

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: Ebecryl® 894 radiation curing resins
Synonyms: None
Chemical Family: Acrylated oligomer
Molecular Formula: Mixture
Molecular Weight: Mixture
Intended/Recommended Use: Radiation curable coating ingredient.

Allnex USA Inc., 9005 Westside Parkway, Alpharetta, Georgia 30009, USA

For Product and all Non-Emergency Information call your local Allnex contact point or contact us at
<http://www.allnex.com/contact>

EMERGENCY PHONE (24 hours/day) - For emergency only involving spill, leak, fire, exposure or accident call:

Asia Pacific:

Australia: +61 2801 44558 (Carechem 24)
China (PRC): +86(0)532-8388-9090 (NRCC)
Japan: +81 345 789 341 (Carechem 24)
New Zealand: +64 9929 1483 (Carechem 24)
All Others: +65 3158 1074 (Carechem 24)

Europe/Africa/Middle East (Carechem 24):

Europe, Middle East, Africa, Israel: +44 (0) 1235 239 670
Middle East, Africa (Arabic speaking countries): +44 (0) 1235 239 671

Latin America (Carechem 24):

Brazil: +55 113 711 9144
Mexico and all others: +52-555-004-8763

Canada and USA (Carechem 24 - Allnex29003-NCEC): +1-866-928-0789 (toll free) or +1-215-207-0061

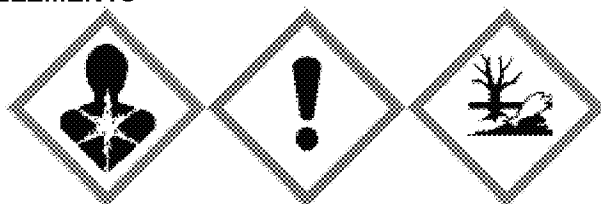
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2. HAZARDS IDENTIFICATION

GHS Classification

Reproductive Toxicant Category 2
Serious Eye Damage / Eye Irritation Hazard Category 2A
Skin Corrosion / Irritation Hazard Category 2
Skin Sensitizer Hazard Category 1B
Aquatic Environment Chronic Hazard Category 2

LABEL ELEMENTS



Signal Word

Warning

Hazard Statements

Suspected of damaging fertility or the unborn child

Causes skin irritation

Causes serious eye irritation

May cause an allergic skin reaction

Toxic to aquatic life with long lasting effects

Precautionary Statements

Obtain special instructions before use.

Wear protective gloves/protective clothing/eye protection/face protection.

Wash face, hands and any exposed skin thoroughly after handling.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Contaminated work clothing should not be allowed out of the workplace.

Avoid release to the environment.

IF exposed or concerned: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water.

Specific treatment (see supplemental first aid instructions on this label).

Take off all contaminated clothing and wash it before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

If eye irritation persists: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention.

Store locked up.

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

Hazards Not Otherwise Classified (HNOC), Other Hazards

Polymerization may occur from excessive heat, contamination or exposure to direct sunlight.

3. COMPOSITION/INFORMATION ON INGREDIENTS**HAZARDOUS INGREDIENTS**

Component / CAS No.	%	GHS Classification	Carcinogen
Triethylene glycol diacrylate 1680-21-3	1 - 2	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) Skin Sens. 1B (H317)	-
Toluene 108-88-3	0.1 - 0.3	Flam. Liq. 2 (H225) Repr. 2 (H361d) STOT RE 2 (H373) STOT SE 3 (H336) Skin Irrit. 2 (H315) Eye Irrit. 2B (H320) Asp. Tox. 1 (H304)	-
Polyol acrylate -	20 - 30	Skin Irrit. 3 (H316) Eye Irrit. 2A (H319) Skin Sens. 1B (H317)	-
Polyol acrylate -	5 - 15	Skin Irrit. 3 (H316) Eye Irrit. 2A (H319) Skin Sens. 1B (H317)	-
Polyester acrylate -	10 - 20	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319)	-

Acrylated resin -	20 - 30	Eye Irrit. 2A (H319) Aquatic Chronic 2 (H411)	-
Acrylated resin -	10 - 20	Eye Irrit. 2A (H319)	-

The specific chemical identity and/or exact percentage of composition for one or more ingredients has been withheld as a trade secret.

Additional GHS classification or other information may be included in this section but has not been adopted by OSHA. See Section 16 for full text of H phrases.

4. FIRST AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

Eye Contact:

Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.

Skin Contact:

Wash immediately with plenty of water and soap. Remove contaminated clothing and shoes without delay. Obtain medical attention. Do not reuse contaminated clothing without laundering. Destroy or thoroughly clean shoes before reuse.

Ingestion:

If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Inhalation:

Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

None known

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

General Information:

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Use water spray or fog, carbon dioxide or dry chemical.

Extinguishing Media to Avoid:

high pressure water jet.

