

SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: UCECOAT® 2501 radiation curing resins
Synonyms: None
Product Description: Radiation curable aqueous PU dispersion
Molecular Formula: Mixture
Molecular Weight: Mixture
Intended/Recommended Use: Coatings
Uses advised against: Reason: sensitizing properties. This product should not be used in any application where unreacted liquid product is intended to come in direct contact with skin or nails.

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

Skin Corrosion / Irritation Hazard Category 2
Serious Eye Damage / Eye Irritation Hazard Category 2A
Skin Sensitizer Hazard Category 1A

LABEL ELEMENTS



Signal Word
WARNING

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

Precautionary Statements

Wash face, hands and any exposed skin thoroughly after handling.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Avoid breathing dust/fume/gas/mist/vapours/spray.
 Contaminated work clothing should not be allowed out of the workplace.
 IF ON SKIN: Wash with plenty of soap and water.
 Specific treatment (see supplemental first aid instructions on this label).
 Take off contaminated clothing and wash it before reuse.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 If eye irritation persists: Get medical advice/attention.
 If skin irritation or rash occurs: 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.
 Caution - Substance not yet fully tested. For research and development purposes only.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

Component / CAS No.	%	GHS Classification	Carcinogen
Complex reaction product consisting primarily of dipentaerythritol hexaacrylate (CASRN 29570-58-9) and dipentaerythritol pentaacrylate (CASRN 60506-81-2)	< 5	Eye Irrit. 2A (H319) Skin Sens. 1A (H317) Aquatic Acute 3 (H402) Aquatic Chronic 3 (H412)	-
Acrylated resin	30 - 40	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319)	-

SPECIAL HANDLING ADVICE - ATTENTION! This product may release Triethylamine when drying. The drying of this product may release triethylamine (CAS: 121-44-8) at levels exceeding 1.0% w/w and may require exposure monitoring.

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. 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

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:

None known.

References to other sections:

See Sections 7, 8 and 13 for additional information.

7. HANDLING AND STORAGE**HANDLING**

Precautions: Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves and eye/face protection.

Special Handling Statements: Provide good ventilation of working area (local exhaust ventilation if necessary). 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 39.20 - 104.00 °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 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 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:	white
Appearance:	liquid translucent
Odor:	mild
Boiling Point:	≥ 100 °C 212 °F (value for water)
Melting Point:	Not applicable
Vapor Pressure:	2.3 kPa @ 20 °C (value for water)
Specific Gravity/Density:	1.1 - 1.2 @ 20°C
Vapor Density:	> 1 (air = 1)
Percent Volatile (% by wt.):	55 - 60 mostly water
pH:	7 - 8.5
Saturation In Air (% By Vol.):	Not available
Evaporation Rate:	Not available
Solubility In Water:	miscible in all proportions
Volatile Organic Content:	Not available
Flash Point:	> 100 °C 212 °F Non Flammable
Flammable Limits (% By Vol):	Not applicable Non-flammable mixture
Autoignition Temperature:	Not applicable
Decomposition Temperature:	Not applicable
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available
Viscosity (Kinematic):	Not available
Viscosity (Dynamic):	20 - 500 mPa.s @ 25 °C RPM: 50 Low viscous liquid
Explosive Properties:	None.
Oxidizing Properties:	No

10. STABILITY AND REACTIVITY

Reactivity: No information available

Stability: Stable.

Conditions To Avoid: Stable at 25 C (77 F). Polymer will separate out of solution if neutralized with acid to pH <7.0. Do not freeze. Avoid adding cationic additives to concentrated material. Avoid exposure to light. Avoid temperatures > 40 C (104 F) for long periods of time. Avoid contact with bases. Avoid direct exposure to sunlight. Do not mix with acids or acidic materials. Risk of spontaneous polymerisation when heated or in the presence of UV radiation. Risk of spontaneous polymerisation in the presence of radical donors.

Polymerization: May occur

Conditions To Avoid: Hazardous polymerization can occur when exposed to direct sunlight.

Materials To Avoid: Strong acids, bases or amines.
Lewis acids
mercaptans
Strong oxidizers.
Free radical initiators.

May corrode mild steel
Reactions with peroxides.

