazard(s)** Not a regulated reactive or physical hazard under GHS.

· **Hazardous Reactivity and Chemical Stability** Stable under normal conditions of use, storage and temperatures.

· **Thermal Decomposition and Conditions to be Avoided**
Keep away from incompatible material(s).
Thermally decomposes during fire or high heat; keep away from heat, sparks, open flame and other ignition sources.

· **Possibility of Other Hazardous Reaction(s)**
May act catalytically with ethylene oxide or vinyl chloride causing irreversible polymerization with considerable heat buildup.

· **Incompatible Material(s)**
Mercaptans
Amines.
Sodium hypochlorite, Nitrous acid and other nitrosating agents
Ethylene oxide

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Chlorine trifluoride
Oxidizing agents, Acids, Vinyl acetate, Nitrates, Chlorinated rubber
Bases (Alkalis)

· **Hazardous Decomposition Product(s)**
Thermally decomposes during fire or very high heat. See Section 5 for fire hazards evolved during thermal decomposition.

· **Hazardous Polymerization Product(s)** No relevant information.

· **Additional Information** No further relevant information.

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11 Toxicological information

· **Acute Toxicity**

· **Oral**

1344-28-1 Aluminum oxide		
Oral	LD50	> 5000 mg/kg (rat) (OECD TG 401) > 5050 mg/kg (rat) No mortality or abnormality was observed after an oral administration with 5050 mg/kg bw of the substance. Reference: IUCLID Dataset (2000) and OECD SIDS (2008).
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin		
Oral	LD50	11400 mg/kg (rat) 15600 mg/kg (mouse) Reference: NLM Toxnet (2010).
Epoxy Polyamine Adduct		
Oral	LD50	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol		
Oral	LD50	4500 mg/kg (rat) Reference: ChemID (2010).

· **Potential Health Effect(s):** Not a classified acute oral hazard.

· **Dermal**

1344-28-1 Aluminum oxide		
Dermal	LD50	(Test species: n/a) (Toxicity not expected based on acute oral data) Based on the acute oral toxicity test, it was expected that toxicity to mammals via dermal application of the substance was not a significant concern and resulted in a similar lack of acute toxicity. Thus, the substance was not classified as an acute dermal hazard. Reference: OECD SIDS (2008).
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin		
Dermal	LD50	20000 mg/kg (rabbit) (Test guideline not available) > 1270 mg/kg (mouse) > 2000 mg/kg (rat) > 1600 mg/kg (rabbit); however, there was no fixed test result available; classification was not possible without further information.
Epoxy Polyamine Adduct		
Dermal	LD50	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol		
Dermal	LD50	(rat) > 2000 mg/kg; end value or test detail was not available; classification was not possible.

· **Potential Health Effect(s):** Not a classified acute dermal hazard.

· **Inhalative**

1344-28-1 Aluminum oxide

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Inhalative	LC50/4 h	7.6 mg/l (rat) (not given) Vendor SDS 2014 Due to wetted form of the substance, inhalative effects from dust form can be seen as negligible. Meanwhile, based on the acute oral toxicity test, it was expected that toxicity to mammals via inhalation of the substance was not a significant concern and resulted in a similar lack of acute toxicity. Thus, the substance was not classified as an acute inhalation hazard as a wetted form. Reference: OECD SIDS (2008).
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin		
Inhalative	LC50/4 h	(Test species: n/a) (Toxicity not expected based on the acute oral data)
Epoxy Polyamine Adduct		
Inhalative	LC50/4 h	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol		
Inhalative	LC50/4 h	(No data available)

· **Potential Health Effect(s):**
cough
sore throat
Not a classified acute inhalative hazard.

· **Skin Corrosion or Irritation**

1344-28-1 Aluminum oxide	
Corrosion/Irritation	not irritating (rabbit) (OECD TG 404) Erythema score: 0.166/4 (Max. 4) in 2 out of 12 rabbits Edema score: 0 (Max. 4) Based on the classification criteria, the substance was not irritating to skin. Reference: ECHA (2011). Cabot SDS (2014)
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
Corrosion/Irritation	irritating (rabbit) Acute skin irritation was mild, through repeated and prolonged exposure may cause severe irritation. The substance was classified as Category 2 by GHS-J. Reference: HSNO CCID (2010) and GHS-J (2006).
Epoxy Polyamine Adduct	
Corrosion/Irritation	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol	
Corrosion/Irritation (static)	irritating (rabbit) (No test detail available) Based on manufacturer's (M)SDS, the substance was considered to be moderately irritating to rabbit skin. Based on NIOSH ICSC, the substance irritated eyes and skin. Reference: NIOSH ICSC (2010).

