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· **Product Identifier**
· **Trade Name: EP1238 B**
· **Application of the Substance or Mixture:** Epoxy Hardener
· **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)

*
2 Hazard(s) identification

· **Hazard Classification**
Skin Corr. 1B H314 Causes severe skin burns and eye damage.
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)**

GHS05 GHS07

· **Signal Word** Danger

· **Hazard-determining Component(s)**
3,3'-oxybis(ethyleneoxy)bis(propylamine)
Bisphenol-A-(epichlorohydrin) epoxy resin
1, 2, 3-Propanetriyl ester of 12-(oxiranylmethoxy)-9-octadecanoic acid
Resorcinol
· **Hazard statements**
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

· **Precautionary statements**
Do not breathe dusts or mists.
Wear protective gloves.
Wear eye protection / face protection.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center/doctor.
Specific treatment (see on this label).
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 3
Fire = 1
Reactivity = 0

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

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

Health = 3
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: 4246-51-9 EINECS: 224-207-2	3,3'-oxybis(ethyleneoxy)bis(propylamine) Met. Corr.1, H290; Skin Corr. 1B, H314 Skin Sens. 1, H317	50-60%
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 Irrit. 2, H315; Skin Sens. 1, H317 Eye Dam. 2B, H320	10-20%
CAS: 108-46-3 EINECS: 203-585-2 Index Number: 604-010-00-1 RTECS: VG 9625000	Resorcinol Eye Dam. 1, H318 Aquatic Acute 1, H400 Acute Tox. 4, H302; Skin Irrit. 2, H315; Skin Sens. 1B, H317	2.5-5%
CAS: 67762-90-7 EC number: 614-122-2	Siloxanes and Silicones, di-Me, reaction products with silica	2.5-5%

· **Classification System:**
The Classifications were based on the Toxicological and Ecological Data of the substances/mixtures in the Section 11 and 12.
· **Additional Information:**
If the chemical name/CAS number is proprietary and or weight percentage is listed as a range, the specific chemical identity and or percentage of composition has been withheld as a trade secret.

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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.
In case of unconsciousness place patient stably in side position for transportation.
Seek immediate medical advice.

· **After Skin Contact**
Immediately remove all contaminated clothing and put them in a tightly sealed bag.
Immediately wash contaminated skin with water and soap and rinse them thoroughly.
Seek immediate medical advice even if no symptoms develop.

· **After Eye Contact**
Immediately irrigate eye while holding eyelids apart and continue to irrigate until patient receives medical attention. Continue to irrigate for one hour if medical attention is not promptly available.
Do not put any ointments, oils or medication in eyes without specific instructions.
IMMEDIATELY transport victim to a hospital even if no symptoms develop.

· **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.
Do NOT induce vomiting.
Seek immediate medical advice.

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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.
Runoff from fire control or dilution water may be corrosive and/or toxic; 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:
May generate ammonia gas.
Phenolics
Formaldehyde, a skin and lung sensitizer and a regulated carcinogen, may be formed during fires.

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Carbon dioxide (CO_2) and Carbon monoxide (CO)
Nitrogen oxides
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).
As with any fire, wear positive-pressure self-contained breathing apparatus and full protective gear that are NIOSH approved.

· **Additional Information** Ensure adequate and functional fire fighting facilities equipped in working area at all times.

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6 Accidental release measures

· **Personal Precautions**
Do not touch damaged containers or spills unless wearing appropriate protective equipment.
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.
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.

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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.
Avoid any body contact of containers or contents unless wearing appropriate personal protective equipment.
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.

· **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**	
108-46-3 Resorcinol	
REL	Short-term value: 90 mg/m³, 20 ppm Long-term value: 45 mg/m³, 10 ppm
TLV	Short-term value: 90 mg/m³, 20 ppm Long-term value: 45 mg/m³, 10 ppm
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

· **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.

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· **Personal Protective**
· **General Protective and Hygienic Measures** Avoid any contact with skin or eye.
· **Personal Protective Equipment (PPE)**
· **Breathing Equipment**
Where the potential for over-exposure exists, use a NIOSH approved supplied-air respirator with a full facepiece operated in a pressure-demand or other positive-pressure mode.
· **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**

Brief or short term use: Tightly sealed goggles

Intensive or long term use: Tightly sealed goggles and Face Shields

· **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:** Liquid
· **Color:** Amber
· **Odor:** Amine-like
· **Odor Threshold:** Not determined.

· **PH-Value:** Not determined.

