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Product Name: GC POTTING EPOXY, PART A (RESIN)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Type: Adhesive
Product Name: **GC POTTING EPOXY, PART A (RESIN)**
Part Number(s): 19-823-1R
19-824-1R
19-824-2G

Emergency Contact: Chemtrec
Phone: (800) 424-9300

SECTION 2. HAZARDS 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 substance 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

· ***Hazard statements***
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
Toxic to aquatic life with long lasting effects.

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SECTION 2. HAZARDS IDENTIFICATION (CONTINUED)

· ***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.
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.

· ***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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SECTION 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	90-100%

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

SECTION 4. FIRST AID MEASURES

· **Description of First Aid Measures**

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

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

· **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.

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

· **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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Product Name: GC POTTING EPOXY, PART A (RESIN)

SECTION 5. FIRE-FIGHTING MEASURES

· ***Extinguishing Media***

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

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

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

· ***Special Hazards Arising in Fire***
Will not burn unless preheated.
In case of fire, following can be released:
Phenolic compounds
Carbon dioxide (CO_2) and Carbon monoxide (CO)

· ***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.*

SECTION 6. ACCIDENTAL RELEASE MEASURES

· ***Personal Precautions***
Avoid contact with skin, eyes, and clothing.
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.
Absorb spills with inert materials like sand and or vermiculite.
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.

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

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Product Name: GC POTTING EPOXY, PART A (RESIN)

SECTION 7. HANDLING AND STORAGE

· ***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.

· ***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.*

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

· ***Engineering Measures or Controls***

· ***Exposure Limit Values that Require Monitoring at the Workplace***
The substance/mixture does not contain any relevant quantities of substances with critical values that have to be monitored at the workplace.

· ***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 skin contact.
Do not eat, drink or smoke during work.
Avoid any contact with the eye.
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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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

· **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.

SECTION 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:**	*>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.*
· **Density at 25 °C (77 °F):**	*1.16 g/cm³ (9.68 lbs/gal)*
· **Solubility in or Miscibility with**	
· **Water:**	*Not miscible or difficult to mix.*
· **Henry's Law Constant:**	*Not determined*
· **Viscosity:**	
· **Dynamic at 20 °C (68 °F):**	*14000 mPas*
· **Kinematic:**	*Not determined.*
· **Additional Information**	*No further relevant information.*

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SECTION 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.
Mercaptans
Oxidizing 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)*** *No relevant information.*

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

SECTION 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).

· ***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).

· ***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)

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

· **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).

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

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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

· **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.

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

· **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).

· **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).

· **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).

· **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).

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

· **Specific Target Organ Toxicity - Repeated Exposure**

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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

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).

· **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)

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

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

SECTION 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).

· **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)

· **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).

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

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

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SECTION 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.*

SECTION 14. TRANSPORT INFORMATION

· ***UN-Number***

· ***DOT, ADR, IMDG, IATA*** *UN3082*

· ***UN Proper Shipping Name***

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

· ***Transport hazard class(es)***

· ***DOT, IMDG, IATA***

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

· ***Label*** *9*

· ***ADR***

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

· ***Label*** *9*

· ***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*

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SECTION 14. TRANSPORT INFORMATION (CONTINUED)

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

· **Transport/Additional Information:**

· **DOT**

· **Quantity limitations** On passenger aircraft/rail: No limit
On cargo aircraft only: No limit

· **Remarks:** Special marking with the symbol (fish and tree).

· **ADR**

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

· **IMDG**

· **Limited quantities (LQ)** 5L

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

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

SECTION 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	90-100%
1333-86-4	Carbon black (Wetted form)	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**

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

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SECTION 15. REGULATORY INFORMATION (CONTINUED)

· **Chemicals Known to Cause Developmental Toxicity**

None of the ingredients is listed.

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

1333-86-4	Carbon black (Wetted form)	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%)**

None of the ingredients is listed.

· **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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SECTION 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.

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
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
NLM TOXNET: US National Library of Medicine Toxicology Data Network
NITE: National Institute of Technology and Evaluation, Japan
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
ECHA: European Chemicals Agency's Dissemination portal with information on chemical substances registered under REACH

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SECTION 17. DISCLAIMER

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Product Name: GC POTTING EPOXY, PART B (HARDENER)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product Type: Adhesive
Product Name: **GC POTTING EPOXY, PART B (HARDNER)**
Part Number(s): 19-823-2R
19-824-2R
19-824-2G

Emergency Contact: Chemtrec
Phone: (800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Hazard Classification

GHS08 Health hazard

Repr. 2	*H361*	*Suspected of damaging fertility or the unborn child.*
STOT RE 1	*H372*	*Causes damage to the respiratory system through prolonged or repeated exposure.*

GHS05 Corrosion

Skin Corr. 1B	*H314*	*Causes severe skin burns and eye damage.*
Eye Dam. 1	*H318*	*Causes serious eye damage.*

GHS09 Environment

Aquatic Acute 1	*H400*	*Very toxic to aquatic life.*
Aquatic Chronic 1	*H410*	*Very toxic to aquatic life with long lasting effects.*

GHS07

Acute Tox. 4	*H302*	*Harmful if swallowed.*
Skin Sens. 1	*H317*	*May cause an allergic skin reaction.*

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SECTION 2. HAZARDS IDENTIFICATION (CONTINUED)

· **Label Elements**

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

· **Pictogram(s)**

GHS05 GHS07 GHS08 GHS09

· **Signal Word** Danger

· **Hazard-determining Component(s)**
Benzyl alcohol
Isophorone diamine
4-Nonylphenol, branched
Amine Epoxy Resin Adduct - Proprietary CAS number withheld as permitted by 29CFR1910.1200(i).

