

SDS: 0018414

Date Prepared: 04/07/2021

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: EBECRYL® 8405 radiation curing resins

Synonyms: None

Product Description: Acrylate modified polyurethane resin

Molecular Formula: Mixture
Molecular Weight: Mixture

Intended/Recommended Use: Surface coating

Uses advised against: This product should not be used in any application where unreacted liquid product

is intended to come in direct contact with skin or nails. Reason: sensitizing

properties.

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.

Trademarks indicated with ®, TM or * as well as the allnex name and logo are registered, unregistered or pending trademarks of Allnex Netherlands BV or its directly or indirectly affiliated allnex Group companies.

2. HAZARDS IDENTIFICATION

GHS Classification

Reproductive Toxicant Hazard Category 1B Skin Corrosion / Irritation Hazard Category 2 Serious Eye Damage / Eye Irritation Hazard Category 2A Skin Sensitizer Hazard Category 1B Aquatic Environment Acute Hazard Category 2 Aquatic Environment Chronic Hazard Category 3

LABEL ELEMENTS



Signal Word DANGER

Hazard Statements

May damage fertility or the unborn child

SDS: 0018414

Date Prepared: 04/07/2021

Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
Toxic to aquatic life

Harmful 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 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
Hexamethylene diacrylate	10 - <25	Skin Irrit. 2 (H315)
13048-33-4		Eye Irrit. 2A (H319)
		Skin Sens. 1B (H317)
		Aquatic Acute 1 (H400)
		Aquatic Chronic 2 (H411)
Dibutyltin dilaurate	< 0.15	Muta. 2 (H341)
77-58-7		Repr. 1B (H360FD)
		STOT RE 1 (H372)
		STOT Single 1 (H370)
		Skin Corr. 1C (H314)
		Eye Dam. 1 (H318)
		Skin Sens. 1B (H317)
		Aquatic Acute 1 (H400)
		Aquatic Chronic 1 (H410)
Polyurethane resin	75 - 90	Skin Irrit. 2 (H315)
		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.

First-aid Measures

Inhalation:

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

Skin Contact:

Flush with a continuous flow of lukewarm water for 20 minutes or until material is removed. Wash with plenty of water and soap. Remove contaminated clothing and shoes without delay. Obtain medical attention if symptoms persist. 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:

Material is not expected to be harmful by ingestion. No specific first aid measures are required.

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:

Avoid release to the environment.

References to other sections:

See Sections 7, 8 and 13 for additional information.

SDS: 0018414

7. HANDLING AND STORAGE

HANDLING

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

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/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 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.

Exposure Limit(s)

77-58-7 Dibutyltin dilaurate

OSHA (PEL): 0.1 mg/m 3 (TWA) ACGIH (TLV): 0.2 mg/m 3 Sn (STEL)

(skin)

0.1 mg/m³ Sn (TWA)

Other Value: Not established

Biological Exposure Limit(s)

No values have been established.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color: clear to hazy, colorless to amber

Appearance:liquidOdor:acrylateBoiling Point:> 100 °CMelting Point:Not available

Vapor Pressure: < 0.13 mm Hg @ 20.00 °C

Specific Gravity/Density: 1.1 - 1.15 g/cm³

Vapor Density:Not availablePercent Volatile (% by wt.):< 0.5 %</th>pH:Not applicableSaturation In Air (% By Vol.):Not availableEvaporation Rate:Not available

Evaporation Rate:
Solubility In Water:
Volatile Organic Content:
Not available
Insoluble
Not available

Flash Point: 164 °C 327.2 °F Cleveland Open Cup

Flammable Limits (% By Vol): Not available Not available Decomposition Temperature: Not available Partition coefficient Not available

(n-octanol/water):

Odor Threshold:
Viscosity (Kinematic):
Viscosity (Dynamic):
Very viscous liquid
Normal combustion

Oxidizing Properties: No

10. STABILITY AND REACTIVITY

Reactivity: No information available

Stability: Stable.

Conditions To Avoid: Extreme heat, sparks, open flame, and oxidizers. Prevent loss of dissolved

oxygen. Avoid extreme heat and/or open flame, sparks, and oxidizers. Avoid excessive heat to closed containers. Avoid direct exposure to sunlight. Excessively

high temperatures and ignition 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. Material should not be heated

above 100°C due to polymerization.

SDS: 0018414

Avoid contamination with iron, copper, aluminum, brass, bronze, acids, bases, **Materials To Avoid:**

oxidizing, reducing and chelating agents, precipitants for copper and initiators for

vinvl polymerization.

Iron or rust may trigger rapid exothermic polymerization.

Free radical initiators, bases, amines.

Radical Initiators

Sunlight or ultraviolet light.

Excessive heat

Hazardous polymerization may occur.

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 Decomposition

Products:

oxides of carbon

smoke

hydrocarbons

soot

Nitrous oxides (NOx)

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 irritation

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: May damage fertility or the unborn child

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 dermal rabbit Acute LD50 > 2000 mg/kg inhalation rat Acute LC50 4 hr > 5 mg/l

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation dermal Irritating
Acute Irritation eye Irritating

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.