· **Potential Health Effect(s):**
Causes skin irritation.
In contact with skin, may cause:
redness and pain

· **Eye Serious Damage or Irritation**

1344-28-1 Aluminum oxide	
Damage/Irritation	mildly irritat. (rabbit) (US FDA Draize and Kelly test) Cornea and Iris score: 0 (Time point: 24 hours) Conjunctivae: 1/3 (Max. 3; mean score of all treated rabbits); fully reversible in 7 days. Based on the classification criteria, the substance was mildly irritating to eyes (Category 2B). Reference: ECHA (2011).
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
Damage/Irritation	irritating (rabbit) The substance caused eye irritation (Category 2A) based on the dermal effect to rabbit skin.
Epoxy Polyamine Adduct	
Damage/Irritation	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol	

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Damage/Irritation	slightly (rabbit) (No test detail available) Based on manufacturer's MSDS, the substance was considered to be slightly irritating to rabbit eyes. Based on NIOSH ICSC, the substance irritated eyes and skin. Reference: NIOSH ICSC.

· **Potential Health Effect(s):**
Causes serious eye irritation.
In contact with eye, may cause:
redness and pain

· **Respiratory or Skin Sensitization**

1344-28-1 Aluminum oxide

Sensitization	Skin	not sensitizing (guinea pig) (Landsteiner/Draize method) 33% aqueous suspension induced mild to moderate skin reaction; however, significant difference between test and control groups with respect to the degree and incidence of erythema and oedema was not reported. Thus, the substance was not classified as a skin sensitizer. Reference: ECHA (2011).
	Respiratory	(No data available)

25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin

Sensitization	Skin	sensitizing (Human) Based on positive results from skin sensitization tests on human volunteers and guinea pigs, GHS-J classified the substance as a dermal sensitizer. Reference: GHS-J (2006).
	Respiratory	(No data available)

Epoxy Polyamine Adduct

Sensitization	Skin	(No data available)
	Respiratory	(No data available)

17557-23-2 Diglycidyl ether of neopentyl gylcol

Sensitization	Skin	sensitizing (Test species: n/a) The substance was classified as a contact sensitizer. Reference: ERMA HSNO (2010) and NIOSH ICSC (2010).
	Respiratory	(No data available)

· **Potential Health Effect(s):**
May cause an allergic skin reaction.
No relevant information for respiratory sensitization; classification is not possible.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Germ Cell Mutagenicity**

1344-28-1 Aluminum oxide

Mutagenicity	negative (rat) (In Vivo (Chromosomal aberrations; Oral)) In Vitro (Ame test; salmonella typhimurium) - negative with and without metabolic activation. In Vitro (Bacillus subtilis recombination assay; Bacillus subtilis) - negative In Vivo (Chromosomal aberrations; rat bone marrow cells; Oral; up to 2000 mg/kg; bulk material) - negative. In Vivo (Chromosomal aberrations; rat bone marrow cells; Oral; up to 2000 mg/kg; particle size ranging from 30 mm – 40 mm) - positive. The positive result was exclusive for classification because particle size of the substance ranged from 1/2 inch (12.7mm) to 3/4 inch (19.1 mm). When considering all of the evidence, the substance was not classified as a mutagen. Reference: NLM CCRIS (2011), AluChem TDS (2002) and IUCLID Dataset (2000).

25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin

Mutagenicity	positive (Chinese hamster lung fibroblast cells) (In Vitro (Chromosomal Aberration)) In Vitro (Chromosomal Aberration; Chinese hamster lung fibroblast cells) - Positive without metabolic activation; negative with metabolic activation. Positive (salmonella typhimurium) (In Vitro (Ames assay)). Due to the absence from In Vivo tests, it was not possible to make a conclusion of mutagenicity of the substance. Reference: NLM CCRIS (2010).