· **Hazard statements**
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
Causes damage to the respiratory system through prolonged or repeated exposure.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**
Do not breathe dusts or mists.
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.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not eat, drink or smoke when using this product.
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 swallowed: Call a poison center/doctor if you feel unwell.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
If swallowed: Rinse mouth. Do NOT induce vomiting.
Get medical advice/attention if you feel unwell.
Collect spillage.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Prevention**
Do not breathe dust/fume/gas/mist/vapors/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
Avoid release to the environment.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not eat, drink or smoke when using this product.
Avoid breathing dust/fume/gas/mist/vapors/spray

· **Disposal** 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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Product Name: GC POTTING EPOXY, PART B (HARDENER)

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

· **Chemical Characterization: Mixtures**

· **Composition/Information on Ingredients**

CAS: 68410-23-1 EC number: 614-452-7	Polyamide Resin Skin Irrit. 2, H315; Eye Irrit. 2A, H319 Aquatic Chronic 3, H412	40-50%
CAS: 100-51-6 EINECS: 202-859-9 Index Number: 603-057-00-5 RTECS: DN 3150000	Benzyl alcohol Acute Tox. 4, H302; Acute Tox. 4, H332; Eye Irrit. 2A, H319 Aquatic Acute 2, H401	10-20%
CAS: 2855-13-2 EINECS: 220-666-8 Index Number: 612-067-00-9	Isophorone diamine Skin Corr. 1B, H314 Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Sens. 1, H317 Aquatic Chronic 3, H412	10-20%
	Modified Aliphatic Amines	10-20%
CAS: 84852-15-3 EINECS: 284-625-5 Index Number: 601-053-00-8	4-Nonylphenol, branched Repr. 2, H361 Skin Corr. 1B, H314; Eye Dam. 1, H318 Aquatic Chronic 1, H410 Acute Tox. 4, H302	10-20%
CAS: 112-24-3 EINECS: 203-950-6 Index Number: 612-059-00-5 RTECS: YE6650000	Triethylenetetramine Skin Corr. 1B, H314; Eye Dam. 1, H318 Acute Tox. 4, H312; Skin Sens. 1, H317 Aquatic Chronic 3, H412	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.

SECTION 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.
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
If breathing is difficult, administer oxygen.
Seek immediate medical advice even if no symptoms develop.

· **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 rinse opened eyes for at least 15 minutes under running water.
Immediately remove contact lenses if present. Continue rinsing.
Do not put any ointments, oils or medication in eyes without specific instructions.

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SECTION 4. FIRST-AID MEASURES CONTINUED

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.
If vomiting occurs spontaneously, keep victim's head below hips to prevent aspiration of liquid into lungs.
Seek immediate medical advice.

· ***After Exposure*** *Get medical advice/attention at once.*

· ***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
kidney tests
Reproductive system function 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.

SECTION 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.
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.
Fight fire from protected location or safe distance.
Contain fire water runoff if possible to prevent environmental pollution.

· ***Special Hazards Arising in Fire***
Will not burn unless preheated.
In case of fire, following can be released:
May generate ammonia gas.
nitric acid
Various hydrocarbons
Carbon dioxide (CO_2) and Carbon monoxide (CO)
Nitrogen oxides

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SECTION 5. FIRE-FIGHTING MEASURES

· ***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.*

SECTION 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.
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.

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

SECTION 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.
Ensure good ventilation and/or exhaustion at workplace.
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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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

· **Engineering Measures or Controls**

· Exposure Limit Values that Require Monitoring at the Workplace	
100-51-6 Benzyl alcohol	
TEEL-1	Short-term value: 260 mg/m³, 60.0 ppm
TEEL-2	Short-term value: 660 mg/m³, 150.0 ppm
TEEL-3	Short-term value: 660 mg/m³, 150.0 ppm
WEEL	Long-term value: 10 ppm
84852-15-3 4-Nonylphenol, branched	
TEEL-1	Short-term value: 20 mg/m³
TEEL-2	Short-term value: 125 mg/m³
TEEL-3	Short-term value: 500 mg/m³
112-24-3 Triethylenetetramine	
WEEL	Long-term value: 6 mg/m³, 1 ppm Skin

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

· **Personal Protective Equipment (PPE)**

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

· **Hand Protection**

Protective gloves

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

· **Eye Protection**

Brief or short term use: Tightly sealed goggles

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

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

· **Body Protection**

Intensive or long term use: Protective Clothing

· **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.