Protective Equipment:

Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

Special Hazards:

Keep containers cool by spraying with water if exposed to fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

Methods For Cleaning Up:

Cover spills with some inert absorbent material; sweep up and place in a waste disposal container. Flush spill area with water.

References to other sections:

See Sections 8 and 13 for additional information.

7. HANDLING AND STORAGE

HANDLING

Precautions: Avoid release to the environment. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves and eye/face protection.

Special Handling Statements: None

STORAGE

Containers which are opened must be carefully resealed and kept upright to prevent leakage. Prevent unauthorised access. Storage in stainless steel, amber glass, amber polyethylene or baked phenolic lined container. Keep containers tightly closed. Keep away from heat.

Storage Temperature: Store at 4 - 40 °C 39.2 - 104 °F

Reason: Safety.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure when spraying or curing at elevated temperatures.

Respiratory Protection:

For operations where inhalation exposure can occur use an approved respirator. Recommendations are listed below. Other protective respiratory equipment may be used based on user's own risk assessment.

Recommended respirators include those certified by NIOSH.

Recommended:

Full Face Mask with organic vapor cartridge, Type A filter (BP >65°C)

Eye Protection:

Wear eye/face protection such as chemical splash proof goggles or face shield. Eyewash equipment and safety shower should be provided in areas of potential exposure.

Skin Protection:

Avoid skin contact. Wear impermeable gloves and suitable protective clothing. Barrier creams may be used in conjunction with the gloves to provide additional skin protection.

Hand Protection:

Wear protective gloves. Recommendations are listed below. Other protective materials may be used based on user's own risk assessment. Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred. Replace gloves immediately when torn or any change in appearance (dimension, color, flexibility etc.) is noticed.

Gloves for repeated or prolonged exposure:

Nitrile rubber (NBR), thickness: > 0.56 mm, break through time: up to 480 min

Gloves for short term exposure:

Nitrile rubber (NBR), thickness: 0.1 mm, break through time: up to 30 min

The chemical resistance depends on the type of product and amount of product on the glove. Therefore gloves need to be changed when in contact with chemicals.

Not suitable gloves:

Latex gloves

Due to many conditions (e.g. temperature, abrasion) the practical usage of a chemical protective glove in practice may be much shorter than the permeation time determined through testing.

Additional Advice:

Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

Exposure Limit(s)**108-88-3 Toluene**

OSHA (PEL):	200 ppm (TWA) 300 ppm (Ceiling)
ACGIH (TLV):	20 ppm (TWA)
Other Value:	Not established

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	blue
Appearance:	liquid
Odor:	acrylate
Boiling Point:	Not available
Melting Point:	Not available
Vapor Pressure:	Not available
Specific Gravity/Density:	1.10 - 1.13 g/cm ³
Vapor Density:	Not available
Percent Volatile (% by wt.):	Negligible
pH:	Not applicable
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	Not available
Solubility In Water:	immiscible
Volatile Organic Content:	minimal
Flash Point:	> 110 °C 230 °F Setflash Closed Cup
Flammable Limits (% By Vol):	Not available
Autoignition Temperature:	Not available
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Insoluble
Odor Threshold:	Not available
Viscosity (Kinematic):	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid:	Avoid direct exposure to sunlight. Avoid temperatures above 60°C (140°F). Avoid friction with temperature increase as result. Avoid exposure to strong UV sources. Loss of dissolved air. Loss of polymerization inhibitor.
Polymerization:	May occur
Conditions To Avoid:	Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers. Hazardous polymerization can occur when exposed to direct sunlight. Hazardous exothermic polymerization can occur when heated. Avoid contact with bases or amines. Avoid contact with strong oxidizing agents. Avoid contact with free radical initiators.
Materials To Avoid:	Avoid contact with peroxides. Copper, copper alloys, carbon steel, iron and rust. Avoid free radical producing initiators. Contact with alkalis. They give an exothermic reaction with the product. Unintentional contact with them should be avoided. Avoid contact with active metals. Hazardous polymerization may occur.
Hazardous Decomposition Products:	oxides of carbon smoke hydrocarbons soot

11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICITY INFORMATION

Likely Routes of Exposure: Skin, Eyes, Oral.

ACUTE TOXICITY DATA

oral	rat	Acute LD50	> 2000 mg/kg
dermal	rabbit	Acute LD50	> 2000 mg/kg
inhalation	rat	Acute LC50 4 hr	> 5 mg/l (Dust/Mist)

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	dermal	Irritating
Acute Irritation	eye	Irritating

ALLERGIC SENSITIZATION

Sensitization	dermal	Sensitizing
Sensitization	inhalation	No data

GENOTOXICITY

Assays for Gene Mutations

Ames Salmonella Assay	No data
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OTHER INFORMATION

The product toxicity information above has been estimated.

