Safety Data Sheet
acc. to OSHA HCS

Print Date 10/12/2015 Revision Date 10/12/2015

· **Product Identifier**
· **Trade Name: EP1121-4 A**
· **Application of the Substance or Mixture:** Epoxy Resin

· **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**

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.
Aquatic Chronic 3	H412	Harmful to aquatic life with long lasting effects.

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

GHS07

· **Signal Word** Warning

· **Hazard-determining Component(s)**
Bisphenol-A-(epichlorohydrin) epoxy resin
1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid
· **Hazard statements**
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
Harmful to aquatic life with long lasting effects.

· **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves.
Wear eye protection / face protection.
Avoid release to the environment.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
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	20-<25%
CAS: 74398-71-3 EC number: 616-085-8	1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid Skin Sens. 1, H317	5-<10%
CAS: 67762-90-7 EC number: 614-122-2	Siloxanes and Silicones, di-Me, reaction products with silica	1-2.5%
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**
Symptoms may be delayed several hours after exposure; victims should be medically observed for at least 48 hours after exposure.
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.
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.

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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.
Solid stream of water may spread fire; use water spray or water fog.
Cool all affected containers with flooding quantities of water.
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.

· **Special Hazards Arising in Fire**
Will not burn unless preheated.
In case of fire, following can be released:
Phenolic compounds
Formaldehyde, a skin and lung sensitizer and a regulated carcinogen, may be formed during fires.
Carbon dioxide (CO_2) and Carbon monoxide (CO)
Aluminum oxide (Al_2O_3) dust, a serious respiratory irritant, may be formed during fires.
Silicon oxide (SiO_2)

· **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).

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As with any fire, wear positive-pressure self-contained breathing apparatus and full protective gear that are NIOSH approved.

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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.
Absorb residues with liquid-binding materials.
Avoid confined spaces, such as sewers, because of the possibility of an explosion.
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.

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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.
Handle in well ventilated work space.
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.

· **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.

· **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.

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In case of intensive or longer exposure, use a positive-pressure respiratory protective device that is independent of circulating air.
· **Hand Protection**
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** safety glasses with side shields and or face shield.
· **Body Protection** Chemical resistant apron; cover exposed skin.

· **Additional Information**
All protective clothing (suits, gloves, footwear, headgear) should be clean, available every day, and put on before work.
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:** Paste
· **Color:** Black
· **Odor:** Mild epoxy odor
· **Odor Threshold:** Not determined.

· **PH-Value:** Not determined.

· **Change in Condition:**
· **Melting Point:** Not determined.
· **Boiling Point:** >260 °C (>500 °F)
· **Flash Point:** >252 °C (>486 °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):** 2.16 g/cm³ (18.025 lbs/gal)
· **Solubility in or Miscibility with**
· **Water:** Not miscible or difficult to mix.
· **Viscosity:**
· **Dynamic at 20 °C (68 °F):** 550000 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)**
Amines.
Oxidizing agents
Vinyl acetate
Acids
Chlorinated rubber
Bases (Alkalis)
Nitrates
· **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.

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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).

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25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin		
Oral	LD50	11400 mg/kg (rat) 15600 mg/kg (mouse) Reference: NLM Toxnet (2010).
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid		
Oral	LD50	> 5000 mg/kg (rat) Reference: Hexion (M)SDS (2003).
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica		
Oral	LD50	>5000 mg/kg (rat) (test method not specified) Reference: Cabot (M)SDS (2012).

· **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.
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid		
Dermal	LD50	> 2000 mg/kg (rabbit) Reference: Hexion (M)SDS (2003).
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica		
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 as a wetted form.

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

· **Inhalative**

1344-28-1 Aluminum oxide		
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)
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid		
Inhalative	LC50/4 h	(Test species: n/a) (Toxicity not expected based on the acute oral data)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica		
Inhalative	LC50/4 h	(Test species: n/a) (Toxicity not expected based on acute oral data) 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.

· **Potential Health Effect(s):** 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).
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
Corrosion/Irritation	slightly irri. (Test species: n/a) Based on manufacturer's test result, the substance was slightly irritating to skin (Category 3). Reference: Hexion (M)SDS (2003).
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
Corrosion/Irritation	Non-irritating (Test species: n/a) (Primary irritation index=0) mildly irritating (rabbit) (Read across from CAS 63148-62-9) No test detail available; for safety reasons, the substance was classified as mildly irritating (Category 3) to rabbit skin. Reference: HSNO CCID (2010).

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

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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.
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
Damage/Irritation	(No data available)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
Damage/Irritation	slightly irrit. (Human) (Read across from CAS 63148-62-9) non-irritating (Primary irritation index=0) Transient ocular irritation was observed in humans, rabbits, dogs, and monkeys after injection of the substance to their eye bodies. However, those effects can be seen as negligible based on regular use of the substance. When applying lower viscosity substance-oil mixture to human and rabbit eyes, there was no cornea injury, but a delay of healing of the existed corneal erosion observed. For safety reasons, the substance was classified as a slight eye irritant (Category 2B). Reference: ACToR (2011) and Cabot (M)SDS (2012).

· **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)
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid		
Sensitization	Skin	sensitizing (Test species: n/a) Based on manufacturer's test result, the substance was a skin sensitizer, and the sensitization can be severe in susceptible individuals. Reference: Hexion (M)SDS (2003).
	Respiratory	(No data available)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica		
Sensitization	Skin	(No data available) Primary irritation index=0 Non-irritating. Cabot MSDS (2012)
	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).
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
Mutagenicity	(No data available)

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67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
Mutagenicity	negative (Chinese Hamster) (In Vitro (AMES Test)) negative (Chinese Hamster) (In Vitro (Chromosomal aberration in ovary cells)) Reference: Cabot (M)SDS (2012).