SECTION 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:**	*>140 °C (>284 °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:**	*Not determined.*
· **Density at 25 °C (77 °F):**	*0.98 g/cm³ (8.178 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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SECTION 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 react with strong reducing agents generating flammable hydrogen (H_2).
May slowly corrode aluminum and steel.
May potentially cause an explosion when in contact with concentrated sulfuric acid and strong hydrogen peroxide.

· ***Incompatible Material(s)***
Acid chlorides
Acid anhydrides
Strong reducing agents
Sodium hypochlorite, Nitrous acid and other nitrosating agents
Bases (Alkalis)
Halogens
Isocyanates
Acids
Strong oxidizing agent
Zinc and Galvanized Surfaces
Copper and copper alloys

· ***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.*

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

SECTION 11. TOXICOLOGICAL INFORMATION

· ***Acute Toxicity***

· ***Oral***

100-51-6 Benzyl alcohol		
Oral	*LD50*	*1580 mg/kg (mouse)* *1610 mg/kg (rat) (Directive 84/449/EEC)* *Reference: OECD SIDS (2001).*
2855-13-2 Isophorone diamine		
Oral	*LD50*	*1030 mg/kg (rat) (males)* *Reference: OECD SIDS (2004).*
84852-15-3 4-Nonylphenol, branched		
Oral	*LD50*	*1604 mg/kg (rat)* *Reference: Royce SDS (2015)*

· ***Potential Health Effect(s):***
If swallowed, may cause:
diarrhea
shock or collapse
cramps
abnormal pain, headache, nausea, vomiting, drowsiness
See acute inhalative effect(s) for further information

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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

· ***Dermal***

100-51-6 Benzyl alcohol		
Dermal	*LD50*	*2000 mg/kg (rabbit)* *< 5 mL/kg (guinea pig)* *Reference: OECD SIDS (2001).*
2855-13-2 Isophorone diamine		
Dermal	*LD50*	*1840 mg/kg (rabbit) (Estimated from 2.0 ml/kg)* *Reference: DuPont (M)SDS (2001).*
84852-15-3 4-Nonylphenol, branched		
Dermal	*LD50*	*2031 mg/kg (rabbit)* *Royce SDS (2015)*

· ***Potential Health Effect(s):***
Harmful in contact with skin.
See acute inhalative effect(s) for further information.

· ***Inhalative***

100-51-6 Benzyl alcohol		
Inhalative	*LC50/4 h*	*(rat) (LC50 exceeded the satured vapor value)* *LC50 (4 hours) = 8.9 mg/L (Calculated from 2000ppm and 1ppm = 4.42E-3 mg/L)* *LC50 (4 hours) = 8.8 mg/L (Extrapolated from LC50 (8 hrs) of 1000 ppm according to Haber's law)* *The LC50 value (4 hours) of 2000ppm was higher than the saturated vapor concentration (30 ppm) under a saturated vapour pressure of 0.03hPa (20 °C), the substance was considered as "mist containing substantially no vapor". Thus, the substance was not classified as an inhalative hazard based on the criteria.* *Reference: OECD SIDS (2001) and NLM HSDB (2011).*
2855-13-2 Isophorone diamine		
Inhalative	*LC50/4 h*	*(rat) (No relevant information available of LC50)* *Approximate lethal concentration (ALC; 4 hours) = 4.6 mg/l* *No relevant information available of LC50; classification of acute inhalation hazard was not possible.* *Reference: OECD SIDS (2004).*
84852-15-3 4-Nonylphenol, branched		
Inhalative	*LC50/4 h*	*(mouse) (Non-toxic; LC50 exceeded the satured vapor value)* *At 267 mg/m³ (230 ppm), there was no significant depression. At the saturated vapor concentration of 3636 mg/m³ (400 ppm) at 70 ℃, there was sensory irritation observed which was rapidly gone after removal from exposure. The substance was not classified as an acute inhalative hazard under its regular use.* *Reference: IUCLID Dataset (2000).*

· ***Potential Health Effect(s):***
While not possible to classify the acute inhalative hazard due to missing data, the product may cause the following symptom(s):
dizziness or lightheadedness
sore throat
asthma
diarrhea
cough, headache, nausea, shortness of breath, vomiting, and wheezing

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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

· ***Skin Corrosion or Irritation***

68410-23-1 Fatty acids, C18 unsatd., dimers, reaction products with polyethylenepolyamines	
Corrosion/Irritation	(Not applicable) (OECD Test Guideline 431) Not considered to be corrosive to skin in the in vitro skin model EpiDermTM. Source: ECHA REACH Dossier GLP Study 2012

100-51-6 Benzyl alcohol	
Corrosion/Irritation	(rabbit) (slightly irritating) non-irritating (OECD TG 404) Erythema: 0/4 (Max. 4; 1, 24, 48 hrs and 7 days; 2 out of 3 animals) Erythema: (0-1)/4 (Max. 4; 1, 24, 48 hrs and 7 days; 1 out of 3 animals). slightly irritating (test detail was not available) For safety reason, the substance was classified as slightly irritating to rabbit skin (Category 3). Reference: ECHA (2011) and OECD SIDS (2001).

