SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: EBECRYL® 812 radiation curing resins

Synonyms: None

Product Description: Epoxy acrylate oligomer in acrylate monomer

Molecular Formula: Mixture

Molecular Weight: Mixture

Intended/Recommended Use: Radiation curable coating ingredient. Coatings & Inks.

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

® indicates trademark registered in the U.S. Outside the U.S., mark may be registered, pending or a trademark. Mark is or may be used under license.

2. HAZARDS IDENTIFICATION

GHS Classification
Skin Sensitizer Hazard Category 1B
Serious Eye Damage / Eye Irritation Hazard Category 2A
Aquatic Environment Chronic Hazard Category 2

LABEL ELEMENTS
**Signal Word**
Warning

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

**Precautionary Statements**
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
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 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 ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Specific treatment (see supplemental first aid instructions on this label). Wash contaminated clothing before reuse.
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**

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>%</th>
<th>GHS Classification</th>
<th>Carcinogen</th>
</tr>
</thead>
</table>
| hydroxypropyl acrylate, (mix) 25584-83-2 | 0.5 - 1.5 | Acute Tox. 3 (H301)  
Acute Tox. 3 (H311)  
Acute Tox. 3 (H331)  
Skin Corr. 1B (H314)  
Eye Dam. 1 (H318)  
Skin Sens. 1B (H317) | -         |
| Acrylated resin      | 25 - 45 | Skin Sens. 1B (H317)                | -          |
| Acrylated resin      | 55 - 75 | Eye Irrit. 2A (H319)  
Aquatic Chronic 2 (H411) | -          |

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 advice if there are persistent symptoms.
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 NEEDS

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**
Store in a cool, dry, well ventilated place and keep container tightly closed. Keep away from heat sources and direct sunlight.

**Storage Temperature:** Store at 4 - 40 °C
**Reason:** Quality.

---

8. **EXPOSURE CONTROLS/PERSOAL 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.
9. PHYSICAL AND CHEMICAL PROPERTIES

Color: clear colorless to yellowish or reddish
Appearance: liquid
Odor: acrylate
Boiling Point: > 100 °C
Melting Point: Not available
Vapor Pressure: 0.013 hPa @ 20 °C
Specific Gravity/Density: 1.14 g/cm³
Vapor Density: Not available
Percent Volatile (% by wt.): < 0.5%
ph: Not available
Saturation In Air (% By Vol.): Not available
Evaporation Rate: Not available
Solubility In Water: slightly soluble
Volatile Organic Content: Not available
Flash Point: Not applicable (polymerized at 202 °C)
Flammable Limits (% By Vol.): Not applicable
Autoignition Temperature: Not available
Decomposition Temperature: Not available
Partition coefficient (n-octanol/water): Not available
Odor Threshold: Not available
Viscosity (Kinematic): Not available

10. STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: Avoid direct exposure to sunlight. Avoid temperatures higher than 60°C. Avoid friction with temperature increase as result. Avoid exposure to strong UV sources. Loss of dissolved air. Loss of polymerization inhibitor. Avoid direct contact with heat sources. Protect from direct sunlight.

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. Material should not be heated above 100°C due to polymerization.

Materials To Avoid: Avoid contact with peroxides. Avoid free radical producing initiators. Avoid contact with reactive metals. Contact with alkalis. They give an exothermic reaction with the product. Unintentional contact with them should be avoided.

Hazardous Decomposition Products: Carbon dioxide
Carbon monoxide (CO)
11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICITY INFORMATION

Likely Routes of Exposure: Skin, Eyes, Oral.

