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· **Product Identifier**
· **Trade Name:** EP965LVLX BLACK 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**

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
1,1,1-trimethylolpropane triacrylate
· **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.
Wear 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.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.

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If eye irritation persists: Get medical advice/attention.
If on skin: Wash with plenty of water.
Collect spillage.
Take off contaminated clothing and wash it before reuse.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Prevention**
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.

· **Disposal** 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: 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	70-80%
CAS: 15625-89-5 EINECS: 239-701-3 Index Number: 607-111-00-9 RTECS: AT 4810000	1,1,1-trimethylolpropane triacrylate Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	20-<25%

· **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.

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

· **After Skin Contact**
As quickly as possible remove contaminated clothing, shoes, and leather goods (e.g. watchbands, belts). Quickly and gently blot or brush away excess chemical. Immediately flush with lukewarm water for 15 minutes. Completely decontaminate clothing, shoes, and leather goods before reuse or discard. If irritation persists, obtain medical advice.

· **After Eye Contact**
Immediately bathe eyes for 15 minutes under running water.
Immediately remove contact lenses if present. Continue rinsing.
Seek medical treatment in case of complaints.

· **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.
May spontaneously polymerize during fire or high temperatures generating massive heat and pressure.
In case of fire, following can be released:
Phenolic compounds
Carbon dioxide (CO_2) and Carbon monoxide (CO)

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· **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.

· **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.
Keep away from radiation.

· **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 radiation or radical initiators.
Store away from incompatible material(s).
Store away from foodstuffs.

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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	
15625-89-5 1,1,1-trimethylolpropane triacrylate	
WEEL	Long-term value: 1 mg/m³ Skin
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
64742-48-9 Naphtha (petroleum), hydrotreated heavy	
OSHA	Short-term value: 400 mg/m³
140-88-5 ethyl acrylate	
PEL	Long-term value: 100 mg/m³, 25 ppm Skin
REL	See Pocket Guide App. A
TLV	Short-term value: 61 mg/m³, 15 ppm Long-term value: 20 mg/m³, 5 ppm

· **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

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· **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.
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 epoxy odor
· **Odor Threshold:**	Not determined.
· **PH-Value:**	Not determined.
· **Change in Condition:**	
· **Melting Point:**	Not determined.
· **Boiling Point:**	>100 °C (>212 °F)
· **Flash Point:**	> 93 °C (> 199 °F)
· **Decomposition Temperature:**	Not determined.
· **Auto-ignition Temperature:**	Not determined.
· **Flammability:**	Not determined.
· **Explosion:**	Not determined.
· **Explosion Limits:**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Vapor Pressure:**	38.7 hPa (29 mm Hg)
· **Density at 25 °C (77 °F):**	1.13 g/cm³ (9.43 lbs/gal)
· **Solubility in or Miscibility with**	
· **Water:**	Not miscible or difficult to mix.
· **Viscosity:**	
· **Dynamic at 20 °C (68 °F):**	3000 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** May polymerize during high temperatures.

· **Thermal Decomposition and Conditions to be Avoided**
Keep away from incompatible material(s).

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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 spontaneously polymerize during high temperatures, in contact with incompatible material(s) or exposed to radiation which can generate massive heat/pressure.

· **Incompatible Material(s)**
Oxidizing agents
Amines.
Mercaptans
inert gases, free radical initiators, oxygen scavengers.
Strong reducing agents
Acids
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)** Polyacrylates

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

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11 Toxicological information

· **Acute Toxicity**

· Oral		
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin		
Oral	LD50	11400 mg/kg (rat) 15600 mg/kg (mouse) Reference: NLM Toxnet (2010).
15625-89-5 1,1,1-trimethylolpropane triacrylate		
Oral	LD50	5700 mg/kg (rat) (Calculated from 5.19 mL/kg) Reference: ChemID Full Record (2011).

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

· Dermal		
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. Reference: Royce (M)SDS (2011) and ChemID (2010).
15625-89-5 1,1,1-trimethylolpropane triacrylate		
Dermal	LD50	2500 mg/kg (mouse) Reference: HSNO CCID (2011).

