**SDS:** 0057886
**Date Prepared:** 01/08/2018

# SAFETY DATA SHEET

## 1. IDENTIFICATION

| | |
|---|---|
| **Product Name:** | **EBECRYL® 4381 radiation curing resins** |
| **Synonyms:** | None |
| **Product Description:** | Unsaturated polyester resin |
| **Molecular Weight:** | Mixture |
| **Intended/Recommended Use:** | Binder |

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)
India: 000 800 100 7479 (toll free) or +65 3158 1198 (Carechem 24)
Korea: +82 2 3479 8401 (Carechem 24)
Malaysia: +60 3 6207 4347 (Carechem 24)
Philippines: +63 2 231 2149 (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:**
Brazil: +55-800-707-7022 (toll free) or +55-11-98149-0850 (Suatrans 24)
Chile: +56 2 2582 9336 (Carechem 24)
Mexico and all others: +52-555-004-8763 (Carechem 24)
**Canada and USA (Carechem 24 - Allnex29003-NCEC):** +1-866-928-0789 (toll free) or +1-215-207-0061



## 2. HAZARDS IDENTIFICATION

**GHS Classification**
Serious Eye Damage / Eye Irritation Hazard Category 1
Skin Corrosion / Irritation Hazard Category 2
Skin Sensitizer Hazard Category 1B

**LABEL ELEMENTS**

**Signal Word**
DANGER

**Hazard Statements**
Causes skin irritation
Causes serious eye damage
May cause an allergic skin reaction

**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.
IF ON SKIN: Wash with plenty of soap and water.
Specific treatment (see supplemental first aid instructions on this label).
Take off 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.
Immediately call a POISON CENTER or doctor/physician.
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.

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**HAZARDOUS INGREDIENTS**

| Component / CAS No. | % | GHS Classification | Carcinogen |
|---|---|---|---|
| Dipropylene glycol diacrylate<br>57472-68-1 | ~ 30 | Skin Irrit. 2 (H315)<br>Eye Dam. 1 (H318)<br>Skin Sens. 1B (H317) | - |

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.

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## 4. FIRST AID MEASURES

**First-aid Measures**

**Inhalation:**
Remove to fresh air. If breathing is difficult, give oxygen. Apply artificial respiration if patient is not breathing. 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.

**Eye Contact:**
Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.

**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.

**Most Important Symptoms and Effects, Acute and Delayed**
None known

**Immediate Medical Attention and Special Treatment**
In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

**Notes To Physician:**
No specific measures have been identified.

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## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:**
Use water spray or fog, carbon dioxide or dry chemical.

**Unsuitable Extinguishing Media:**
high pressure water jet.

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

**Special Hazards:**
Keep containers cool by spraying with water if exposed to fire.

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## 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.

**Environmental Precautions:**
None known

**References to other sections:**
See Sections 7, 8 and 13 for additional information.

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## 7. HANDLING AND STORAGE

**HANDLING**
**Precautions:** 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:** Provide good ventilation of working area (local exhaust ventilation if necessary). During processing and handling of the product, comply with the indicative occupational exposure limit values. Avoid excessive heat, contamination or exposure to direct sunlight to prevent polymerization.

**STORAGE**
Store in a cool, dry, well ventilated place and keep container tightly closed. Keep away from heat sources and direct sunlight. Keep away from sources of ignition - refrain from smoking.

**Storage Temperature:** Store at 4 - 40 °C 39.2 - 104 °F
**Reason:** Quality.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Measures:**
Utilize a closed system process where feasible. 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:**
Prevent eye and skin contact. Provide eye wash fountain and safety shower in close proximity to points of potential exposure. Wear eye/face protection such as chemical splash proof goggles or face shield.

**Skin Protection:**
Prevent contamination of skin or clothing when removing protective equipment. 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 short term exposure/splash protection - non exhaustive list:
Laminated multilayer gloves, break through time: > 60 min
Nitrile rubber (NBR), thickness: > 0.56 mm, break through time: < 60 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 - non exhaustive list:
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. Use PE gloves as under gloves for difficult situations like for instance: high exposure, unknown composition or unknown properties of the chemicals.

**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)

No values have been established.

### Biological Exposure Limit(s)

No values have been established.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Color:** | yellowish |
| **Appearance:** | liquid |
| **Odor:** | ester-like |
| **Boiling Point:** | ~ 94 °C 201.2 °F @ 1.013 hPa DIN 53171 |
| **Melting Point:** | Not available |
| **Vapor Pressure:** | ca. 3 hPa @ 20 °C EG A4 |
| **Specific Gravity/Density:** | ~ 1.15 g/cm³ DIN EN ISO 2811 @ 20 °C |
| **Vapor Density:** | Not available |
| **Percent Volatile (% by wt.):** | Not available |
| **pH:** | Not available |
| **Saturation In Air (% By Vol.):** | Not available |
| **Evaporation Rate:** | Not available |
| **Solubility In Water:** | @ 15 °C immiscible |
| **Volatile Organic Content:** | Not available |
| **Flash Point:** | > 100 °C 212 °F DIN EN ISO 2719 |
| **Flammable Limits (% By Vol):** | Not available |
| **Autoignition Temperature:** | Not available |
| **Decomposition Temperature:** | Not available |
| **Partition coefficient (n-octanol/water):** | Not available |
| **Odor Threshold:** | Not available |
| **Viscosity (Kinematic):** | Not applicable |
| **Viscosity (Dynamic):** | ~ 12000 mPa.s @ 23 °C DIN EN ISO 3219 |