2855-13-2 Isophorone diamine	
Corrosion/Irritation	corrosive (rabbit) (FDA Guideline and Draize test) Erythema: 4/4 (Max. 4; mean score of all treated animals); not reversible within 72 hrs. Edema: (>0)/4 (Max. 4; mean score of all treated animals); not reversible within 72 hrs. Overall irritation: (>4)/8 (Max. 8; mean score of all treated animals); not reversible within 72 hrs. The substance was classified to be corrosive (Category 1) to rabbit skin based on the criteria. Reference: ECHA (2011).

84852-15-3 4-Nonylphenol, branched	
Corrosion/Irritation	corrosive (rabbit) (Directive 84/449/EEC B4; Post-exposure: 8 days) All tested animals showed signs of erythema, edema, and eschar which were not fully reversible within 8 days. Reference: IUCLID Dataset (2000).

· ***Potential Health Effect(s):***
Causes severe skin burns and eye damage.
In contact with skin, may cause:
blister formulation
redness, pain and severe skin burns

· ***Eye Serious Damage or Irritation***

100-51-6 Benzyl alcohol	
Damage/Irritation	Irritating (rabbit) (0.1 ml neat substance; 7 days) Cornea: 1 (Max. 4; mean score of 2 animals); not fully reversible in 7 days Iris: ≤1 (Max. 2; mean score of 2 animals); fully reversible in 7 days Conjunctivae: ≤2 (Max. 3; mean score of 2 animals); fully reversible in 7 days Chemosis: ≤2 (Max. 4; mean score of 2 animals); fully reversible in 7 days The substance was classified as moderately irritating to rabbit eyes (Category 2A). Reference: ECHA (2011).

2855-13-2 Isophorone diamine	
Damage/Irritation	serious irrit. (rabbit) (OECD TG 405; 0.1 mL neat substance) Overall irritation: 110/110 (Max. 110); not reversible within the test period. The substance produced serious injury almost immediately after application (opalescence); and conjunctiva showed necrosis 24 hours after treatment. Based on the classification criteria, the substance was classified as a serious eye irritant (Category 1) to rabbit eyes. Reference: ECHA (2011).

84852-15-3 4-Nonylphenol, branched	
Damage/Irritation	serious irrit. (rabbit) (Draize Test) There was corneal opacity in all animals and iritis in two. Meanwhile, all treated animals showed marked conjunctival involvement with transient discharges. Thus, the substance was classified as a serious eye irritant (Category 1). Reference: IUCLID Dataset (2000).

· ***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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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

· **Respiratory or Skin Sensitization**

100-51-6 Benzyl alcohol		
Sensitization	Skin	Sensitizing (Human) (Patch-Test) (guinea pig) Not sensitizing (Draize Test and Maximization Test) Sensitizing (Open epicutaneous test and Freund's complete adjuvant test) For safety reason, the substance was classified as a skin sensitizer. Reference: OECD SIDS (2001).
	Respiratory	(No data available)
2855-13-2 Isophorone diamine		
Sensitization	Skin	sensitizing (guinea pig) (OECD TG 406; epicutaneous and occlusive) Positive reaction number (negative controlled group: Substance Conc. 0 %) = 0 (at 24+48+72 hrs). Positive reaction number (Conc. 2.5%) = 7 (24 hrs); 5 (48 hrs); and 2 (72 hrs). Positive reaction number (Conc. 5%) = 18 (24 hrs); 15 (48 hrs); and 10 (72 hrs). The substance was classified as a dermal sensitizer (Category 1) to pig skin. Reference: ECHA (2011).
	Respiratory	N/A (Human) (due to limitation of the evidence) There was one single human case described some possible airway effects of the substance; however, no definite conclusion can be drawn on respiratory sensitization due to limitation of the evidence. Reference: OECD SIDS (2004).
84852-15-3 4-Nonylphenol, branched		
Sensitization	Skin	not sensitizing (guinea pig) (Buehler test with OECD TG 406) Guinea pig maximization test - negative There was no significant difference between treated and negative controlled groups; the substance was not classified as a dermal sensitizer. Reference: IUCLID Dataset (2000).
	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.

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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

