

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: EBECRYL® 140 radiation curing resins
Synonyms: None
Product Description: Ditrimehylolpropane tetraacrylate
Molecular Weight: Not available
Intended/Recommended Use: Radiation curable coating ingredient, Coatings & Inks
Uses advised against: None

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:

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

See Section 16 for Emergency phone numbers for other regions.

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2. HAZARDS IDENTIFICATION

GHS Classification

Serious Eye Damage / Eye Irritation Hazard Category 2A

Aquatic Environment Acute Hazard Category 2

Aquatic Environment Chronic Hazard Category 2

LABEL ELEMENTS



Hazard Statements

Causes serious eye irritation

Toxic to aquatic life

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 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.

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
di(trimethylolpropane)tetraacrylate (EU CAS 1393932-71-2) 94108-97-1	< 99.4	Eye Irrit. 2A (H319) Aquatic Acute 2 (H401) 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**First-aid Measures****Inhalation:**

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

Skin Contact:

Wash immediately with plenty of water and soap.

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

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.

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.

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:

Use appropriate containment to avoid environmental contamination. Avoid release to the environment.

References to other sections:

See Sections 7, 8 and 13 for additional information.

7. HANDLING AND STORAGE

HANDLING

Precautions: Avoid release to the environment. Wash hands thoroughly after handling. Wear eye/face protection.

Special Handling Statements: Provide good ventilation of working area (local exhaust ventilation if necessary). 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 39 - 104 °F

Reason: Quality.

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.

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.

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. 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:	colorless to pale yellow
Appearance:	liquid
Odor:	ester acrylate
Boiling Point:	> 100 °C 212 °F
Melting Point:	-56 °C -69 °F Glass transition point
Vapor Pressure:	< 1.33 hPa @ 20 °C
Specific Gravity/Density:	1.1 g/cm ³
Vapor Density:	Not available
Percent Volatile (% by wt.):	< 0.3 %
pH:	Not available
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	Not available
Solubility In Water:	Insoluble
Volatile Organic Content:	Not available
Flash Point:	Non Flammable (polymerized at 170 °C) Cleveland Open Cup

Flammable Limits (% By Vol):	Not applicable
Autoignition Temperature:	Not applicable
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	4.34 Not available
Odor Threshold:	Not available
Viscosity (Kinematic):	Not available
Viscosity (Dynamic):	800 - 1200 mPa.s @ 25 °C
Flammability:	Not available
Oxidizing Properties:	No

10. STABILITY AND REACTIVITY

Reactivity:	No information available
Stability:	Stable.
Conditions To Avoid:	Keep away from heat, spark and flame. Avoid exposure to excessive heat, UV light. Avoid exposure to 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.
Materials To Avoid:	Peroxides, free radical initiators, strong alkalies. reactive metals
Hazardous Decomposition Products:	Thermal polymerization can occur. smoke hydrocarbons soot

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: Causes serious eye irritation

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

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

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	rat	Acute LD50	> 2000 mg/kg (estimated)
Inhalation	rat	Acute LC50 4 hr	No data

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	dermal	rabbit	Not irritating
Acute Irritation	eye	rabbit	Irritating

ALLERGIC SENSITIZATION

Sensitization Local Lymph Node Assay	Skin	mouse	Not sensitizing
Sensitization	respiratory	No data	

SUBACUTE/SUBCHRONIC TOXICITY

oral (gavage)	rat	Combined 28-Day Repeated Dose Study With The Reproduction/Developmental Toxicity Screen 28 day	> 1000 mg/kg NOAEL
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GENOTOXICITY

Assays for Gene Mutations

Bacterial Reverse Mutation +/-S9	Salmonella Typhimurium Escherichia coli	Not mutagenic
In Vitro Mammalian Cell Gene Mutation Assay (HGPRT)	V79, genetic marker HPRT	Not mutagenic

Assays for Chromosomal Aberrations

Mouse Micronucleus Assay	mouse	Not clastogenic
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REPRODUCTIVE TOXICITY

oral (gavage) rat	Combined 28-Day Repeated Dose Study With The Reproduction/Developmental Toxicity Screen	Negative Not teratogenic
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OTHER INFORMATION

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

HAZARDOUS INGREDIENT TOXICITY DATA

Di(trimethylolpropane)tetraacrylate has an acute oral (rat) LD50 value of > 5000 mg/kg. The acute dermal (rat) LD50 is estimated at > 2000 mg/kg. 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. Based on a battery comprising both in vitro and in vivo studies, genotoxic effects are not expected. No adverse effects on specific organs, fertility or developmental of the foetus were observed in a repeated dose and reprotox screening toxicity study up to the highest dose (1000 mg/kg). Carcinogenicity was not investigated.