Epoxy Polyamine Adduct

Mutagenicity	(No data available)

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17557-23-2 Diglycidyl ether of neopentyl gylcol	
Mutagenicity	(salmonella typhimurium) In Vitro (Ames tests with salmonella typhimurium; strains: TA100 and TA1535) - Positive with and without metabolic activation. Due to the absence of In Vivo test results, the substance can't be classified as a germ cell mutagen. Reference: NLM TOXNET CCRIS (2010).

· **Potential Health Effect(s):** No further relevant information; classification is not possible.

· Carcinogenicity

1344-28-1 Aluminum oxide	
Carcinogenicity	negative (rat) (Carcinogenicity not expected due to wetted form) There was some evidence of carcinogenicity via intraperitoneal routes which can be seen as negligible due to wetted form of the substance. Reference: NLM CCRIS (2011). Not classified as a human carcinogen. Aluchem SDS (2014)
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
Carcinogenicity	negative (Test species: n/a) (Not listed by ACGIH, IARC, NTP, or OSHA) (Mouse) 1 out of 4 cases with female mice showed positive carcinogenic results after a repeated dermal application with 10% concentration of the substance for two years. When considering all of the evidence, the substance was not classified as a carcinogen.
Epoxy Polyamine Adduct	
Carcinogenicity	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol	
Carcinogenicity	negative (Test species: n/a) Not listed as a carcinogen by IARC.

· **Potential Health Effect(s):** No further relevant information; classification is not possible.

· Reproductive Toxicity

1344-28-1 Aluminum oxide	
Reproductive Toxi.	(No data available)
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
Reproductive Toxi.	negative (Test species: n/a) (no reproductive or developmental effect observed) There was no reproductive or developmental effect observed at dosing levels that were toxic to parental animals. Reference: GHS-J (2006).
Epoxy Polyamine Adduct	
Reproductive Toxi.	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol	
Reproductive Toxi.	(No data available)

· **Potential Health Effect(s):** Not a known Reproductive hazard.

· Specific Target Organ Toxicity - Single Exposure

1344-28-1 Aluminum oxide	
STOT-Single	Target: None (Test species: n/a) (Systemic toxicity not expected due to wetted form) Based on upper respiratory irritation reports from NIOSH ICSC, GHS-J classified the substance as Category 3 (respiratory tract irritation). However, inhalative effects can be seen as negligible due to wetted form of the substance. Reference: NIOSH ICSC (2000) and GHS-J (2006).
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
STOT-Single	Target: None (Rats and Mice) (No effect after single oral doses) Somnolence (general depressed activity) and dyspnea were observed after a single oral application with 11400 mg/kg to rats, or 15600 mg/kg to mice of the substance. However, the dose levels were both outside of the guidance value ranges. Reference: NLM Toxnet (2010).
Epoxy Polyamine Adduct	
STOT-Single	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol	
STOT-Single	(No data available)

· **Potential Health Effect(s):** Not a known hazard to organs upon single exposure.

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· Specific Target Organ Toxicity - Repeated Exposure

1344-28-1 Aluminum oxide	
STOT-Repeated	Target: None (Test species: n/a) (Systemic toxicity not expected due to wetted form) The substance was classified as Category 1 to lungs by inhalation according to statement that pulmonary fibrosis occurred after long term exposure to the substance dust. However, inhalative effects can be seen as negligible due to wetted form of the substance. Reference: GHS-J (2006).
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
STOT-Repeated	Target: N/A (guinea pig) (insufficient data for classification) With dermal application of the substance for 55 days, increased seromucoid concentrations, decreased lactate-dehydrogenase (LDH), and decreased leucylnaphthylamidase (LNA) were observed in the test animals. Meanwhile, the substance caused a toxic effect on blood components of female guinea-pigs with greater effects on pregnant animals. However, there was no detail available regarding the dose level or test guideline, classification was thus not possible. Reference: HSNO CCID (2010).
Epoxy Polyamine Adduct	
STOT-Repeated	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol	
STOT-Repeated	(No data available)

· **Potential Health Effect(s):** No further relevant information; classification is not possible.

· Aspiration Hazard

1344-28-1 Aluminum oxide	
Aspiration Hazard	(No data available)
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
Aspiration Hazard	(No data available)
Epoxy Polyamine Adduct	
Aspiration Hazard	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol	
Aspiration Hazard	(No data available)

· **Potential Health Effect(s):** No relevant information; classification is not possible.

· **Additional Information** No further relevant information.