## 10. STABILITY AND REACTIVITY

**Reactivity:** No information available

**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. Avoid direct contact with heat sources.

**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 Decomposition Products:** No hazardous decomposition products if stored and handled as prescribed.

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## 11. TOXICOLOGICAL INFORMATION

**Likely Routes of Exposure:** Skin, Eyes, Oral.

**Acute toxicity - oral:** Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
**Acute toxicity - dermal:** Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
**Acute toxicity - inhalation:** Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.

**Skin corrosion / irritation:** Causes skin irritation
**Serious eye damage / eye irritation:** Causes serious eye damage

**Respiratory sensitization:** Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
**Skin sensitization:** May cause an allergic skin reaction

**Carcinogenicity:** Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
**Germ cell mutagenicity:** Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.
**Reproductive toxicity:** Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.

**Specific target organ toxicity (STOT) - single exposure:** Not Classified. **-** Based on available data and/or professional judgment, the classification criteria are not met.
**Specific target organ toxicity (STOT) - repeated exposure:** Not Classified. **-** Based on available data and/or professional judgment, the classification criteria are not met.

**Aspiration hazard:** Not Classified **-** Based on available data and/or professional judgment, the classification criteria are not met.

## PRODUCT TOXICITY INFORMATION

**ACUTE TOXICITY DATA**

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

**LOCAL EFFECTS ON SKIN AND EYE**

| | | | |
|---|---|---|---|
| Acute Irritation | dermal | rabbit | Irritating |
| Acute Irritation | eye | rabbit | Causes serious damage |

**ALLERGIC SENSITIZATION**

| | | |
|---|---|---|
| Sensitization | Skin | Sensitizing |
| Sensitization | respiratory | No data |

**GENOTOXICITY**

**Assays for Gene Mutations**

| | |
|---|---|
| Ames Salmonella Assay | No data |

**OTHER INFORMATION**

The product toxicity information above has been estimated.
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**

Dipropylene glycol diacrylate has acute oral (rat) and dermal (rabbit) LD50 values of 4600 mg/kg and >2,000 mg/kg, respectively. Direct contact with this material may cause moderate skin irritation and may cause eye burns. Repeated or prolonged skin contact may cause skin sensitization.

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## 12. ECOLOGICAL INFORMATION

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

The ecological assessment for this material is based on an evaluation of its components.
This material is not classified as dangerous for the environment.

**RESULTS OF PBT AND vPvB ASSESSMENT**

Not determined

**HAZARDOUS INGREDIENT TOXICITY DATA**

| Component / CAS No. | Toxicity to Fish |
|---|---|
| Dipropylene glycol diacrylate (57472-68-1) | Not available |

| Component / CAS No. | Toxicity to Water Flea |
|---|---|
| Dipropylene glycol diacrylate (57472-68-1) | Not available |

| Component / CAS No. | Toxicity to Algae |
|---|---|
| Dipropylene glycol diacrylate (57472-68-1) | Not available |

| Component / CAS No. | Partition coefficient |
|---|---|
| Dipropylene glycol diacrylate (57472-68-1) | 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 SDS 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 SDS (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? Not applicable/Not regulated

**TRANSPORT CANADA**

Dangerous Goods? Not applicable/Not regulated

**ICAO / IATA**

Dangerous Goods? Not applicable/Not regulated

**IMO**

Dangerous Goods? Not applicable/Not regulated

**SPECIAL PRECAUTIONS FOR USER**
Protect against external heat sources above +40°C/104°F.

## 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). These components are included on the Canadian Non-Domestic Substances List (NDSL).

**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:** 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.

**Taiwan:** One or more components of this product are NOT included in the Taiwan chemical substance inventory (TCSI).

**Switzerland:** All components of this product are exempt from the new substance notification requirements for Switzerland (SR 813.11 art. 24-26).

**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 CATEGORY UNDER SECTIONS 311 AND 312 OF EPCRA**

**Physical Hazards**
Not applicable

**Health Hazards**
Skin Corrosion or Irritation
Respiratory or Skin Sensitization
Serious eye damage or eye irritation

## 16. OTHER INFORMATION

**NFPA Hazard Rating (National Fire Protection Association)**
Health: 3 - Materials that, under emergency conditions, can cause serious or permanent 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 15

**Date Prepared:** 01/08/2018
**Date of last significant revision:** 04/24/2014

Dipropylene glycol diacrylate
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.

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