WARNING: Reproductive Harm – www.P65Warnings.ca.gov

12. ECOLOGICAL INFORMATION

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

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

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

ALGAE TEST RESULTS

Test: Growth Inhibition (OECD 201)

Duration: 72 hr

Species: Pseudokirchneriella subcapitata

> 12 mg/l

EC50

Measured Concentration

0.51 mg/l

EC10

Measured Concentration

FISH TEST RESULTS

Test: Acute toxicity, freshwater (OECD 203)

Duration: 96 hr. **Procedure:** Static.

Species: Carp (Cyprinus carpio)

1.2 mg/l

LC50

Measured Concentration

INVERTEBRATE TEST RESULTS

Test: Acute Immobilization (OECD 202)

Duration: 48 hr **Procedure:** Static

Species: Water Flea (Daphnia magna)

> 10 mg/l

EC50

Measured Concentration

BACTERIA TEST RESULTS

Test: Respiration Inhibition (OECD 209)

Duration: 3 hr

Species: Activated Sludge - Bacterial

> 1000 mg/l

EC50

DEGRADATION

Test: CO2 Evolution: Modified Sturm (OECD 301B)

Duration: 28 day **Procedure:** Ready biodegradability

4 - 14 %

Test: Closed Bottle (OECD 301D)

Duration: 60 day **Procedure:** Ready biodegradability
46 %

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

Component / CAS No.	Toxicity to Fish
di(trimethylolpropane)tetraacrylate (EU CAS 1393932-71-2) (94108-97-1)	LC50 = 1.2 mg/l - Carp (Cyprinus carpio) (96h)

Component / CAS No.	Toxicity to Water Flea
di(trimethylolpropane)tetraacrylate (EU CAS 1393932-71-2) (94108-97-1)	EC50 = >10 mg/l - Daphnia magna (48h)

Component / CAS No.	Toxicity to Algae
di(trimethylolpropane)tetraacrylate (EU CAS 1393932-71-2) (94108-97-1)	ErC50 = >12 mg/L - Pseudokirchneriella subcapitata (72h) ErC10 = 0.51 mg/L - Pseudokirchneriella subcapitata (72h)

Component / CAS No.	Partition coefficient
di(trimethylolpropane)tetraacrylate (EU CAS 1393932-71-2) (94108-97-1)	Log Kow = 4.14

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
Marine Pollutant
Marine Pollutant
TECHNICAL NAME (N.O.S.): DITRIMETHYLOLPROPANE TETRAACRYLATE

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.): DITRIMETHYLOLPROPANE TETRAACRYLATE

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.): DITRIMETHYLOLPROPANE TETRAACRYLATE

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.): DITRIMETHYLOLPROPANE TETRAACRYLATE

SPECIAL PRECAUTIONS FOR USER

Protect against external heat sources higher than +50°C/122°F.

15. REGULATORY INFORMATION

Inventory Information

United States (USA): All components of this product are designated as "Active" on the TSCA Inventory or are not required to be listed.

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 and shipped 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 and/or registered.

Australia: All components of this product are included in the Australian Inventory of Industrial Chemicals (AIIC) or are not required to be listed on AIIC.

New Zealand: This product is approved or exempt under the Hazardous Substances and New Organisms (HSNO) Act.

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) inventory or are not required to be listed on the Japanese inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory. When purchased from Allnex Korea or Chemart distributor this product is compliant with the ARECs (the Act on the Registration and Evaluation, etc. of Chemical Substances). All its components are either excluded, exempt, pre-notified and/or registered. When purchased from another allnex entity, please contact PSRA-KREACH@allnex.com to check the possibility to be covered by our Only Representative.

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

Turkey: When purchased directly from Allnex by a Turkish legal entity, this product is compliant with the PRE-registration requirements of KKDIK as all its components are either pre-registered, excluded and/or exempt.

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

Serious eye damage or eye irritation

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 14

Date Prepared: 07/04/2022

Date of last significant revision: 03/06/2022

Component - Hazard Statements

di(trimethylolpropane)tetraacrylate (EU CAS 1393932-71-2)

H319 - Causes serious eye irritation.

H401 - Toxic to aquatic life.

H411 - Toxic to aquatic life with long lasting effects.

Emergency phone numbers for other regions

Asia Pacific

Australia: +61 1800 022 037 (Allnex Australia)

China (PRC): +86(0)532 8388 9090 (NRCC)

India: 000 800 100 7479 (toll free) or +65 3158 1198 (Carechem 24)

Indonesia: 007 803 011 0293 (Carechem 24)

Japan: 0120 015 230 (toll free) (Carechem 24)

Korea: +82 2 3479 8401 (Carechem 24)

Malaysia: +60 3 6207 4347 (Carechem 24)

New Zealand: +64 0800 803 002 (Allnex New Zealand)

Philippines: +63 2 231 2149 (Carechem 24)

Taiwan: +886 2 8793 3212 (Carechem 24)

Vietnam: +84 8 4458 2388 (Carechem 24)

All Others: +65 3158 1074 (Carechem 24)

Europe

+44 (0) 1235 239 670 (Carechem 24)

Middle East, Africa

+44 (0) 1235 239 671 (Carechem 24)

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)

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

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