SDS: 0018325
Date Prepared: 02/28/2023

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name:	**EBECRYL® 4833 RADIATION CURING RESINS**
Synonyms:	None
Product Description:	Aliphatic urethane acrylate in n-vinylpyrrolidone
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:
+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.

2. HAZARDS IDENTIFICATION

GHS Classification
Carcinogenicity Hazard Category 2
Reproductive Toxicant Hazard Category 1B
Specific Target Organ Toxicity - Repeated Exposure Hazard Category 2

LABEL ELEMENTS

Signal Word
DANGER

Hazard Statements
Suspected of causing cancer
May damage fertility or the unborn child
May cause damage to organs through prolonged or repeated exposure

Precautionary Statements
Obtain special instructions before use.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not breathe dust/fume/gas/mist/vapours/spray.

IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Store locked up.
Dispose of contents/container in accordance with local and national regulations.

Hazards Not Otherwise Classified (HNOC), Other Hazards
Contact with skin may cause a cross-allergic reaction in persons already sensitized to acrylates.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

Component / CAS No.	%	GHS Classification
N-Vinyl-2-pyrrolidone 88-12-0	8 - 12	Carc. 2 (H351) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) STOT RE 2 (H373) STOT SE 3 (H335) Eye Dam. 1 (H318)
Dibutyltin dilaurate 77-58-7	0.1 - 0.2	Muta. 2 (H341) 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 -	>= 89	Skin Irrit. 3 (H316) 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.

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.

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.

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:
None known.

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

7. HANDLING AND STORAGE

HANDLING

Precautions: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not breathe vapors or spray mist.

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. Protect from direct sunlight. This might cause uncontrollable polymerization of the product with generation of heat. 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:
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:
Wear eye/face protection such as chemical splash proof goggles or face shield.

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.

Additional Advice:
It is recommended that a shower be taken after completion of workshift especially if significant contact has occurred. Work clothing should then be laundered prior to reuse. Street clothing should be stored separately from work clothing and protective equipment. Work clothing and shoes should not be taken home. 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)

88-12-0 N-Vinyl-2-pyrrolidone
OSHA (PEL): Not established

ACGIH (TLV):	0.05 ppm (TWA)
Other Value:	Not established

77-58-7 Dibutyltin dilaurate

OSHA (PEL):	0.1 mg/m³ (TWA)
ACGIH (TLV):	0.2 mg/m³ 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:	liquid
Odor:	acrylate ester
Boiling Point:	> 100 °C 212 °F
Melting Point:	Not available
Vapor Pressure:	0.013 hPa @ 20 °C
Specific Gravity/Density:	1.11 g/cm³
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:	10 g/L slightly soluble
Volatile Organic Content:	Not available
Flash Point:	> 100 °C 212 °F Cleveland Open Cup
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 available
Viscosity (Dynamic):	2000 - 3000 mPa.s @ 60 °C
Flammability:	Normal combustion
Oxidizing Properties:	No

10. STABILITY AND REACTIVITY

Reactivity: No information available

Stability: Stable.

Conditions To Avoid: Avoid direct contact with heat sources. Avoid direct exposure to sunlight. Avoid exposure to strong UV sources. Avoid friction with temperature increase as result. Loss of polymerization inhibitor. Loss of dissolved air. Avoid temperatures above 60°C (140°F).

Polymerization: May occur

Conditions To Avoid: Avoid contact with free radical initiators. Avoid contact with strong oxidizing agents.

	Avoid contact with bases or amines. Hazardous polymerization can occur when exposed to direct sunlight. Hazardous exothermic polymerization can occur when heated. Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers
Materials To Avoid:	Avoid free radical producing initiators. Avoid contact with peroxides. Avoid contact with active metals. Contact with alkalis. Copper, copper alloys, carbon steel, iron and rust. They give an exothermic reaction with the product. Unintentional contact with them should be avoided.
Hazardous Decomposition Products:	hydrocarbons oxides of carbon nitrogen oxides (NOx) hydrogen cyanide (HCN) soot smoke

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin, Eyes, Oral, Respiratory System.