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

· Inhalative		
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)
15625-89-5 1,1,1-trimethylolpropane triacrylate		
Inhalative	LC50/4 h	(Test species: n/a) (None or low toxicity based on the acute oral data)

· **Potential Health Effect(s):**
While not a classified inhalative acute toxicity hazard, the product may cause the following symptoms:
cough
shortness of breath
Not a classified acute inhalative hazard.
No further relevant information; classification is not possible.

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· Skin Corrosion or Irritation

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).
15625-89-5 1,1,1-trimethylolpropane triacrylate	
Corrosion/Irritation	irritating (rabbit) (Skin irritation: 5/8 (Max. 8)) Skin irritation: 5/8 (Max. 8; mean score of all treated animals). The substance was classified as irritating to rabbit skin (Category 2) based on the classification criteria. Reference: Cognis (M)SDS (2007) and IUCLID Dataset (2000).

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

· Eye Serious Damage or Irritation

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.
15625-89-5 1,1,1-trimethylolpropane triacrylate	
Damage/Irritation	irritating (rabbit) (Estimated from irritating results from skin tests) The substance was irritating to eyes (Category 2) based on the irritating effects of rabbit skin. Reference: HSNO CCID (2011).

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

· Respiratory or Skin Sensitization

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)
15625-89-5 1,1,1-trimethylolpropane triacrylate		
Sensitization	Skin	sensitizing (Human) (Based on human epidemiological report) There were allergic contact dermatitis results reported in workers after repeatedly exposed to UV-cured coatings or textile inks of the substance. Reference: NLM Haz-Map (2011).
	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

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).

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15625-89-5 1,1,1-trimethylolpropane triacrylate	
Mutagenicity	negative (mouse) (In Vivo (Micronucleus; dermal with 12 mg/kg/day)) In Vitro (AME test; S. Typhimurium TA98, 100 and 1537 strains) - negative with and without metabolic activation In Vitro (AME test; S. Typhimurium TA1535) - ambiguous with metabolic activation In Vitro (AME test; S. Typhimurium TA1535) - negative without metabolic activation In Vitro (Chinese Hamster Ovary (CHO) HGPRT) - ambiguous without metabolic activation In Vitro (Mouse Lymphoma L5178Y) - positive with and without metabolic activation. In Vivo (Micronucleus; dermal with 12 mg/kg/day for 28 weeks) - negative; the substance did not induce any mutagenic effects in peripheral blood normochromatic erythrocytes of the treated mice. Only negative results were observed from the In Vivo tests, the substance was therefore not considered as a mutagen. Reference: NLM CCRIS (2011).

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

· Carcinogenicity

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. Reference: Dow (M)SDS (2010).
15625-89-5 1,1,1-trimethylolpropane triacrylate	
Carcinogenicity	negative (Test species: n/a) (not listed as a Carcinogen by NTP, IARC or OSHA)

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

· Reproductive Toxicity

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).
15625-89-5 1,1,1-trimethylolpropane triacrylate	
Reproductive Toxi.	(No data available)

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

· Specific Target Organ Toxicity - Single Exposure

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).
15625-89-5 1,1,1-trimethylolpropane triacrylate	
STOT-Single	Target: None (rat) (No adverse health effect after a single injection) Altered sleep time including changes in righting reflex, convulsions or effects on seizure threshold, and ataxia were observed after a single intraperitoneal injection with 55 mg/kg bw of the substance to rats. Due to normal use of the substance, the effects can be seen as negligible. Reference: NLM TOXNET (2011).

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

· Specific Target Organ Toxicity - Repeated Exposure

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).
15625-89-5 1,1,1-trimethylolpropane triacrylate	
STOT-Repeated	Target: None (rabbit) (No systemic effects occurred after repeated doses) Reference: HSNO CCID (2011).

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

· Aspiration Hazard	
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	
Aspiration Hazard	(No data available)
15625-89-5 1,1,1-trimethylolpropane triacrylate	
Aspiration Hazard	(No data available)

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

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

*
12 Ecological information

· Aquatic Environmental Toxicity	
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: Dow (M)SDS (2010) and CHRIP (2010).
15625-89-5 1,1,1-trimethylolpropane triacrylate	
Algae Toxicity	2.4 mg/l (Test species: n/a) (LC50 (96 hrs))
Crustacean Toxicity	23 mg/l (Test species: n/a) (LC50 (48 hrs)) ChV (21 days) = 2 mg/L
Fish Toxicity	4.1 mg/l (Test species: n/a) (LC50 (96 hrs)) ChV (28 days) = 0.21 mg/L Based on the non-rapid degradability and Chronic ChV < 1 mg/L, the substance is classified as a Chronic-2 environmental hazard. Reference: HSNO CCID (2011).