· **Change in Condition:**
· **Melting Point:** Not determined.
· **Boiling Point:** Not determined.
· **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):** 1.09 g/cm³ (9.096 lbs/gal)
· **Solubility in or Miscibility with**
· **Water:** Soluble.
· **Viscosity:**
· **Dynamic at 20 °C (68 °F):** 90000 mPas
· **Kinematic:** Not determined.

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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)** No further relevant information available.
· **Incompatible Material(s)**
Amines.

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Oxidizing agents
Acids
Iron and iron salts
Albumin; Camphor; Urethane; Menthol; Acetanilide; Spirit nitrous ether; and Antipyrine

· **Hazardous Decomposition Product(s)**
Ammonia (NH_3) and/or Amines.
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**		
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)		
Oral	LD50	4290 mg/kg (rat) Reference: Dixie Chemical (M)SDS (2006) and ChemID Full Record (2011).
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).
108-46-3 Resorcinol		
Oral	LD50	510 mg/kg (rat) Reference: Oxychem (M)SDS (2015).
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):**
If swallowed, may cause:
irritation of mucous membrane
weakness
headache
dizziness
Not a classified acute oral hazard.
pallor, sweating, tinnitus, and shock

· **Dermal**		
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)		
Dermal	LD50	2500 mg/kg (rabbit) (Calculated from LD50 of 2.5 mL/kg) Reference: Dixie Chemical (M)SDS (2006) and ChemID Full Record (2011). Air Products SDS (2014)
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).
108-46-3 Resorcinol		
Dermal	LD50	3360 mg/kg (rabbit) Reference: Oxychem 2015
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**		
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)		
Inhalative	LC50/4 h	(No data available)
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)
108-46-3 Resorcinol		
Inhalative	LC50/4 h	>5600 mg/l (rat) (LC0 (8 hrs, aerosol) ≥ 2.8mg/l (622 ppm)) Reference: Oxychem 2015

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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):**
cough
dizziness or lightheadedness
headache
nausea
shortness of breath
sore throat
wheezing
dyspnea
convulsion
methemoglobinemia (blue skin, blue lips, and blue finger nails)
Not a classified acute inhalative hazard.

· **Skin Corrosion or Irritation**	
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
Corrosion/Irritation	corrosive (rabbit) (serious and irreversible skin effects observed) Application with 0.5 mL of the substance to rabbit skin resulted in severe erythema, moderate edema, ecchymosis, and necrosis which still remained after 21 days. Thus, the substance was classified as a corrosive skin irritant (Category 1). Reference: Dixie Chemical (M)SDS (2006) and EPA National Cancer Institute report (2011).
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).
108-46-3 Resorcinol	
Corrosion/Irritation	irritating (rabbit) (FHSLA method; 500mg neat substance) Primary dermal irritation index (PDII): 4.4; the substance was therefore classified as irritating (Category 2) to rabbit skin based on the criteria. Reference: ECHA (2012).
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 severe skin burns and eye damage.
In contact with skin, may cause:
dryness
skin rash
redness, pain and severe skin burns

· **Eye Serious Damage or Irritation**	
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
Damage/Irritation	serious damage (Test species: n/a) (Based on the corrosive effects to rabbit skin) Based on the corrosive effects to rabbit skin, the substance was classified as a serious eye irritant (Category 1).
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)
108-46-3 Resorcinol	
Damage/Irritation	corrosive (rabbit) Overall irritation score: 105/110 (FHSLA method; 0.1g neat substance; Max. score: 110; Time point: 24+48+72 hrs; mean score of all treated animals); irreversible at the end of the test; the substance was therefore classified as corrosive/ seriously damage to rabbit eyes. Reference: ECHA (2012).
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 damage.
In contact with eye, may cause:
decrease or loss of vision
redness, pain and severe deep burns

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· **Respiratory or Skin Sensitization**

4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)		
Sensitization	Skin	(No data available)
	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)
108-46-3 Resorcinol		
Sensitization	Skin	sensitizing (mouse) (OECD TG 429; intradermal and epicutaneous; max.25%) Stimulation Index (Concentration: 0.1%, 0.5%, 1%, 5%, and 25%) = 1.58, 2.87, 1.97, 3.51, and 5.74 respectively. Thus, the threshold positive value of 3 was exceeded at concentrations equal to 5% and the above; the substance was therefore considered as positive in this LLNA test, and as a moderate skin sensitizer based on the classification criteria. Reference: ECHA (2012).
	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 skin sensitization; classification is not possible.
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**

