


TRILITE® UPRA220U

Strong Base Anion Exchange Resin

1. PRODUCT AND COMPANY INFORMATION

- 1) Product name: TRILITE® UPRA220U
- 2) Recommended use of the chemical and restrictions on use
 - Recommended use: Ion exchange resin
 - Restrictions on use: It is inedible
- 3) Company information
 - Company: Samyang corporation ion exchange resin sales team
 - Address: #31 Jongno 33-gil, Jongno-gu, Seoul 03129, Korea
 - Telephone: +82-2-740-7423
 - Fax: +82-2-740-7709
 - E-Mail: trilite@samyang.com
 - Homepage: www.samyangtrilite.com

2. HAZARDS IDENTIFICATION

- 1) Globally Harmonized System of Classification and Labeling of Chemicals(GHS)
 - Physical hazard: Not applicable
 - Health hazard: Eye Irritation - Category 2
 - Environment hazard: Not applicable
- 2) Label elements including precautionary statements
 - Symbol: 
 - Signal word: **Warning**
 - Hazard statements: H319 Causes serious eye damage
 - Precautionary statements
 - Prevention
 - P264 Wash thoroughly after handling.
 - P280 Wear protective gloves, protective clothing, eye protection, face protection.
 - Responses
 - P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes.Remove contact lenses, if present and easy to do. Continue rinsing.
 - P337+P313 If eye irritation persists: Get medical advice/attention.
- 3) US NFPA
 - Health: 1, Flammability: 1, Reactivity: 0, Water reactivity: 0

3. COMPOSITION, INFORMATION ON INGREDIENTS

Ingredients	CAS No.	EINECS No.	Conc. %
Diethenylbenzene polymer with ethenylbenzene and ethenylethylbenzene, chloromethylated, trimethylamine-quaternized, hydroxide	69011-18-3	No data available from ECHA	63±5
Water	7732-18-5	231-791-2	37±5

4. FIRST AID MEASURES

- 1) In case of eye contact
 - Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- 2) In case of skin contact
 - Wash off with soap and plenty of water.
- 3) If inhaled
 - If breathed in, move person into fresh air.
 - If not breathing, give artificial respiration.
 - Consult a physician.
- 4) If swallowed
 - Never give anything by mouth to an unconscious person.
 - Rinse mouth with water.
- 5) Other medical attention
 - Medical personnel should be aware of the protective measures of the substance.
- 6) Potential health effect
 - May be harmful if swallowed.

5. FIRE, FIGHTING MEASURES

- 1) Flammable properties
 - Flash point: No flash occurred under 93°C (Rapid equilibrium method)
 - Autoignition temperature: No spontaneous combustion under 200°C
 - Burning rate: Did not ignite (UN TDG test & criteria - Test N1)
- 2) Suitable extinguishing media
 - Water spray, alcohol-resistant foam, dry chemical, carbon dioxide
- 3) Specific hazards arising from the chemical
 - No data available
- 4) Special protective equipment for fire-fighters
 - Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

- 1) Personal precautions
 - Ensure adequate ventilation.
- 2) Environmental precautions
 - No data available
- 3) Methods and materials for containment and cleaning up
 - Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

- 1) Precautions for safe handling
 - Avoid breathing dust.
 - Provide appropriate exhaust ventilation at places where dust is formed.
 - Avoid contact with skin and eyes.
- 2) Conditions for safe storage
 - Store in a closed container.
 - Avoid direct sunlight, heat sources, and strong oxidizing agents.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

- 1) Components with workplace control parameter
 - KOSHA: No data available
 - US ACGIH: No data available
- 2) Biological exposure limits: No data available
- 3) Appropriate engineering controls: No data available
- 4) Personal protective equipment
 - Respiratory protection: Dust mask for chemicals
 - Eye protection: Protective goggles for chemicals
 - Hand protection: Protective gloves
 - Skin and body protection: Working clothes for chemicals

9. PHYSICAL AND CHEMICAL PROPERTIES

- 1) State: Solid(Granular) at 20°C
- 2) Odour and Odour threshold: No data available
- 3) pH: 9.9~10.9 at 20°C ※ Sample:H₂O = 1:5(V/V)
- 4) Melting point, Freezing range (Initial): > 80°C
- 5) Boiling point: No data available
- 6) Flash point: No flash occurred under 93°C (Rapid equilibrium method)
- 7) Evaporation rate: No data available
- 8) Flammable properties
 - Burning rate: Did not ignite ※ UN TDG test & criteria - Test N1
- 9) Lower explosion limit, Upper explosion limit: No data available
- 10) Vapour pressure: No data available
- 11) Water solubility: Insoluble at 20°C
- 12) Vapor density: No data available
- 13) Density: 1.1 at 20°C
- 14) Partition coefficient (n-octanol, water): No data available
- 15) Autoignition temperature: No spontaneous combustion under 200°C
- 16) Decomposition temperature: No data available
- 17) Viscosity: No data available
- 18) Explosive properties: No self-reaction hazard ※ UN TDG test & criteria - Test E3
- 19) Oxidizing properties: No data available
- 20) Molecular weight: No data available