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

Carcinogenicity: Suspected of causing cancer
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: May cause damage to organs through prolonged or repeated exposure.
Route of Exposure: Inhalation **Affected Organs:** Liver

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		> 3000	mg/kg
dermal	rabbit	Acute LD50		> 1500	mg/kg
Inhalation	rat	Acute LC50	4 hr	No data	

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	dermal	rabbit	Not irritating (tested)
Acute Irritation	eye	rabbit	Not irritating (tested)

ALLERGIC SENSITIZATION

Sensitization	Skin	Not sensitizing (tested)
Sensitization	respiratory	No data

SUBACUTE/SUBCHRONIC TOXICITY

Specific target organ toxicity (repeated exposure): May cause damage to liver through prolonged or repeated exposure by inhalation. .

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.
Contact with skin may cause a cross-allergic reaction in persons already sensitized to acrylates.
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

Vinylpyrrolidone has an acute oral (rat) LD50, acute dermal (rabbit) LD50 and 4-hour inhalation values of 1022 to 1470 mg/kg, 1043 mg/kg and 3.2 mg/L, respectively. Vinylpyrrolidone is harmful by inhalation, in contact with skin and if swallowed. This material produces severe eye irritation in animal tests. Prolonged exposure might lead to irritancy of the respiratory tract and other chronic diseases – including tumor formation. No genotoxic effects were observed in in vitro or animal studies. Vinylpyrrolidone has shown teratogenic effects.

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 has an acute oral (rat) and dermal toxicity (rabbit) LD50 values of >2000 mg/kg and > 2000 mg/kg, respectively. Contact may cause moderate eye and mild skin irritation, and may cause skin sensitization. The toxicological properties of this material have not been fully investigated

Carcinogenicity

This product contains one or more Carcinogen Chemical(s) in accordance with IARC (International Agency for Research on Cancer), NTP (National Toxicology Program), ACGIH (American Conference of Governmental Industrial Hygienists).

Component / CAS No.	Carcinogen
N-Vinyl-2-pyrrolidone 88-12-0	ACGIH A3

12. ECOLOGICAL INFORMATION

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

The ecological properties of this material have not been fully investigated.

RESULTS OF PBT AND vPvB ASSESSMENT
Not determined

HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS No.	Toxicity to Fish
N-Vinyl-2-pyrrolidone (88-12-0)	Not available
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
N-Vinyl-2-pyrrolidone (88-12-0)	EC50 = 45 mg/L - Daphnia species (48h)
Dibutyltin dilaurate (77-58-7)	EC50 = 0.463 mg/L - Daphnia magna
Polyurethane resin (-)	Not available

Component / CAS No.	Toxicity to Algae
N-Vinyl-2-pyrrolidone (88-12-0)	EC50 = 780 mg/L - Desmodesmus subspicatus (72h)
Dibutyltin dilaurate (77-58-7)	EC50 = 1 mg/L - Scenedesmus subspicatus (algae)
Polyurethane resin (-)	Not available

Component / CAS No.	Partition coefficient
N-Vinyl-2-pyrrolidone (88-12-0)	0.4
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 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 higher than +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: 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: This product contains a chemical that is subject to specific information requirements in Australia as set forth by the industrial chemical Bills 2017 (IC Bill).

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).

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
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

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16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)
Health: 1 - Materials that, under emergency conditions, can cause significant irritation.

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: 02/28/2023
Date of last significant revision: 03/06/2022

Component - Hazard Statements
N-Vinyl-2-pyrrolidone
H302 - Harmful if swallowed.
H312 - Harmful in contact with skin.
H318 - Causes serious eye damage.
H332 - Harmful if inhaled.

H335 - May cause respiratory irritation.
H351 - Suspected of causing cancer.
H373 - May cause damage to organs through prolonged or repeated exposure.

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
H316 - Causes mild 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: 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)