ACUTE TOXICITY DATA

<table>
<thead>
<tr>
<th>Route</th>
<th>Species</th>
<th>LD50</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>rat</td>
<td>Acute</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>dermal</td>
<td>rabbit</td>
<td>Acute</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>inhalation</td>
<td>rat</td>
<td>Acute</td>
<td>&gt; 5 mg/l (Dust/Mist)</td>
</tr>
</tbody>
</table>

LOCAL EFFECTS ON SKIN AND EYE

- Acute Irritation: eye - Irritating
- Acute Irritation: dermal - Not irritating

ALLERGIC SENSITIZATION

- Sensitization: skin - Sensitizing
- Sensitization: respiratory - No data

GENOTOXICITY

- Assays for Gene Mutations: Ames Salmonella Assay - No data

OTHER INFORMATION

The toxicity data above are the results from Allnex sponsored studies or from the available public literature. 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

Hydroxypropyl acrylate (mixture), CAS# 25584-83-2, has acute oral (rat) and acute dermal (rabbit) LD50 values of 1190 mg/kg and 120 mg/kg, respectively. Direct contact with this substance may cause serious irreversible damage (corrosive) to eyes and skin. Prolonged or repeated contact may cause skin sensitization or dermatitis. Genetic effects were observed in standard tests with animal cells.

Acrylated resin has acute oral (rat) LD50 and acute dermal (rat) LD50 values of > 2000 mg/kg. This substance is not expected to cause eye or skin irritation but was found to be a skin sensitizer in the mouse local lymph node assay. Based on the results of in vitro and in vivo testing of a similar substance, it is not considered to be genotoxic. No fertility or developmental effects were seen in reproductive toxicity studies (based on a similar substance).

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).

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 properties of this material have not been fully investigated.

**RESULTS OF PBT AND vPvB ASSESSMENT**
This product does not meet the criteria for PBT (Persistent, Bioaccumulative and Toxic substance) or for vPvB (Very Persistent and Very Bioaccumulative).

**HAZARDOUS INGREDIENT TOXICITY DATA**

<table>
<thead>
<tr>
<th>Component / CAS No.</th>
<th>Toxicity to Algae</th>
<th>Toxicity to Fish</th>
<th>Toxicity to Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydroxypropyl acrylate, (mix) 25584-83-2</td>
<td>Not available</td>
<td>LC50 = 1.9 mg/L - Pimephales promelas (96h)</td>
<td>Not available</td>
</tr>
<tr>
<td>Acrylated resin</td>
<td>EC50 = &gt;100 mg/L - Pseudokirchneriella subcapitata (72h)</td>
<td>LC50 = &gt;100 mg/l - Carp (Cyprinus carpio) (96h)</td>
<td>EC50 = &gt;100 mg/l - Daphnia magna (48h)</td>
</tr>
<tr>
<td>Acrylated resin</td>
<td>ErC50 = &gt;12 mg/L - Pseudokirchneriella subcapitata (72h)</td>
<td>LC50 = 1.2 mg/l - Carp (Cyprinus carpio) (96h)</td>
<td>EC50 = &gt;10 mg/l - Daphnia magna (48h)</td>
</tr>
</tbody>
</table>

**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
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
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
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**: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the 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**: All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on AICS.

**China**: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

**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**: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

**Philippines**: One or more components of this product are NOT included on the Philippine (PICCS) 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
- Reactivity

## 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 2
- Revised Section 3
- Revised Section 11
- Revised Section 12
- Revised Section 14
- Revised Section 15

**Date Prepared**: 09/26/2014

**Date of last significant revision**: 09/26/2014

**Component Hazard Phrases**

- **hydroxypropyl acrylate, (mix)**
  - H301 - Toxic if swallowed.
  - H311 - Toxic in contact with skin.
  - H314 - Causes severe skin burns and eye damage.
  - H317 - May cause an allergic skin reaction.
  - H331 - Toxic if inhaled.
Acrylated resin
  H317 - May cause an allergic skin reaction.
Acrylated resin
  H319 - Causes serious eye irritation.
  H411 - Toxic to aquatic life with long lasting effects.

This information is given without any warranty or representation. We do not assume any legal responsibility for same, nor do we give permission, inducement, or recommendation to practice any patented invention without a license. It is offered solely for your consideration, investigation, and verification. Before using any product, read its label.