4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
Mutagenicity	(No data available) (Ames) Not mutagenic in AMES test. Air Products SDS (2014)
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)
108-46-3 Resorcinol	
Mutagenicity	negative (Test species listed below) In Vitro (Bacterial reverse mutation assay; OECD TG 471; S. typhimurium TA98, TA100, TA1535, TA1537, TA102) - negative with and without metabolic activation In Vitro (Sister chromatid exchange assay in Chinese hamster Ovary (CHO) cells) - positive with metabolic activation In Vitro (Mammalian cell micronucleus test; OECD TG 487; Human (female) lymphocyte cultures) - positive with and without metabolic activation In Vitro (Mammalian cell gene mutation assay; OECD TG 476; mouse lymphoma L5178Y cells) - negative with and without metabolic activation In Vivo (Drosophila SLRL test; Drosophila melanogaster; oral with up to 11000 ppm) - negative In Vivo (Sister chromatid exchange assay; rat; intraperitoneal with up to 100 mg/kg bw) - negative In Vivo (Micronucleus assay; OECD TG 474; rat, oral with up to 500 mg/kg bw) - negative Only negative results were observed from the In Vivo tests, the substance was therefore considered as negative for mutagenicity. Reference: ECHA (2012).
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 relevant information; classification is not possible.

· **Carcinogenicity**

4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
Carcinogenicity	negative (Test species: n/a) (not listed as a Carcinogen by NTP, IARC or OSHA)
25068-38-6 Bisphenol-A-(epichlorohydrin) epoxy resin	

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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)
108-46-3 Resorcinol	
Carcinogenicity	negative (Test species: n/a) Not listed as a carcinogen by ACGIH, NTP, or OSHA; and listed as a Group 3 carcinogen by IARC, which was not classifiable as to its carcinogenicity to humans.
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**	
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
Reproductive Toxi.	(No data available) No data available on the product itself.
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)
108-46-3 Resorcinol	
Reproductive Toxi.	negative (rat) NOAEL (Toxicity to reproduction; OECD TG 416; both sexes; P, F0 and F1 generations; oral with up to 3000 mg/l) = 3000 mg/l; no relevant effects observed. NOAEL (Developmental toxicity; OECD TG 414; oral with up to 250 mg/kg/day; maternal toxicity) = 80 mg/kg bw/day; statistically significant body weight changes were observed in the maternal animals. NOAEL (Developmental toxicity; OECD TG 414; oral with up to 250 mg/kg/day; teratogenicity) = 250 mg/kg bw/day; no relevant effects observed. When considering all of the evidence, the substance was not classified as a reproductive hazard. Reference: ECHA (2012).
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.
No relevant information; classification is not possible.

· **Specific Target Organ Toxicity - Single Exposure**	
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
STOT-Single	(No data available)
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)
108-46-3 Resorcinol	
STOT-Single	(Human) Based on human epidemiological report, effects including restlessness, methemoglobinemia, cyanosis, dizziness, drowsiness, convulsions, tachycardia, dyspnea, decrease of body temperature, decrease of blood pressure, lower respiratory rate, jaundice, and even mortalities occurred after oral inoculation or percutaneous exposure of the substance. However, the substance was not a confirmed hazard via single exposure according to US Federal agencies. Classification was therefore not possible without further information. Reference: GHS-J (2006) and ECHA (2012).
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
STOT-Single (dynamic)	(No data available)

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

· **Specific Target Organ Toxicity - Repeated Exposure**	
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
STOT-Repeated	(No data available)
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)

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108-46-3 Resorcinol	
STOT-Repeated	(rat) NOAEL (OECD TG 408; oral with up to 250 mg/kg bw/day) = 80 mg/kg bw/day; effects including intermittent convulsive movements and excessive salivation were observed. However, ECHA determined it as conclusive but not sufficient for classification. Reference: GHS-J (2006) and ECHA (2012).
67762-90-7 Siloxanes and Silicones, di-Me, reaction products with silica	
STOT-Repeated	(No data available)

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

· **Aspiration Hazard**	
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
Aspiration Hazard	(No data available)
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)
108-46-3 Resorcinol	
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**	
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
Algae Toxicity	(No data available)
Crustacean Toxicity	(No data available)
Fish Toxicity	9730 mg/l (Test species: n/a) (Calculated by QSAR) Reference: CCR (2011).
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)
108-46-3 Resorcinol	
Algae Toxicity	> 97 mg/l (Pseudokirchneriella subcapitata) (EC50 (72 hrs); OECD TG 201)
Crustacean Toxicity	1.0 mg/l (Daphnia magna (water flea)) (EC50 (48 hrs); OECD TG 202) 78 mg/l (Palaemonetes pugio) (LC50 (48 hrs); EPA 660/3-75-009) Based on the rapid-degradability and the acute EC50 = 1mg/l, the substance is classified as an Acute-1 environmental hazard.
Fish Toxicity	26.8 mg/l (Pimephales promelas (fathead minnow)) (LC50 (96 hrs); EPA-660/3/75-009) 34.7 mg/l (Leuciscus idus) (LC50 (96 hrs)) 260 mg/l (Oncorhynchus mykiss) (EC50 (60 days); OECD Draft "ELS-Test") Based on the chronic EC50 >> 1 mg/l, the substance is not classified as a chronic environmental hazard. Reference: ECHA (2012).
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.
Not a known Environmental hazard to aquatic life.