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

· Degradability and Stability	
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: Dow (M)SDS (2010) and 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. Reference: Dow (M)SDS (2010).
Stability in water	(No data available)
15625-89-5 1,1,1-trimethylolpropane triacrylate	
Biodegradation	non-biodegrad. (Activated Sludge) (Biodegradation (OECD TG 301C) ≤ 28%) Biodegradation% (Indirect Analysis from BOD; Conc. 100 mg/L; 4 weeks) = 10, 19, 28 Biodegradation% (Direct Analysis from GC; Conc. 100 mg/L; 4 weeks) = 61, 100, 100 The substance formed mono-acrylate esters, di-acrylate esters and acrylic acid with sludge during the GC test; acrylic acid was cause of the high biodegradation percentages. Thus, the result from GC test can't be used for the degradability assessment of the substance. Based on the BOD results, the substance is non-biodegradable. Reference: NITE CHRIP (2011).
Persistence	(Test species: n/a) (The substance is not persistent) Reference: Canada DSL (2007).

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Photodegradation	(No data available)
Stability in water	stable (Test species: n/a) (Calculated by QSAR) Half-life (T1/2) = 3.31E+3 days The substance is hydrolytically stable. Reference: Canada DSL CCR (2011).

· **Bioaccumulation and Distribution**

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. Reference: Dow (M)SDS (2010).
LogPow	3.7 - 3.9 (Test species: n/a) Reference: Dow (M)SDS (2010).

15625-89-5 1,1,1-trimethylolpropane triacrylate

BCF	logBCF=1.50 (Test species: n/a) (The substance is not highly bioaccumulative) Reference: Canada DSL (2007).
Koc	(No data available)
LogPow	2.86 (Test species: n/a) (Calculated by QSAR) Reference: Canada DSL (2007).

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

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

*
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.

*
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, 1,1,1-trimethylolpropane triacrylate)

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· **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

· **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, 1,1,1-trimethylolpropane triacrylate), 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)**

140-88-5	ethyl acrylate	0-<0.1%

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

25068-38-6	Bisphenol-A-(epichlorohydrin) epoxy resin	A, C	70-80%
15625-89-5	1,1,1-trimethylolpropane triacrylate	A, R	20-<25%
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
140-88-5	ethyl acrylate
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)**

103-11-7	2-ethylhexyl acrylate	3
140-88-5	ethyl acrylate	2B

· **NTP (National Toxicology Program)**

140-88-5	ethyl acrylate	R

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

1333-86-4	Carbon black	A4
140-88-5	ethyl acrylate	A4

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

140-88-5	ethyl acrylate

· **International Regulation Lists**

· **Canadian Domestic Substance Listings:**

All ingredients are listed.

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

15625-89-5	1,1,1-trimethylolpropane triacrylate

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

None of the ingredients is listed.

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

All ingredients are listed.

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

25068-38-6	Bisphenol-A-(epichlorohydrin) epoxy resin
15625-89-5	1,1,1-trimethylolpropane triacrylate
1333-86-4	Carbon black
103-11-7	2-ethylhexyl acrylate
140-88-5	ethyl acrylate

· **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.

· **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
CAS: Chemical Abstracts Service (division of the American Chemical Society)
CCR: Canadian Categorization Results
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
ChV: Chronic Value
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
HMIS: US National Paint & Coatings Association (NPCA) Hazardous Materials Identification System
HPVIS: US EPA High Production Volume Information 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
LC50/LD50: Lethal Concentration/Dose, 50 percent
N/a: Not available or Not applicable

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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
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
BCF: Bioconcentration Factor
ESIS: European Chemical Substances Information System
Koc: Partition coefficient, soil Organic Carbon to water
SVHC: EU ECHA Substance of Very High Concern

· **Date of preparation / last revision** *04/06/2015 / 1*