10. STABILITY AND REACTIVITY

- 1) Chemical stability
 - Stable under general condition.
- 2) Conditions to avoid
 - Avoid breathing dust.
- 3) Materials to avoid
 - Strong oxidizing agents
- 4) Hazardous decomposition products
 - Carbon oxides, Sulfur oxides

11. TOXICOLOGICAL INFORMATION

- 1) Information on the likely route of exposure
- 2) Information on health harmfulness
- 3) Acute toxicity
 - Oral rat LD50: No data available ※ from US NLM/ECHA
 - Skin rabbitLD50: No data available
 - Inhalation rat LC50(dust, 4h): No data available
- 4) Skin irritation: No data available
- 5) Eye irritation
 - Irritating (Vinylbenzyltrimethylammonium hydroxide polymer with divinylbenzene)※ from US NLM/ECHA
- 6) Respiratory sensitization: No data available
- 7) Skin sensitization: No data available
- 8) Germ cell mutagenicity: No data available
- 9) Carcinogenicity: Not classifiable ※ from CCRIS/IARC
- 10) Reproductive toxicity: No data available
- 11) Specific target organ toxicity - single exposure (GHS): No data available
- 12) Specific target organ toxicity - repeated exposure (GHS): No data available
- 13) Aspiration hazard: No data available

12. ECOLOGICAL INFORMATION

- 1) Toxicity
 - FishLC50: No data available ※ from US NLM/ECHA
 - Crustacean EC50: No data available
 - Algae EC50: No data available
- 2) Persistence and degradability: No data available
- 3) Bio accumulative potential: No data available
- 4) Mobility in soil: No data available
- 5) Other adverse effects: No data available

13. DISPOSAL CONSIDERATIONS

- 1) Disposal consideration
 - Observe all environmental regulations.

- 2) Disposal precaution(including contaminated container and packaging method)
 - Keep in suitable, closed containers for disposal.

14. TRANSPORT INFORMATION

- 1) UN TDG: Not dangerous goods
- 2) UN proper shipping name: Not dangerous goods
- 3) Dangerousness class: Not dangerous goods
- 4) Packing group (if possible): Not dangerous goods
- 5) Marine pollution(applicable or not applicable): Not applicable
- 6) Special precaution
 - Fire EmS Guide: F-A (Recommendation)
 - Spillage EmS Guide: Not dangerous goods

15. REGULATORY INFORMATION

- 1) Korea Industrial Safety and Health Act (GHS): Eye Irritation - Category 2
- 2) Korea Hazardous Materials Safety Control Act: Not hazardous material
- 3) Korea Chemicals Control Act: Not toxic chemical
- 4) Korea Persistent Organic Pollutants Control Act: Not applicable
- 5) US OSHA hazards(GHS): Eye Irritation

16. OTHER INFORMATION

- 1) Issued Date: 2013. 6. 21
- 2) Revision No: 4.0
- 3) Revision Date: 2023. 2. 10
- 4) References
 - GHS Classification: Korea MSDS Testing Lab Certificate(Report No. 2016-03-002455),US NLM
 - Physical and chemical properties: Korea MSDS Testing Lab Certificate
 - Transport information: Korea MSDS Testing Lab Certificate
 - Toxic & ecological information: OECD SIDS, ECHA, US NLM, HSDB, IARC, CCRIS, JP NITE
- 5) Acronyms and Websites
 - ECHA: European chemical agency, <http://echa.europa.eu/>
 - US NLM: U.S. National Library of Medicine, <http://chem.sis.nlm.nih.gov/chemidplus/>
 - HSDB: U.S. Hazardous Substances Data Bank, <http://toxnet.nlm.nih.gov/>
 - CCRIS: U.S. Chemical Carcinogenesis Research Information System, <http://toxnet.nlm.nih.gov/>
 - IARC: International Agency for Research on Cancer, <http://monographs.iarc.fr/>
 - JP NITE: Japan National Institute of Technology and Evaluation, <http://www.safe.nite.go.jp/>
- 6) Hazards Testing and Classification
 - Korea MSDS Testing Laboratory

This SDS is composed in line with The Korea Occupational Safety and Health Act Article 41 to protect the health of the employees, and for documentation. This SDS is composed with reference to documents and criteria provided by KOSHA.