· **Germ Cell Mutagenicity**

100-51-6 Benzyl alcohol	
Mutagenicity	Negative (mouse) (In Vivo (micronucleus assay; OECD TG 474)) In Vitro (mammalian chromosome aberration test in Chinese hamster Ovary (CHO) cells) - negative without metabolic activation; weakly positive with metabolic activation. In Vitro (bacterial reverse mutation assay in Salmonella typhimuriun (TA98, TA100, TA1535, and TA1537 strains) with OECD TG 471) - negative with and without metabolic activation In Vivo (micronucleus assay; mouse (ddY strains); OECD TG 474; intraperitoneal injection with up to 200 mg/kg bw) - negative; there was no indication of micronucleus induction at any dose tested. When considering all of the evidence, the substance was not a classified mutagen. Reference: ECHA (2011).
2855-13-2 Isophorone diamine	
Mutagenicity	negative (mouse) (In Vivo (micronucleus assay); OECD TG 474) In Vitro (Bacterial reverse mutation assay in S. typhimurium TA 98, TA 100, TA 1535, TA 1537, and TA1538 strains with OECD TG 471) - negative with and without metabolic activation. In Vitro (Mammalian chromosome aberration test in Chinese hamster Ovary (CHO) cells with OECD TG 473) - negative with and without metabolic activation. In Vitro (HGPRT assay in CHO K1 cells with OECD TG 476) - negative with and without metabolic activation. In Vivo (Male and female NMRI mice; micronucleus assay; OECD TG 474; single oral dose with up to 500 mg/kg bw) - negative; the substance did not result in any increase in number of micronucleated polychromatic erythrocytes (PCE), or any effects in the PCE/NCE ratios. Reference: ECHA (2011).
84852-15-3 4-Nonylphenol, branched	
Mutagenicity	negative (mouse) (In Vivo (Directive 79/831/EEC, B12)) In Vitro (Ames test; salmonella typhimurium) - negative with and without metabolic activation In Vitro (HGPRT assay with OECD TG 476; Chinese Hamster) - negative with and without metabolic activation In Vivo (Directive 79/831/EEC, B12; mouse) - no mutagenic effects in mouse erythrocytes were observed during the test sampling time. Reference: IUCLID Dataset (2000).

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

· **Carcinogenicity**

100-51-6 Benzyl alcohol	
Carcinogenicity	Negative (rat) (No carcinogenic effect after oral doses for 2yrs) NOAEL (carcinogenicity; oral; 103 weeks; OECD TG 453) = 400 mg/kg bw/d (maximum dose test): no evidence of carcinogenic activity was observed. Reference: ECHA (2011).
2855-13-2 Isophorone diamine	
Carcinogenicity	negative (Test species: n/a) (not listed as a Carcinogen by NTP, IARC or OSHA)
84852-15-3 4-Nonylphenol, branched	
Carcinogenicity	negative (Test species: n/a) (not listed as a Carcinogen by NTP, IARC or OSHA) Reference: Hexion (M)SDS (2004).

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

· **Reproductive Toxicity**

100-51-6 Benzyl alcohol	
Reproductive Toxi.	Negative (mouse) (No developmental or maternal toxicity observed) NOAEL (oral; developmental toxicity) = 550 mg/kg bw/day; no adverse effect observed. NOAEL (oral; maternal toxicity) = 550 mg/kg bw/day; no adverse effect observed. Reference: ECHA (2011).
2855-13-2 Isophorone diamine	
Reproductive Toxi.	negative (rat) (OECD TG 408; Oral with up to 160 mg/kg/d) No effects were observed regarding the reproductive organs in concentrations up to 160 mg/kg bw/day for 90 days. (rat) (OECD TG 414; Oral; Up to 250 mg/kg bw/day) NOAEL (Embryotoxicity; Fetotoxicity; Maternal toxicity; and teratogenicity) ≥ 250 mg/kg bw/day (highest dose tested); no effects were found with up to the highest dose level. Thus, the substance was not classified as a reproductive hazard. Reference: OECD SIDS (2004) and ECHA (2011).

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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

84852-15-3 4-Nonylphenol, branched	
Reproductive Toxi.	positive (rat) (NOAEL (oral) = 15 mg/kg/day) There were adverse effects on pups observed at the non-maternally toxic doses; the substance was therefore classified as a suspected reproductive hazard by EU. Reference: EPA HPVIS (2010) and REACh CLP (2012).

· **Potential Health Effect(s):** Suspected of damaging fertility or the unborn child.

· **Specific Target Organ Toxicity - Single Exposure**

100-51-6 Benzyl alcohol	
STOT-Single	(No data available)
2855-13-2 Isophorone diamine	
STOT-Single	Target: N/A (rat) (conclusive but not sufficient for classification) Target organs: N/A Death, restlessness, thirst, rough fur, and tiredness were observed after a single oral administration with 1030 mg/kg bw of the substance. At necropsy, irritation of the intestinal mucosa and an increase in kidney weight were found in several animals. However, ECHA concluded it as conclusive but not sufficient for classification. Reference: ECHA (2011).
84852-15-3 4-Nonylphenol, branched	
STOT-Single	(No data available)

· **Potential Health Effect(s):**
No further relevant information; classification is not possible.
Some target organs may be exclusive due to low concentration of the hazardous component(s).