The toxicological properties of this material have not been fully determined.

Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms such as redness, blistering, dermatitis, etc.

The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

HAZARDOUS INGREDIENT TOXICITY DATA

The toxicological properties of 2,2'-(ethylenedioxy) diethyl diacrylate (CAS 1680-21-3) have not been fully investigated. Irritating to eyes and skin. May cause sensitisation by skin contact.

Toluene has acute oral (rat) and dermal (rabbit) LD50 values of 4,328 mg/kg and 12124 mg/kg, respectively. The acute 4-hour inhalation (rat, female) LC50 value is 5,060 ppm (19.07 mg/L). Toluene is a severe eye and moderate skin irritant. Inhalation overexposure to toluene vapor can cause headache, fatigue, nausea, and central nervous system depression. Sustained inhalation of high levels of toluene has been shown to cause reversible kidney and liver damage. Subchronic inhalation of toluene vapors have caused permanent hearing loss, decreased learning capabilities and damage to the eyes in laboratory animal tests. Deliberate inhalation of high concentrations of toluene vapor by pregnant women has been shown to adversely affect the fetus. These fetotoxic effects include intrauterine growth retardation and delayed postnatal development. The fetotoxic effects of toluene seen in laboratory animals are similar to those seen in humans. Ingestion of toluene in laboratory animals caused mild gastritis and harmful effects on the respiratory system, kidneys, liver and heart. Ingestion in laboratory animals also caused harmful effects on the central nervous system and death. It has also been reported that subchronic ingestion of toluene caused brain and bladder damage in laboratory animals. Due to synergistic effects, the toxicity of toluene may be enhanced by exposure to n-hexane, benzene, xylene, acetylsalicylic acid and chlorinated hydrocarbons. The literature reports that toluene is an aspiration hazard, that acute oral exposure resulted in reversible visual dysfunction, and that chronic exposure has caused altered immune function in animals. Toluene is a chemical known to the State of California to cause reproductive toxicity.

Polyol acrylate has an acute dermal (rabbit) LD50 value of > 10000 mg/kg. Direct contact with this material may cause moderate eye irritation. Results from in vitro mutagenicity tests are mixed. This substance was not mutagenic in the Ames Salmonella Assay, however, it was mutagenic in various cell culture systems (i.e. Mouse lymphoma Assay). An in vivo mouse micronucleus study, designed to assess the clastogenic potential in whole animals, was negative for mutagenicity. Therefore, based on a weight-of-the-evidence approach, this material is considered non-mutagenic.

Polyol acrylate has an acute oral (rat) and dermal toxicity (rabbit) LD50 values of >2000 mg/kg and > 2000 mg/kg, respectively. Eye contact can cause serious corneal opacity, considerable redness and oedema. Skin irritation - no dermal reactions (OECD-PII= 0). This material may cause dermal sensitization. Mutagenicity: negative in the Ames test, positive in the mouse lymphoma gene mutation test. In vitro mammalian chromosome aberration test: negative.

The toxicological properties of polyester acrylate have not been fully investigated. Direct contact with this material may cause moderate eye and skin irritation.

Acrylated resin has an acute oral (rat) LD50 value of > 5000 mg/kg. The acute dermal (rat) LD50 is > 2000 mg/kg (based on a similar substance). This material was non-irritating to skin but was found to be irritating to eyes. No skin sensitization potential was observed up to the highest tested dose of 2.5% in a mouse local lymph node assay. No fertility or developmental effects were seen in reproductive toxicity studies (based on a similar substance).

Acrylated resin has an acute oral (rat) and dermal toxicity (rabbit) LD50 values of >2000 mg/kg and > 2000 mg/kg, respectively. Eye contact can cause serious corneal opacity, considerable redness and oedema. Skin irritation - no dermal reactions (OECD-PII= 0). Mutagenicity: negative in the Ames test, positive in the mouse lymphoma gene mutation test. In vitro mammalian chromosome aberration test: negative.

California Proposition 65 Warning (applicable in California only) - This product contains (a) chemical(s) known to the State of California to cause birth defects or other reproductive harm.

12. ECOLOGICAL INFORMATION

TOXICITY, PERSISTENCE AND DEGRADABILITY, BIOACCUMULATIVE POTENTIAL, MOBILITY IN SOIL, OTHER ADVERSE EFFECTS

Overall Environmental Toxicity: Toxic to aquatic life with long lasting effects.

The ecological assessment for this material is based on an evaluation of its components.