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

Hexamethylene diacrylate, CAS 13048-33-4, has oral (rat) and dermal (rabbit) LD50 values of >5000 mg/kg and 3600 mg/kg, respectively. This material causes moderate skin and eye irritation. Repeated skin contact may cause allergic skin reaction. No evidence of point mutations in the Salmonella bacterial test was observed. Structurally similar acrylate and methacrylate substances showed no evidence of point mutation in the in vitro hprt mutation assay and no evidence of a mutagenic effect was seen when tested in whole animal chromosomal aberration and/or micronucleus assays. In contrast this substance as well as the entire acrylate/methacrylate chemical class produced a consistently positive response when tested in the mouse lymphoma assay and/or other in vitro mammalian cell assays designed to detect clastogenicity. However, the biological relevance of this in vitro response is questioned as these results could not be confirmed in tests on whole mammalian systems. This substance has been shown to cause fetotoxic effects during animal testing only in the presence of maternal toxicity.

Based on literature and actual test data, dibutyltin dilaurate (DBTL) has acute oral LD50 values ranging from less than 2000 to >2000 mg/kg. The acute dermal LD50 (rat) is >2000 mg/kg. Dibutyltin dilaurate (DBTL) may cause severe skin irritation. This substance may cause skin sensitization (allergic skin reactions). Repeated oral administration of DBTL has caused liver damage and death in animals. Neurotoxicity has also been observed in animals after oral exposure. DBTL may impair fertility, may cause harm to the unborn child and is suspected of causing genetic defects. Tumour formation was not observed in a 2-year chronic study conducted with mice and rats with a structural analogue. Organotin compounds are suspected of causing immunosuppressant effects.

Acrylated resin may cause moderate eye and skin irritation. Delayed removal from the skin, may lead to blistering of the skin, even if no immediate irritation was noted.

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

12. ECOLOGICAL INFORMATION

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

SDS: 0018414

Overall Environmental Toxicity: Toxic to aquatic life. Harmful 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 Fish
Hexamethylene diacrylate	LC50 = 4.6 - 10 mg/L - Leuciscus idus (96hrs)
(13048-33-4)	LC50 = 0.38 mg/L - Oryzias latipes (96hrs)
	NOEC = 0.072 mg/L - Oryzias latipes (39d)
Dibutyltin dilaurate (77-58-7)	LC50 = 2 mg/L - Oryzias latipes (48h)
	LC50 = 3.1 mg/L - Brachydanio rerio (zebrafish)
Polyurethane resin (-)	Not available

Component / CAS No.	Toxicity to Water Flea
Hexamethylene diacrylate (13048-33-4)	EC 50 = 2.6 mg/L - Daphnia magna (48hrs) EC50 = 2.7 mg/L - Daphnia magna (48hrs) NOEC = 0.14 mg/L - Daphnia magna (21d)
Dibutyltin dilaurate (77-58-7)	EC50 = 0.463 mg/L - Daphnia magna
Polyurethane resin (-)	Not available

Component / CAS No.	Toxicity to Algae
Hexamethylene diacrylate (13048-33-4)	EC 50 = 1.5 mg/L - Desmodesmus subspicatus (72hrs) NOEC = 0.5 mg/L - Desmodesmus subspicatus
	(72hrs) EC50 = 2.33 mg/L - Selenastrum capricornutum (72hrs)
	NOEC = 0.9 mg/L - Selenastrum capricornutum (72hrs)
Dibutyltin dilaurate (77-58-7)	EC50 = 1 mg/L - Scenedesmus subspicatus (algae)
Polyurethane resin (-)	Not available

Component / CAS No.	Partition coefficient
Hexamethylene diacrylate (13048-33-4)	Log Kow = 2.81
Dibutyltin dilaurate (77-58-7)	Log Kow = 4.44
Polyurethane resin (-)	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 seg) 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.

SDS: 0018414

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 designated as "Active" on the TSCA Inventory or are not required to be listed.

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

SDS: 0018414

Australia: One or more components of this product have NOT yet been included in the Australian Inventory of Industrial Chemicals (AIIC) or assessed by AICIS.

New Zealand: This product is NOT approved under the Hazardous Substances and New Organisms (HSNO) Act.

China: One or more components of this product are NOT included on the Chinese (IECSC) inventory. The company 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) inventory or are not required to be listed on the Japanese inventory.

Korea: One or more components of this product are NOT included on the Korean (ECL) inventory. The company has obtained the required notification approvals from Ministry of Environment (MOE) as per the ARECs (the Act on the Registration and Evaluation, etc. of Chemical Substances) for the component(s) not listed in the Korean Inventory (ECL). The product can be imported/manufactured in Korea ONLY under specific conditions. When purchased from Allnex Korea or Chemart distributor this product is compliant with the ARECs. 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 either listed on the Philippine (PICCS) inventory, have been assessed by Environmental Management Bureau (EMB) or are exempt from notification requirements.

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).

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

Reproductive toxicity
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: 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 1

Date Prepared: 04/07/2021 **Date of last significant revision:** 04/07/2021

Component - Hazard Statements

Hexamethylene diacrylate

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

H400 - Very toxic to aquatic life.

H411 - Toxic to aquatic life with long lasting effects.

Dibutyltin dilaurate

H314 - Causes severe skin burns and eye damage.

H317 - May cause an allergic skin reaction.

H318 - Causes serious eye damage.

H341 - Suspected of causing genetic defects.

H360FD - May damage fertility. May damage the unborn child.

H370 - Causes damage to organs.

H372 - Causes damage to organs through prolonged or repeated exposure.

H400 - Very toxic to aquatic life.

H410 - Very toxic to aquatic life with long lasting effects.

Polyurethane resin

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

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: +81 345 789 341 (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

EBECRYL® 8405 radiation curing resins

SDS: 0018414

Date Prepared: 04/07/2021

Page 12 of 12