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12 Ecological information

· Aquatic Environmental Toxicity

1344-28-1 Aluminum oxide	
Algae Toxicity	> 100 mg/l (Selenastrum capricornum) (NOEC (72 hrs), OECD TG 201) Aluchem SDS (2014)
Crustacean Toxicity	> 100 mg/l (Daphnia magna (water flea)) (NOEC (48 hrs), OECD TG 202) Aluchem SDS (2014)
Fish Toxicity	> 100 mg/l (Brown trout (Salmo trutta or Sea trout)) (NOEC (96 hrs), OECD TG 203) Reference: IUCLID Dataset (2000). Aluchem SDS (2014)
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
Algae Toxicity	(No data available)
Crustacean Toxicity	1.4 - 1.7 mg/l (Daphnia magna (water flea)) (EC50 (48 hrs))
Fish Toxicity	1.41 mg/l (Oryzias latipes (Rice fish)) (LC50 (96 hrs)) 3.1 mg/l (Pimephales promelas (fathead minnow)) (LC50 (96 hrs)) Based on the non-rapid degradability and the acute LC50 < 10 mg/L, the substance is classified as a Chronic-2 environmental hazard. Reference: CHRIP (2010).
Epoxy Polyamine Adduct	
Algae Toxicity	(No data available)
Crustacean Toxicity	(No data available)

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Fish Toxicity	(No data available)

17557-23-2 Diglycidyl ether of neopentyl gylcol

Algae Toxicity	(No data available)
Crustacean Toxicity	(No data available)
Fish Toxicity	(No data available)

· **Aquatic Environmental Toxicity Assessment:** Toxic to aquatic life with long lasting effects.

· Degradability and Stability

1344-28-1 Aluminum oxide

Biodegradation	non-biodegrad. (Test species: n/a) (As an inorganic and insoluble compound) As an inorganic and insoluble compound, biodegradation of the substance is not expected.
Persistence	(Test species: n/a) (The substance is persistent) Reference: Canada DSL (2007).
Photodegradation	(No data available) As an inorganic and insoluble compound, photodegradation of the substance is not expected.
Stability in water	stable (Test species: n/a) (As an inorganic and insoluble compound) As an insoluble inorganic metal compound, hydrolysis of the substance is not expected.

25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin

Biodegradation	non-biodegrad. (Test species: n/a) (Biodegradation (OECD TG 302B; 28 days) = 12%) (Activated Sludge) (OECD TG 301C; 4 weeks; Conc. 100 mg/L) Biodegradation (Indirect Analysis from BOD) = 0% Biodegradation (Direct Analysis from HPLC) = 0% The substance is non-biodegradable. Reference: CHRIP (2010).
Persistence	(Test species: n/a) (This substance is persistent) Reference: Canada DSL (2007) and CHRIP (2010).
Photodegradation	6.69E-11 cm^3/molecule-sec (OH radical) (Half-life (T1/2) = 1.92 hrs) However, photolysis in water is negligible.
Stability in water	(No data available)

Epoxy Polyamine Adduct

Biodegradation	(No data available)
Persistence	(No data available)
Photodegradation	(No data available)
Stability in water	(No data available)

17557-23-2 Diglycidyl ether of neopentyl gylcol

Biodegradation	(No data available)
Persistence	(Test species: n/a) This substance is not persistent. Reference: Canada DSL (2007).
Photodegradation	(No data available)
Stability in water	(No data available)

· Bioaccumulation and Distribution

1344-28-1 Aluminum oxide

BCF	(Test species: n/a) (The substance is not bioaccumulative) Reference: Canada DSL (2007).
Koc	(No data available) As an inorganic and insoluble compound, mobility of the substance is expected to be very low.
LogPow	(No data available)

25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin

BCF	0.56-42 (Cyprinus carpio) (The substance is low-bioaccumulative) BCF (28 days; Concentration: 10 µg/L) = 0.56 - 0.67, 3.3 - 4.2 BCF (28 days; Concentration: 1 µg/L) = 5.6 - 6.8, 33 - 42 Reference: CHRIP (2010).
Koc	1800 - 4400 L/kg (soil) Potential for mobility in soil is moderate.
LogPow	3.7 - 3.9 (Test species: n/a)

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Epoxy Polyamine Adduct	
Koc	(No data available)
LogPow	(No data available)
17557-23-2 Diglycidyl ether of neopentyl gylcol	
BCF	(Test species: n/a) The substance is not bioaccumulative. Reference: Canada DSL (2007).
Koc	(No data available)
LogPow (static)	0.23 (Test species: n/a) Reference: CHRIP (2011).

