



SDS: 0057887  
Date Prepared: 01/08/2018

## SAFETY DATA SHEET

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### 1. IDENTIFICATION

**Product Name:** EBECRYL® 4396 radiation curing resins  
**Synonyms:** None  
**Product Description:** Urethane acrylate resin containing isocyanate  
**Molecular Weight:** Not available  
**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:**

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Korea: +82 2 3479 8401 (Carechem 24)  
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### 2. HAZARDS IDENTIFICATION

**GHS Classification**

Skin Sensitizer Hazard Category 1B  
Aquatic Environment Acute Hazard Category 3  
Aquatic Environment Chronic Hazard Category 3

**LABEL ELEMENTS**



### Hazard Statements

May cause an allergic skin reaction  
 Harmful to aquatic life  
 Harmful to aquatic life with long lasting effects

### Precautionary Statements

Avoid breathing dust/fume/gas/mist/vapours/spray.  
 Contaminated work clothing should not be allowed out of the workplace.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 Avoid release to the environment.  
 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

Component / CAS No.	%	GHS Classification	Carcinogen
Isocyanatoacrylate -	~ 100	Skin Irrit. 3 (H316) Skin Sens. 1B (H317) Aquatic Acute 3 (H402) Aquatic Chronic 3 (H412)	-

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

### First-aid Measures

#### Inhalation:

Material is not expected to be harmful if inhaled. Remove to fresh air.

#### 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 advice if there are persistent symptoms.

**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**

Not applicable

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:**

full 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:**

Avoid release to the environment.

**References to other sections:**

See Sections 7, 8 and 13 for additional information.

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## 7. HANDLING AND STORAGE

**HANDLING**

**Precautions:** Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves. Avoid release to the environment.

**Special Handling Statements:** Individuals previously sensitized can experience allergic skin reaction with

symptoms of reddening, itching, swelling, and rash. Avoid excessive heat, contamination or exposure to direct sunlight to prevent polymerization.

## STORAGE

Observe label precautions. Prevent unauthorised access. Keep away from sources of ignition. Keep away from oxidizing agents, from alkaline and acid materials. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Protect from direct sunlight. This might cause uncontrollable polymerization of the product with generation of heat. Store at a temperature between 4 to 40 °C. Storage in stainless steel, amber glass, amber polyethylene or baked phenolic lined container.

**Storage Temperature:** Store at 4 - 40 °C

**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.

### 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.

### 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 - non exhaustive list:

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

#### Gloves for short term exposure/splash protection - non exhaustive list:

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 - 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.

### 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.

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## Exposure Limit(s)

No values have been established.

## Biological Exposure Limit(s)

No values have been established.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Color:</b>	yellowish
<b>Appearance:</b>	liquid
<b>Odor:</b>	odorless
<b>Boiling Point:</b>	> 300 °C 572 °F @ 1.013 hPa DIN 53171
<b>Melting Point:</b>	Not available
<b>Vapor Pressure:</b>	43 hPa @ 20 °C EG A4
<b>Specific Gravity/Density:</b>	~ 1.13 g/cm <sup>3</sup> DIN 51757 @ 20 °C
<b>Vapor Density:</b>	Not available
<b>Percent Volatile (% by wt.):</b>	Not available
<b>pH:</b>	Not available
<b>Saturation In Air (% By Vol.):</b>	Not available
<b>Evaporation Rate:</b>	Not available
<b>Solubility In Water:</b>	@ 15 °C immiscible
<b>Volatile Organic Content:</b>	Not available
<b>Flash Point:</b>	> 240 °C 464 °F DIN EN ISO 2719
<b>Flammable Limits (% By Vol):</b>	Not available
<b>Autoignition Temperature:</b>	Not available
<b>Decomposition Temperature:</b>	Not available
<b>Partition coefficient (n-octanol/water):</b>	Not available
<b>Odor Threshold:</b>	Not available
<b>Viscosity (Kinematic):</b>	Not applicable
<b>Viscosity (Dynamic):</b>	~ 12500 mPa.s @ 23 °C DIN EN ISO 3219

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## 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	No information available
<b>Stability:</b>	Stable
<b>Conditions To Avoid:</b>	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.
<b>Polymerization:</b>	May occur
<b>Conditions To Avoid:</b>	Avoid exposure to strong UV sources. Peroxides, free radical initiators, strong alkalies. Avoid contact with sunlight or ultraviolet light, and heat. Avoid contact with water, polyols and amines Reacts with water or strong acids generating carbon dioxide, building up pressure in closed containers.
<b>Materials To Avoid:</b>	Strong oxidizing agents, acids, and amines. Avoid acids, bases, strong amines, oxidizing agents and water.