· **Specific Target Organ Toxicity - Repeated Exposure**

100-51-6 Benzyl alcohol	
STOT-Repeated	Target: None (Rats and Mice) (No systemic effect after oral or inhalative doses) -Target organs: None NOAEL (mouse; females and males; oral with up to 800 mg/kg bw/d) = 200 mg/kg bw/day NOAEL (rat; females and males; oral with up to 800 mg/kg bw/d) = 400 mg/kg bw/day The dose levels were outside of guidance value ranges. -Target organs: None NOAEC (rat; OECD TG 412; inhalation: aerosol; up to 1072 mg/m³; 6 hours/day for 4 weeks) = 1072 mg/m³: no adverse effect was found. Reference: ECHA (2011).
2855-13-2 Isophorone diamine	
STOT-Repeated	Target: N/A (rat) (conclusive but not sufficient for classification) NOAEL (OECD TG 408; oral; 13 weeks) = 59 mg/kg bw/day (males) and 62 mg/kg bw/day (females); at 160 mg/kg bw/day group, the substance produced histopathological alterations in kidneys. However, the dose level was outside of the guidance values. In another 14 day inhalative study, degeneration/necrosis in olfactory epithelium of the nose, trachea, larynx and lungs were observed after repeated inhalative administration with 0.2 mg/l/day of the substance. However, ECHA concluded it as conclusive but not sufficient for classification. Reference: OECD SIDS (2004) and ECHA (2012).
84852-15-3 4-Nonylphenol, branched	
STOT-Repeated	(rat) (Target: Kidney via Oral routes) NOAEL (oral, 90 days) = 50 mg/kg/day; there were renal tubular epithelial degeneration and renal tubular dilatation observed from the test animals. Reference: Huntsman (M)SDS (2009), EPA HPVIS (2010), IUCLID Dataset (2000) and GHS-J (2006).

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

· **Aspiration Hazard**

100-51-6 Benzyl alcohol	
Aspiration Hazard	(No data available)
2855-13-2 Isophorone diamine	
Aspiration Hazard	(No data available)
84852-15-3 4-Nonylphenol, branched	
Aspiration Hazard	(No data available)

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

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SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

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

SECTION 12. ECOLOGICAL INFORMATION

· ***Aquatic Environmental Toxicity***

100-51-6 Benzyl alcohol	
Algae Toxicity	*770 mg/l (Pseudokirchneriella subcapitata) (ErC50 (72 hrs); OECD TG 201)*
Crustacean Toxicity	*230 mg/l (Daphnia magna (water flea)) (EC50 (48 hrs); OECD TG 202)* *51 mg/L (NOEC (21 days); OECD TG 211)*
Fish Toxicity (static)	*460 mg/l (Pimephales promelas (fathead minnow)) (LC50 (96 hrs); EPA OPP 72-1)* *Based on the acute L(E)C50 (algae, crustacea and fish) > 100 mg/L, and chronic NOEC (crustacea) > 10 mg/L, the substance is not classified as an environmental hazard.* *Reference: ECHA (2011).*
2855-13-2 Isophorone diamine	
Algae Toxicity	*37 mg/l (Scenedesmus subspicatus) (EC50 (72 hrs; biomass);Directive 87/302/EEC Part C)*
Crustacean Toxicity	*23 mg/l (Daphnia magna (water flea)) (EC50 (48 hrs); OECD TG 202)* *324 mg/L (Chaetogammarus marinus) (EC50 (96 hrs))* *3 mg/L (daphnia magna) (NOEC (21 days); OECD TG 202)*
Fish Toxicity	*37 mg/l (Leuciscus idus (Ide or Orfe)) (EC50 (72 hrs; biomass);Directive 87/302/EEC Part C)* *Based on the non-rapid degradability and the acute LC50 < 100 mg/L, the substance is classified as a Chronic-3 environmental hazard.* *Reference: OECD SIDS (2004).*
84852-15-3 4-Nonylphenol, branched	
Algae Toxicity	*0.27 mg/l (Skeletonema costatum) (EC50 (96 hrs))* *(Pseudokirchneriella subcapitata)* *EC50 (96 hrs) = 0.41 mg/L* *(Scenedesmus subspicatus)* *EC50 (72 hrs; Algenwachstums-Hemmtest nach UBA) = 1.3 mg/L*
Crustacean Toxicity	*0.15 mg/l (Hyalella azteca) (EC50 (96 hrs))* *(Daphnia magna (water flea))* *EC50 (48 hrs) = 0.035 mg/L Royce SDS (2015)* *NOEC (21 days) = 0.024 mg/L* *(Mysidopsis bahia)* *EC50 (96 hrs) = 0.043 mg/L* *NOEC (28 days) = 3.9 µg/L*
Fish Toxicity	*0.14 mg/l (Pimephales promelas (fathead minnow))* *Royce SDS (2015)*

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

· ***Degradability and Stability***

100-51-6 Benzyl alcohol	
Biodegradation	*readily (Test species: n/a) (Biodegradation (OECD TG 301C) ≥ 94%)* *Biodegradation (Direct from TOC and HPLC; 4 weeks; Chemical conc.100 ppm) = 98% and 100%* *Biodegradation (Indirect from BOD; 4 weeks; Chemical conc.100 ppm) = 94%* *The substance is readily biodegradable.* *Reference: CHRIP (2011).*
Persistence	*(Test species: n/a) (The substance is not persistent)* *Reference: Canada DSL (2007).*
Photodegradation	*2.29E-11 cm^3/molecule-sec (OH radical) (at 25 ℃)* *Reference: ChemID Full Record (2011).*
Stability in water	*stable (Test species: n/a)* *Based on structure and organic chemistry rules, no hydrolysis will occur at pH ranges 4 - 11.* *Reference: OECD SIDS (2001).*
2855-13-2 Isophorone diamine	