· **Degradability and Bioaccumulation Assessment:** Non-rapidly degradable, and low bioaccumulative.

· **Additional Information** No further relevant information.

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13 Disposal considerations

· **Hazardous Waste List**

· **Description:** It may be necessary to contain and dispose of the substance/mixture as a hazardous waste.

· **Waste Treatment Recommendation:**
Generation of waste should be avoided or minimized wherever possible.
Chemical waste, even small quantities, is neither allowed to be poured down drains, sewage system or waterways; nor disposed with household garbage.
Dispose of contents/containers in accordance with local, regional, national, and international regulations.

· **Unused and Uncontaminated Packagings**

· **Recommendation** Dispose of according to your local waste regulations.

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14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA** UN3082

· **UN Proper Shipping Name**

· **DOT, ADR, IMDG, IATA** Environmentally hazardous substances, liquid, n.o.s. (Bisphenol-A-(epichlorohydrin) epoxy resin)

· **Transport hazard class(es)**

· **DOT, IMDG, IATA**

· **Class** 9 Miscellaneous dangerous substances and articles

· **Label** 9

· **ADR**

· **Class** 9 (M6) Miscellaneous dangerous substances and articles

· **Label** 9

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· **Packing group**
· **DOT, ADR, IMDG, IATA** III

· **Environmental Hazards:**
· **Marine Pollutant:** Yes
Symbol (fish and tree)
· **Special Marking (ADR):** Symbol (fish and tree)
· **Special Marking (IATA):** Symbol (fish and tree)

· **Special Precautions:** Warning: Miscellaneous dangerous substances and articles
· **Danger Code (Kemler):** 90
· **EMS Number:** F-A,S-F

· **Transport in Bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional Information:**

· **DOT**
· **Quantity limitations** On passenger aircraft/rail: No limit
On cargo aircraft only: No limit
· **Remarks:** Special marking with the symbol (fish and tree).

· **ADR**
· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

· **IMDG**
· **Limited quantities (LQ)** 5L
· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":** UN3082, Environmentally hazardous substances, liquid, n.o.s. (Bisphenol-A-(epichlorohydrin) epoxy resin), 9, III

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15 Regulatory information

· **USA Regulation Lists**
· **SARA (Superfund Amendments and Reauthorization Act of 1986)**

· **Section 302 (Extremely Hazardous Substances)**

None of the ingredients is listed.

· **Section 313 (Toxics Release Inventory (TRI) reporting)**

None of the ingredients is listed.

· **Section 311/312 (Hazardous Chemical Inventory Reporting)**

25068-38-6	Bisphenol-A-(epichlorohydrin) epoxy resin	A, C	25-30%
1333-86-4	Carbon black	A, C	0.1-<1%

· **Hazard Abbreviations for SARA 311/312**
A - Acute Health Hazard
C - Chronic Health Hazard
F - Fire Hazard
R - Reactive Hazard
S - Sudden Release of Pressure Hazard

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· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65**

· **Chemicals Known to Cause Cancer**

1333-86-4	Carbon black
106-89-8	1-chloro-2,3-epoxypropane

· **Chemicals Known to Cause Reproductive Toxicity for Females**

None of the ingredients is listed.

· **Chemicals Known to Cause Reproductive Toxicity for Males**

106-89-8	1-chloro-2,3-epoxypropane

· **Chemicals Known to Cause Developmental Toxicity**

None of the ingredients is listed.

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value Established by ACGIH)**

1333-86-4	Carbon black	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **International Regulation Lists**

· **Canadian Domestic Substance Listings:**

1344-28-1	Aluminum oxide
25068-38-6	Bisphenol-A-(epichlorohydrin) epoxy resin
17557-23-2	Diglycidyl ether of neopentyl gylcol
67762-90-7	Siloxanes and Silicones, di-Me, reaction products with silica
1333-86-4	Carbon black

· **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

None of the ingredients is listed.