Hazardous Decomposition Products: hydrogen cyanide (HCN)
oxides of carbon
acrylic acid
Isocyanates
nitrogen 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: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

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

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

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

PRODUCT TOXICITY INFORMATION

ACUTE TOXICITY DATA

oral	rat	Acute LD50	> 2000 mg/kg
dermal	rabbit	Acute LD50	> 2000 mg/kg
inhalation	rat	Acute LC50 4 hr	No data

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	Skin	Irritating
Acute Irritation	eye	Irritating

ALLERGIC SENSITIZATION

Sensitization	Skin	Sensitizing
Sensitization	respiratory	No data

GENOTOXICITY

Assays for Gene Mutations

Ames Salmonella Assay	No data
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OTHER INFORMATION

The product toxicity information above has been estimated.

The toxicological properties of this material have not been fully determined.

This product may release triethylamine when drying.

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.

11. TOXICOLOGICAL INFORMATION

HAZARDOUS INGREDIENT TOXICITY DATA

Complex reaction product consisting primarily of dipentaerythritol hexaacrylate (CASRN 29570-58-9) and dipentaerythritol pentaacrylate (CASRN 60506-81-2) has an acute oral (rat) LD50 value of > 2000 mg/kg. The dermal (rabbit) LD50 is > 2000 mg/kg (based on a similar substance). The substance is not irritating to skin but moderately irritating to eye and was found to be a skin sensitizer in the mouse local lymph node assay. Based on the results of in vitro and in vivo testing, the substance is not considered to be genotoxic. No fertility or developmental effects were seen in reproductive toxicity studies.



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

12. ECOLOGICAL INFORMATION

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

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

This material is not classified as dangerous for the environment.

RESULTS OF PBT AND vPvB ASSESSMENT

Not determined

HAZARDOUS INGREDIENT TOXICITY DATA

Component / CAS No.	Toxicity to Fish
Complex reaction product consisting primarily of dipentaerythritol hexaacrylate (CASRN 29570-58-9)	LL50 = 13 mg/L - Carp (<i>Cyprinus carpio</i>) (96h)

and dipentaerythritol pentaacrylate (CASRN 60506-81-2) (-)	
Acrylated resin (-)	Not available

Component / CAS No.	Toxicity to Water Flea
Complex reaction product consisting primarily of dipentaerythritol hexaacrylate (CASRN 29570-58-9) and dipentaerythritol pentaacrylate (CASRN 60506-81-2) (-)	EL50 = 35 mg/L - Daphnia magna (48h) NOEC = 8.4 mg/L - Daphnia magna (48h)
Acrylated resin (-)	Not available

Component / CAS No.	Toxicity to Algae
Complex reaction product consisting primarily of dipentaerythritol hexaacrylate (CASRN 29570-58-9) and dipentaerythritol pentaacrylate (CASRN 60506-81-2) (-)	ErL50 = >100 mg/L - Pseudokirchneriella subcapitata (72h) ErC50 = >36 mg/l - Pseudokirchneriella subcapitata (72h)
Acrylated resin (-)	Not available

Component / CAS No.	Partition coefficient
Complex reaction product consisting primarily of dipentaerythritol hexaacrylate (CASRN 29570-58-9) and dipentaerythritol pentaacrylate (CASRN 60506-81-2) (-)	Not available
Acrylated 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 included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

This substance may cause: (i) skin irritation. (ii) sensitization. (iii) cancer. (iv) systemic effects. (v) developmental effects.

When using this substance: (i) avoid skin contact. (ii) avoid breathing the substance. (iii) avoid ingestion. (iv) use skin protection.

This product is subject to TSCA 12(b) Export Notification (P17-0010; Alkyl substituted alkenoic acid, alkyl ester, polymer with alkyl substituted alkenoate and alkenoic acid, hydroxy substituted[(oxoalkyl)oxy]alkylester, reaction products with alkanolic acid, dipentaerythritol and isocyanate substituted carbomonocycle, compds. with alkylamine).

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

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 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: 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 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: One or more components of this product are NOT included in 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.

PRODUCT HAZARD CATEGORY UNDER SECTIONS 311 AND 312 OF EPCRA**Physical Hazards**

Not applicable

Health Hazards

Skin Corrosion or Irritation

Respiratory or Skin Sensitization

Serious eye damage or eye irritation

16. OTHER INFORMATION**NFPA Hazard Rating (National Fire Protection Association)**

Health: 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 11

Date Prepared: 08/25/2018

Date of last significant revision: 07/13/2017

Complex reaction product consisting primarily of dipentaerythritol hexaacrylate (CASRN 29570-58-9) and dipentaerythritol pentaacrylate (CASRN 60506-81-2)

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

H402 - Harmful to aquatic life.

H412 - Harmful to aquatic life with long lasting effects.

Acrylated 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)25 8547 7110 (Jiangsu registration center) / +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>

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