· **Degradability and Stability**	
4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
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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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)
108-46-3 Resorcinol	
Biodegradation	readily biodeg. (Test species: n/a) (OECD TG 301C; Chemical conc. 100 ppm; 2 weeks) Biodegradation (Indirect analysis from BOD) = 66.7% Biodegradation (Direct analysis from TOC, UV-vis, and HPLC) = 100%, 100%, and 100%. The substance is readily biodegradable. Reference: CHRIP (2012).
Persistence	(Test species: n/a) The substance is not persistent. Reference: Canada DSL (2007).
Photodegradation	2.0E-10 cm³/molecule-sec (OH radical) Half-life (5E5 molecule/cm³) = 0.1 day Reference: ECHA (2012).
Stability in water	(Test species: n/a) The substance has no functional groups susceptible to hydrolyze under environmentally relevant pH and temperature conditions. Reference: ECHA (2012).
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)

· **Bioaccumulation and Distribution**

4246-51-9 3,3'-oxybis(ethyleneoxy)bis(propylamine)	
BCF	LogBCF=0.5 (Test species: n/a) (The substance is not bioaccumulative) Reference: Canada DSL (2007).
Koc	(No data available)
LogPow	- 1.46 (Test species: n/a) (Calculated by KowWin) Reference: CCR (2011).
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)
108-46-3 Resorcinol	
BCF	3.16 (Test species: n/a) (Calculated by EPISuite v 3.12) The substance is not bioaccumulative. Reference: ECHA (2012).
Koc	10.36 L/kg (Test species: n/a) (20 °C) The substance has very low soil sorption. Based on Level 3 Fugacity Modeling, the substance will partition primarily to soil (63.8%) and to a lesser extent water (36.1%). Reference: ECHA (2012).
LogPow	0.8 (Test species: n/a) (20 °C) Reference: ECHA (2012).
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).

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Koc	(No data available)
LogPow	(No data available)

· **Degradability and Bioaccumulation Assessment:** No further relevant information; assessment is not possible.

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13 Disposal considerations

· **Hazardous Waste List**
· **Description:** Regulated as a hazardous waste for disposal.

· **RCRA Waste:**

108-46-3	Resorcinol	U201	2.5-5%

· **Additional Information of the Hazardous Waste List** Classification was according to the U.S. Federal Regulation: 40 CFR 261.

· **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** UN2735

· **UN Proper Shipping Name**
· **DOT, ADR, IMDG, IATA** Amines, liquid, corrosive, n.o.s. (3,3'-oxybis(ethyleneoxy) bis(propylamine))

· **Transport hazard class(es)**

· **DOT**

· **Class** 8 Corrosive substances
· **Label** 8

· **ADR**

· **Class** 8 (C7) Corrosive substances
· **Label** 8

· **IMDG**

· **Class** 8 Corrosive substances
· **Label** 8

· **IATA**

· **Class** 8 Corrosive substances
· **Label** 8

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

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

· **Special Precautions:** Warning: Corrosive substances
· **Danger Code (Kemler):** 86

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· **EMS Number:**	F-A,S-B
· **Segregation Groups**	Alkalis
· **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: 1 L On cargo aircraft only: 30 L
· **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)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN 2735 AMINES, LIQUID, CORROSIVE, N.O.S. (3,3'-OXYBIS(ETHYLENEOXY)BIS(PROPYLAMINE)), 8, 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)**

4246-51-9	3,3'-oxybis(ethyleneoxy)bis(propylamine)	A, C	50-60%
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	10-20%

· **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**

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)**

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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

108-46-3	Resorcinol	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.

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· **Canadian Ingredient Disclosure list (limit 1%)**	
108-46-3	Resorcinol
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.

· **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)
CCR: Canadian Categorization Results
CCRIS: US NLM TOXNET Chemical Carcinogenesis Research Information System
ChemID (Full Record): US NLM Chemical Information Database (or its Full Record) designed to help search for information by chemical name or structure
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** 09/16/2015 / 5