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SECTION 12. ECOLOGICAL INFORMATION (CONTINUED)

Biodegradation	*non-biodegrad. (Test species: n/a) (Biodegradation (OECD TG 301C) < 3%)* *Biodegradation (Direct Analysis from TOC, HPLC; Conc. 100 mg/L; 4 weeks) = 3%, 3%* *Biodegradation (Indirect Analysis from BOD; Conc. 100 mg/L; 4 weeks) = 0%* *The substance is not biodegradable.* *Reference: CHRIP (2011).*
Persistence	*(Test species: n/a) (The substance is persistent)* *Reference: Canada DSL (2007).*
Photodegradation	*8.47E-11 cm^3/molecule-sec (OH radical) (Calculated by EPA AOP program)* *Half-life (5E5 OH/cm^3) = 4.5 hours* *Reference: OECD SIDS (2004).*
Stability in water	*stable (Test species: n/a) (OECD TG 111)* *Half-life (Ph=4, 7, and 9; at 25 ℃) > 1 year* *Reference: OECD SIDS (2004).*

84852-15-3 4-Nonylphenol, branched

Biodegradation	*non-biodegrad. (Test species: n/a) (Read-across from 25154-52-3; OECD TG 301C)* *Biodegradation (Conc. 100 ppm; 2 weeks; Direct analysis from GC, UV-vis, HPLC) = 8.9, 5.3, 2.5%* *Biodegradation (Conc. 100 ppm; 2 weeks; Indirect analysis from BOD) = 0%* *The substance is non-biodegradable.* *Reference: NITE CHRIP (2010).*
Persistence	*(Test species: n/a) (The substance is not persistent)* *Reference: Canada DSL (2007).*
Photodegradation	*9.99E-11 cm^3/molecule-sec (OH radical) (Half-life (5.0E5 OH/cm^3) = 0.3 day)* *Reference: IUCLID Dataset (2000).*
Stability in water	*(No data available)*

· ***Bioaccumulation and Distribution***

100-51-6 Benzyl alcohol

BCF	*(Test species: n/a) (The substance is not bioaccumulative)* *Reference: Canada DSL (2007).*
Koc	*(No data available)*
LogPow	*1.1 (Test species: n/a)* *Reference: ECHA (2011).*

2855-13-2 Isophorone diamine

BCF	*< 3.4 (Cyprinus carpio) (The substance is not or low bioaccumulative)* *BCF (Chemical concentration: 1 mg/L; 6 weeks) < 0.3* *BCF (Chemical concentration: 0.1 mg/L; 6 weeks) < 3.4* *The substance is not or low bioaccumulative in aquatic environment.* *Reference: CHRIP (2011).*
Koc	*340.4 L/kg (Test species: n/a)* *Reference: OECD SIDS (2004).*
LogPow	*0.99 (Test species: n/a) (OECD TG 107)* *Reference: OECD SIDS (2004).*

84852-15-3 4-Nonylphenol, branched

BCF	*90-330 (Cyprinus carpio) (The substance is not bioaccumulative)* *BCF = 250 - 330 (8 weeks; Concentration: 0.1 ppm)* *BCF = 90 - 220 (8 weeks; Concentration: 0.01 ppm)* *(Pimephales promelas (fathead minnow))* *BCF (20 days, chemical concentration = 21 µg/L) = 271* *Reference: NITE CHRIP (2010) and IUCLID Dataset (2000).*
Koc	*2580 - 25200 L/kg (Test species: n/a)* *Calculated from Log Koc = 0.989 LogPow - 0.346 and LogPow of 3.8 - 4.8.* *Reference: IUCLID Dataset (2000).*
LogPow	*3.8 - 4.8 (Test species: n/a)* *Reference: IUCLID Dataset (2000).*

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

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

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SECTION 13. DISPOSAL CONSIDERATIONS

· ***Hazardous Waste List***

· ***Description:***
The product has not been evaluated for its hazards when disposed as a waste by RCRA.
However, it is necessary to contain and dispose of the product as a hazardous waste based on the Hazard Identification in Section 2.

· ***Waste Treatment Recommendation:***
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
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.*

SECTION 14. TRANSPORT INFORMATION

· ***UN-Number***

· ***DOT, ADR, IMDG, IATA*** *UN3267*

· ***UN Proper Shipping Name***

· ***DOT, ADR, IMDG, IATA*** *Corrosive liquid, basic, organic, n.o.s. (Isophoronediamine, 4-Nonylphenol, branched)*

· ***Transport hazard class(es)***

· ***DOT***

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

· ***ADR***

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

· ***IMDG***

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

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SECTION 14. TRANSPORT INFORMATION (CONTINUED)

· **Label** 8
· **IATA**

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

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

· **Environmental Hazards:**
· **Marine Pollutant:** Yes
Symbol (fish and tree)

· **Special Precautions:** Warning: Corrosive substances
· **Danger Code (Kemler):** 80
· **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: 5 L
On cargo aircraft only: 60 L