· **Chinese Chemical Inventory of Existing Chemical Substances:**

1344-28-1	Aluminum oxide
25068-38-6	Bisphenol-A-(epichlorohydrin) epoxy resin
17557-23-2	Diglycidyl ether of neopentyl gylcol
67762-90-7	Siloxanes and Silicones, di-Me, reaction products with silica
1333-86-4	Carbon black

· **Japanese Existing and New Chemical Substance List:**

1344-28-1	Aluminum oxide
25068-38-6	Bisphenol-A-(epichlorohydrin) epoxy resin
17557-23-2	Diglycidyl ether of neopentyl gylcol
67762-90-7	Siloxanes and Silicones, di-Me, reaction products with silica
1333-86-4	Carbon black

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· Korean Existing Chemical Inventory:	
1344-28-1	Aluminum oxide
25068-38-6	Bisphenol-A-(epichlorohydrin) epoxy resin
17557-23-2	Diglycidyl ether of neopentyl gylcol
67762-90-7	Siloxanes and Silicones, di-Me, reaction products with silica
1333-86-4	Carbon black

· European Pre-registered substances:	
1344-28-1	Aluminum oxide
25068-38-6	Bisphenol-A-(epichlorohydrin) epoxy resin
17557-23-2	Diglycidyl ether of neopentyl gylcol
67762-90-7	Siloxanes and Silicones, di-Me, reaction products with silica
1333-86-4	Carbon black

· **REACh - Substances of Very High Concern (SVHC) List:**

None of the ingredients is listed.

· **Restriction of Hazardous Substances Directive (RoHS) list:**

None of the ingredients is listed.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department Issuing (M)SDS:** Product Safety Department
· **Contact:** msds@resinlab.com

· **Abbreviations and acronyms:**
ACGIH: American Conference of Governmental Industrial Hygienists
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road
CAS: Chemical Abstracts Service (division of the American Chemical Society)
ChemID (Full Record): US NLM Chemical Information Database (or its Full Record) designed to help search for information by chemical name or structure
DOT: US Department of Transportation
HMIS: US National Paint & Coatings Association (NPCA) Hazardous Materials Identification System
IARC: International Agency for Research on Cancer developed by United Nations World Health Organisation (WHO)
ICAO-TI: Technical Instructions (TI) by the International Civil Aviation Organization (ICAO)
IMDG: International Maritime Dangerous Goods; the principal international rules for International Carriage of Dangerous Goods by SEA under the Recommendations on the Transport of Dangerous Goods by United Nations (RTDG)
LC50/LD50: Lethal Concentration/Dose, 50 percent
N/a: Not available or Not applicable
NFPA: US National Fire Protection Association
NIOSH: US National Institute of Occupational Safety and Health
OSHA: US Occupational Safety and Health Administration
P: Marine Pollutant
RCRA: Resource Conservation and Recovery Act (USA)
REACh: EU Registry, Evaluation and Authorisation of Chemicals
SARA: US Superfund Amendments and Reauthorization Act
TEEL: Temporary Emergency Exposure Limit developed by US Subcommittee on Consequence Assessment and Protective Actions (SCAPA) of US Department of Energy (DOE)
TSCA: US Toxic Substance Control Act
ACToR: US EPA Aggregated Computational Toxicology Resource
BCF: Bioconcentration Factor
CCRIS: US NLM TOXNET Chemical Carcinogenesis Research Information System
CHRIP: Japan NITE Information on Biodegradation and Bioconcentration of the Existing Chemical Substances in the Chemical Risk Information Platform
DSL: Canada Domestic Substance List
ESIS: European Chemical Substances Information System
HSDB: US NLM TOXNET Hazardous Substances Databank

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HSNO CCID: New Zealand Hazardous Substances and New Organisms Chemical Classification Information Database
IATA-DGR: Dangerous Goods Regulations (DGR) by the International Air Transport Association (IATA)
ICSC: International Chemical Safety Cards
Koc: Partition coefficient, soil Organic Carbon to water
NITE: National Institute of Technology and Evaluation, Japan
OECD: Organisation for Economic Co-operation and Development
RID: the Regulations Concerning the International Carriage of Dangerous Goods by Rail; published by the Central Office for International Carriage by Rail (OTIF)
RTDG: the Recommendations on the Transport of Dangerous Goods by United Nations (UN)
RTECS: US Registry of Toxic Effects of Chemical Substances
SIDS: OECD existing chemicals Screening Information Data Sets
SVHC: EU ECHA Substance of Very High Concern
TOXLINE: US NLM bibliographic database search system

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