RESULTS OF PBT AND vPvB ASSESSMENT

Not determined

HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS No.	Toxicity to Algae	Toxicity to Fish	Toxicity to Water Flea
Triethylene glycol diacrylate 1680-21-3	Not available	Not available	Not available
Toluene 108-88-3	EC50 = 12.5 mg/L - Pseudokirchneriella subcapitata (72h) EC50 > 433 mg/L - Pseudokirchneriella subcapitata (96h)	LC50 11.0 - 15.0 mg/L - Lepomis macrochirus (96h) LC50 14.1 - 17.16 mg/L - Oncorhynchus mykiss (96h) LC50 15.22 - 19.05 mg/L - Pimephales promelas (96h) LC50 5.89 - 7.81 mg/L - Oncorhynchus mykiss (96h) LC50 50.87 - 70.34 mg/L - Poecilia reticulata (96h) LC50 = 12.6 mg/L - Pimephales promelas (96h) LC50 = 28.2 mg/L - Poecilia reticulata (96h) LC50 = 5.8 mg/L - Oncorhynchus mykiss (96h) LC50 = 54 mg/L - Oryzias latipes (96h)	EC50 5.46 - 9.83 mg/L - Daphnia magna (48h) EC50 = 11.5 mg/L - Daphnia magna (48h)
Polyol acrylate -	Not available	Not available	Not available
Polyol acrylate -	Not available	Not available	Not available
Polyester acrylate -	Not available	Not available	Not available
Acrylated resin -	ErC50 = >12 mg/L - Pseudokirchneriella subcapitata (72h)	LC50 = 1.2 mg/l - Carp (Cyprinus carpio) (96h)	EC50 = >10 mg/l - Daphnia magna (48h)
Acrylated resin -	Not available	Not available	Not available

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 3 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Dangerous Goods? X

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.

Hazard Class: 9

Packing Group: III

UN/ID Number: UN3082

Transport Label Required: Miscellaneous
 Marine Pollutant

Marine Pollutant

Technical Name (N.O.S.): Acrylated resin

Comments: Marine Pollutants - DOT requirements specific to Marine Pollutants do not apply to non-bulk packagings transported by motor vehicles, rail cars or aircraft.

TRANSPORT CANADA

Dangerous Goods? X

Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.

Hazard Class: 9

Packing Group: III

UN Number: UN3082

Transport Label Required: Miscellaneous
 Marine Pollutant

Marine Pollutant

Technical Name (N.O.S.): Acrylated resin

ICAO / IATA

Dangerous Goods? X

UN Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.

Transport Hazard Class: 9

Packing Group: III

UN Number: UN3082
Transport Label Required: Miscellaneous
Technical Name (N.O.S.): Acrylated resin

IMO

Dangerous Goods? X

UN Proper Shipping Name: Environmentally hazardous substance, liquid, n.o.s.

Transport Hazard Class: 9

UN Number: UN3082

Packing Group: III

Transport Label Required: Miscellaneous
Marine Pollutant

Marine Pollutant

Technical Name (N.O.S.): Acrylated resin

15. REGULATORY INFORMATION

Inventory Information

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: One or more components of this product are NOT included on the Canadian Domestic Substances List (DSL).

European Economic Area (including EU): When purchased from an Allnex legal entity based in the EEA (EU or Norway), this product is compliant with the registration of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, pre-registered and/or registered.

Australia: One or more components of this product have NOT yet been included in the Australian Inventory of Chemical Substances (AICS) or assessed by NICNAS.

China: One or more components of this product are NOT included on the Chinese (IECSC) inventory. Allnex has obtained the required notification approvals from the Ministry of Environmental Protection (MEP) as per the "Environmental Administrative Measures for New Chemical Substance" for the component(s) not listed in the Chinese Inventory (IECSC). The product can be imported/manufactured in China ONLY under specific conditions.

Japan: All components of this product are included on the Japanese (ENCS and ISHL) inventories or are not required to be listed on the Japanese inventories.

Korea: One or more components of this product are NOT included on the Korean (ECL) inventory.

Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

This product does not contain any components regulated under these sections of the EPA

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute
 - Chronic
-

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

Fire: 1 - Materials that must be preheated before ignition can occur.

Instability: 1 - Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures.

Reasons For Issue: Revised Section 9

Date Prepared: 03/18/2014

Date of last significant revision: 02/27/2014

Component Hazard Phrases

Triethylene glycol diacrylate

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

Toluene

H225 - Highly flammable liquid and vapor.

H304 - May be fatal if swallowed and enters airways.

H315 - Causes skin irritation.

H320 - Causes eye irritation.

H336 - May cause drowsiness or dizziness.

H373 - May cause damage to organs through prolonged or repeated exposure.

H361d - Suspected of damaging the unborn child.

Polyol acrylate

H316 - Causes mild skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

Polyol acrylate

H316 - Causes mild skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

Polyester acrylate

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

Acrylated resin

H319 - Causes serious eye irritation.

H411 - Toxic to aquatic life with long lasting effects.

Acrylated resin

H319 - Causes serious eye irritation.

Prepared By: Product Stewardship & Regulatory Affairs Department, <http://www.allnex.com/contact>

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