· **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":** UN3267, Corrosive liquid, basic, organic, n.o.s. (Isophoronediamine, 4-Nonylphenol, branched), ENVIRONMENTALLY HAZARDOUS, 8, III

SECTION 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)**

2855-13-2	Isophorone diamine	A, C	10-20%
84852-15-3	4-Nonylphenol, branched	A	10-20%

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SECTION 15. REGULATORY INFORMATION (CONTINUED)

112-24-3	Triethylenetetramine	A	0-<0.1%

· **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)**

100-51-6	Benzyl alcohol
2855-13-2	Isophorone diamine
84852-15-3	4-Nonylphenol, branched
112-24-3	Triethylenetetramine

· **Proposition 65**

· **Chemicals Known to Cause Cancer**
None of the ingredients is listed.

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

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value Established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **International Regulation Lists**

· **Canadian Domestic Substance Listings:**

100-51-6	Benzyl alcohol
2855-13-2	Isophorone diamine
84852-15-3	4-Nonylphenol, branched
112-24-3	Triethylenetetramine

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

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

100-51-6	Benzyl alcohol
2855-13-2	Isophorone diamine

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

100-51-6	Benzyl alcohol
2855-13-2	Isophorone diamine
84852-15-3	4-Nonylphenol, branched

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SECTION 15. REGULATORY INFORMATION (CONTINUED)

112-24-3	Triethylenetetramine
·	**Japanese Existing and New Chemical Substance List:**
100-51-6	Benzyl alcohol
2855-13-2	Isophorone diamine
84852-15-3	4-Nonylphenol, branched
112-24-3	Triethylenetetramine
·	**Korean Existing Chemical Inventory:**
100-51-6	Benzyl alcohol
2855-13-2	Isophorone diamine
84852-15-3	4-Nonylphenol, branched
112-24-3	Triethylenetetramine
·	**European Pre-registered substances:**
100-51-6	Benzyl alcohol
2855-13-2	Isophorone diamine
84852-15-3	4-Nonylphenol, branched
112-24-3	Triethylenetetramine
·	**REACh - Substances of Very High Concern (SVHC) List:**
84852-15-3	4-Nonylphenol, branched 10-20%
·	**Restriction of Hazardous Substances Directive (RoHS) list:**
None of the ingredients is listed.	

SECTION 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.

· **Abbreviations and acronyms:**
ACGIH: American Conference of Governmental Industrial Hygienists
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road
CAS: Chemical Abstracts Service (division of the American Chemical Society)
CCR: Canadian Categorization Results
ChV: Chronic Value
DOT: US Department of Transportation
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
IARC: International Agency for Research on Cancer developed by United Nations World Health Organisation (WHO)
ICAO-TI: Technical Instructions (TI) by the International Civil Aviation Organization (ICAO)
IMDG: International Maritime Dangerous Goods; the principal international rules for International Carriage of Dangerous Goods by SEA under the Recommendations on the Transport of Dangerous Goods by United Nations (RTDG)
IUCLID: EU REACh International Uniform Chemical Information Database
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
NLM TOXNET: US National Library of Medicine Toxicology Data Network
OSHA: US Occupational Safety and Health Administration
P: Marine Pollutant
RCRA: Resource Conservation and Recovery Act (USA)
REACh: EU Registry, Evaluation and Authorisation of Chemicals
SARA: US Superfund Amendments and Reauthorization Act
TEEL: Temporary Emergency Exposure Limit developed by US Subcommittee on Consequence Assessment and Protective Actions (SCAPA) of US Department of Energy (DOE)

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SECTION 16. OTHER INFORMATION (CONTINUED)

TSCA: US Toxic Substance Control Act
ACToR: US EPA Aggregated Computational Toxicology Resource
BCF: Bioconcentration Factor
CCRIS: US NLM TOXNET Chemical Carcinogenesis Research Information System
CHRIP: Japan NITE Information on Biodegradation and Bioconcentration of the Existing Chemical Substances in the Chemical Risk Information Platform
DSL: Canada Domestic Substance List
ESIS: European Chemical Substances Information System
HSDB: US NLM TOXNET Hazardous Substances Databank
HSNO CCID: New Zealand Hazardous Substances and New Organisms Chemical Classification Information Database
IATA-DGR: Dangerous Goods Regulations (DGR) by the International Air Transport Association (IATA)
ICSC: International Chemical Safety Cards
Koc: Partition coefficient, soil Organic Carbon to water
NITE: National Institute of Technology and Evaluation, Japan
OECD: Organisation for Economic Co-operation and Development
RID: the Regulations Concerning the International Carriage of Dangerous Goods by Rail; published by the Central Office for International Carriage by Rail (OTIF)
RTDG: the Recommendations on the Transport of Dangerous Goods by United Nations (UN)
RTECS: US Registry of Toxic Effects of Chemical Substances
SIDS: OECD existing chemicals Screening Information Data Sets
SVHC: EU ECHA Substance of Very High Concern
TOXLINE: US NLM bibliographic database search system

SECTION 17. DISCLAIMER

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