· **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.
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
Carcinogenicity	negative (Test species: n/a) (not listed as a Carcinogen by NTP, IARC or OSHA)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
Carcinogenicity	(Test species: n/a) (Not listed by IARC, NTP, OSHA or ACGIH)

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

· **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).
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
Reproductive Toxi.	(No data available)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
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).
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
STOT-Single	(No data available)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
STOT-Single (dynamic)	(No data available)

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

· **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).
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
STOT-Repeated	(No data available)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
STOT-Repeated	(No data available)

· **Potential Health Effect(s):** Causes damage to organs through prolonged or repeated exposure.

· **Aspiration Hazard**	
1344-28-1 Aluminum oxide	
Aspiration Hazard	(No data available)

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25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
Aspiration Hazard	(No data available)
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
Aspiration Hazard	(No data available)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
Aspiration Hazard	(No data available)

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

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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).
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
Algae Toxicity	(No data available)
Crustacean Toxicity	(No data available)
Fish Toxicity	(No data available)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
Algae Toxicity	> 10000 mg/l (Scenedesmus subspicatus) (ErC50 (24 hrs), OECD 201)
Crustacean Toxicity	> 1000 mg/l (Daphnia magna (water flea)) (EC50 (24 hrs), OECD 202)
Fish Toxicity	> 10000 mg/l (Brachydanio rerio (Zebra fish)) (LC50 (96 hrs), OECD 203) Reference: Cabot (M)SDS (2012).

· **Aquatic Environmental Toxicity Assessment:** Harmful 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 cm³/molecule-sec (OH radical) (Half-life (T1/2) = 1.92 hrs) However, photolysis in water is negligible.
Stability in water	(No data available)
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
Biodegradation	non-biodegrad. (Test species: n/a) (Non-biodegradable due to persistent property) Based on the persistent assessment according to Canada DSL, the substance is expected to be non-degradable in the environment.
Persistence	(Test species: n/a) (The substance is persistent) Reference: Canada DSL (2007).
Photodegradation	(No data available)
Stability in water	(No data available)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
Biodegradation	(No data available)
Persistence	(Test species: n/a) (The substance is not persistent) Reference: Canada DSL (2007).
Photodegradation	(No data available)
Stability in water	(No data available)

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· **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)
74398-71-3 1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	
BCF	(Test species: n/a) (The substance is not bioaccumulative) Reference: Canada DSL (2007).
Koc	(No data available)
LogPow	(No data available)
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
BCF	(No data available) (The substance is not bioaccumulative) Reference: Canada DSL CCR (2011).
Koc	(No data available)
LogPow	(No data available)

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

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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, ADR, IMDG, IATA**	
· **Class**	9 Miscellaneous dangerous substances and articles
· **Label**	9
· **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
· **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**	
· **Remarks:**	Special marking with the symbol (fish and tree).

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Trade Name: EP1121-4 A

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· **ADR**
· **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	20-<25%
74398-71-3	1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid	A, C	5-<10%
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

· **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**
None of the ingredients is listed.

· **Chemicals Known to Cause Developmental Toxicity**

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

· **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:**
All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**
None of the ingredients is listed.

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

67762-90-7	Siloxanes and Silicones, di-Me, reaction products with silica

· **Chinese Chemical Inventory of Existing Chemical Substances:**
All ingredients are listed.

· **Japanese Existing and New Chemical Substance List:**
All ingredients are listed.

· **Korean Existing Chemical Inventory:**
All ingredients are listed.

· **European Pre-registered substances:**
All ingredients are listed.

· **REACh - Substances of Very High Concern (SVHC) List:**
None of the ingredients is listed.

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· **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
ACToR: US EPA Aggregated Computational Toxicology Resource
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road
BCF: Bioconcentration Factor
CAS: Chemical Abstracts Service (division of the American Chemical Society)
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
DOT: US Department of Transportation
DSL: Canada Domestic Substance List
ECHA: European Chemicals Agency's Dissemination portal with information on chemical substances registered under REACH
ESIS: European Chemical Substances Information System
HMIS: US National Paint & Coatings Association (NPCA) Hazardous Materials Identification System
HSDB: US NLM TOXNET Hazardous Substances Databank
HSNO CCID: New Zealand Hazardous Substances and New Organisms Chemical Classification Information Database
IARC: International Agency for Research on Cancer developed by United Nations World Health Organisation (WHO)
IATA-DGR: Dangerous Goods Regulations (DGR) by the International Air Transport Association (IATA)
ICAO-TI: Technical Instructions (TI) by the International Civil Aviation Organization (ICAO)
ICSC: International Chemical Safety Cards
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)
IUCLID: EU REACh International Uniform Chemical Information Database
Koc: Partition coefficient, soil Organic Carbon to water
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
NITE: National Institute of Technology and Evaluation, Japan
NLM TOXNET: US National Library of Medicine Toxicology Data Network
OECD: Organisation for Economic Co-operation and Development
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
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
SARA: US Superfund Amendments and Reauthorization Act
SIDS: OECD existing chemicals Screening Information Data Sets
SVHC: EU ECHA Substance of Very High Concern
TEEL: Temporary Emergency Exposure Limit developed by US Subcommittee on Consequence Assessment and Protective Actions (SCAPA) of US Department of Energy (DOE)
TOXLINE: US NLM bibliographic database search system
TSCA: US Toxic Substance Control Act
· **Date of preparation / last revision** 10/12/2015 / 2