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

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

**Serious eye damage / eye irritation:** Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

**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	> 5000 mg/kg
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	Slightly Irritating
Acute Irritation	eye	rabbit	Not irritating

### ALLERGIC SENSITIZATION

Sensitization	Skin	mouse	Sensitizing
Sensitization	respiratory	Not sensitizing	

## GENOTOXICITY

### Assays for Gene Mutations

Ames Salmonella Assay

Not mutagenic

## OTHER INFORMATION

All data based on similar product.

## HAZARDOUS INGREDIENT TOXICITY DATA

Based on toxicological studies of a similar substance: The isocyanatoacrylate has an acute oral LD50 (rat) of > 5000 mg/kg. Direct contact may cause slight skin irritation (rabbits). The substance is not irritating to the eyes (rabbits). Positive results were produced in skin sensitization studies (mouse). No pulmonary sensitization was observed in animal test. The substance was not mutagenic in the Ames test.

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## 12. ECOLOGICAL INFORMATION

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

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

All ecological information provided was conducted on a structurally similar product. Isocyanate reacts with water at the interface forming CO<sub>2</sub> and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by water soluble solvents. Previous experience shows that polyurea is inert and non-degradable.

## ECOTOXICITY

### ALGAE TEST RESULTS

**Test:** Growth Inhibition (OECD 201)

**Duration:** 72 hr

**Species:** Green Algae (*Scenedesmus subspicatus*)  
> 100 mg/l ErC50

### FISH TEST RESULTS

**Test:** Acute toxicity, freshwater (OECD 203)

**Duration:** 96 hr.

**Species:** Zebra Fish (*Brachydanio rerio*)  
> 100 mg/l LC50

### INVERTEBRATE TEST RESULTS

**Test:** Acute Immobilization (OECD 202)

**Duration:** 48 hr

**Species:** Water Flea (*Daphnia magna*)  
58 mg/l EC50

## PERSISTENCE AND DEGRADABILITY

**DEGRADATION****Test:** Biodegradability

This material is not readily biodegradable.

**RESULTS OF PBT AND vPvB ASSESSMENT**

Not determined

**HAZARDOUS INGREDIENT TOXICITY DATA**

Component / CAS No.	Toxicity to Fish
Isocyanatoacrylate (-)	LC50 > 100 mg/L - Zebra Fish ( <i>Brachydanio rerio</i> ) (96h)

Component / CAS No.	Toxicity to Water Flea
Isocyanatoacrylate (-)	EC50 58 mg/L - Water Flea ( <i>Daphnia magna</i> ) (48h)

Component / CAS No.	Toxicity to Algae
Isocyanatoacrylate (-)	ErC50 > 100 mg/L - Green Algae ( <i>Scenedesmus subspicatus</i> ) (72h)

Component / CAS No.	Partition coefficient
Isocyanatoacrylate (-)	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? 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

TECHNICAL NAME (N.O.S.): HEXAMETHYLENE DIISOCYANATE

<u>Component / CAS No.</u>	<u>Hazardous Substances/Reportable Quantity of Product (lbs)</u>
1,6-Hexamethylene diisocyanate	40160

Comments: Hazardous Substances/Reportable Quantities - DOT requirements specific to Hazardous Substances only apply if the quantity in one package equals or exceeds the product reportable quantity.

## TRANSPORT CANADA

Dangerous Goods? Not applicable/Not regulated

## ICAO / IATA

Dangerous Goods? Not applicable/Not regulated

## IMO

Dangerous Goods? Not applicable/Not regulated

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

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

**Taiwan:** All components of this product are included in the Taiwan chemical substance inventory or are not required to be listed on 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**

Respiratory or Skin Sensitization

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## **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 15

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

**Date of last significant revision:** 08/29/2017

### **Component - Hazard Statements**

Isocyanatoacrylate

H316 - Causes mild skin irritation.

H317 - May cause an allergic skin reaction.

H402 - Harmful to aquatic life.

H412 - Harmful to aquatic life with long lasting effects.

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

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