SAFETY DATA SHEET

SPECIALTY ELECTRONIC MATERIALS SWITZERLAND GMBH

Product name: AMBERTEC™ UP6150 H/OH Ion Exchange Resin **Issue Date:** 11/27/2018
Print Date: 10/30/2020

SPECIALTY ELECTRONIC MATERIALS SWITZERLAND GMBH encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: AMBERTEC™ UP6150 H/OH Ion Exchange Resin

Recommended use of the chemical and restrictions on use
Identified uses: Ion exchange and/or Adsorption process

COMPANY IDENTIFICATION
SPECIALTY ELECTRONIC MATERIALS
SWITZERLAND GMBH
GROSSMATTE 4
6014 LUZERN
SWITZERLAND

Customer Information Number: 800-3876-6838
SDSQuestion-EU@dupont.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: +(41)- 435082011
Local Emergency Contact: +(972)-37630639

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Serious eye damage - Category 1 - H318
For the full text of the H-Statements mentioned in this Section, see Section 16.

Label elements

Hazard pictograms

Signal word: DANGER

Hazard statements
H318 Causes serious eye damage.

Precautionary statements
P280 Wear eye protection/ face protection.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

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Contains Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form; Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form

Contains Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form; Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Quaternary ammonium divinylbenzene/styrene copolymer., Sulfonated divinylbenzene/styrene copolymer.
This product is a mixture.

CASRN / EC-No. / Index-No.	Concentration	Component	Classification

CASRN 69011-18-3 **EC-No.** Polymer **Index-No.** –	>= 20.0 - < 30.0 %	Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form	Eye Dam. - 1 - H318
CASRN 69011-20-7 **EC-No.** Polymer **Index-No.** –	>= 20.0 - < 30.0 %	Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form	Eye Dam. - 1 - H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Description of first aid measures
Inhalation: Move to fresh air.

Skin contact: Wash off with soap and water. If skin irritation persists, call a physician.

Eye contact: Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Get prompt medical attention.

Ingestion: Drink two glasses of water.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use the following extinguishing media when fighting fires involving this material: Water spray Carbon dioxide (CO2) Foam Dry chemical

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture
Hazardous combustion products: No data available

Unusual Fire and Explosion Hazards: Cool closed containers exposed to fire with water spray. Exposure to decomposition products may be a hazard to health. Dusts at sufficient concentrations can form explosive mixtures with air.

Advice for firefighters
Fire Fighting Procedures: Remain upwind. Avoid breathing smoke.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations. If exposed to material during clean-up operations, see SECTION 4, First Aid Measures, for actions to follow.

Environmental precautions: WARNING: KEEP SPILLS OF PRODUCT AS SUPPLIED OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER. DO NOT DISCHARGE CLEANING RUNOFFS DIRECTLY TO OPEN BODIES OF WATER. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Keep spectators away. Floor may be slippery; use care to avoid falling. Transfer spilled material to suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid repeated freeze-thaw cycles; beads may fracture. If frozen, thaw at room temperature. Avoid contact with skin, eyes and clothing. Corrosive to eyes See SECTION 8, Exposure Controls/Personal Protection, prior to handling. Properly designed equipment is vital if these resins are to be used in conjunction with strong oxidizing agents such as nitric acid to prevent a rapid build-up of pressure and possible explosion. Consult a source knowledgeable in the handling of these materials before proceeding.

Conditions for safe storage: No special storage conditions required.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Exposure controls
Engineering controls: None required under normal operating conditions.

Individual protection measures

Eye/face protection: Chemical resistant goggles must be worn. Eye protection worn must be compatible with respiratory protection system employed.

Skin protection

Hand protection: Wear suitable gloves.

Respiratory protection: No personal respiratory protective equipment normally required.

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Beads
Color	amber
Odor	Odorless
Odor Threshold	No data available
pH	5.0 - 8.0
Melting point/range	-18 - 0 °C
Freezing point	No data available
Boiling point (760 mmHg)	100.00 °C
Flash point	No data available
Evaporation Rate (Butyl Acetate = 1)	<1.00 Water
Flammability (solid, gas)	No data available
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	No data available
Relative Vapor Density (air = 1)	<1.0000 Water
Relative Density (water = 1)	ca.1.0000 - 1.3000
Water solubility	insoluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	ca.500.00 °C
Decomposition temperature	No data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available
Percent volatility	40.00 - 60.00 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: No data available

Possibility of hazardous reactions: Stable under normal conditions.
Product will not undergo polymerization.

Conditions to avoid: No data available

Incompatible materials: Avoid contact with the following: Strong Oxidizers Nitric acid

Hazardous decomposition products: Thermal decomposition may yield the following: monomer vapors

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Product test data not available. Refer to component data.

Acute dermal toxicity
Product test data not available. Refer to component data.

Acute inhalation toxicity
Product test data not available. Refer to component data.

Skin corrosion/irritation
Product test data not available. Refer to component data.

Serious eye damage/eye irritation
Risk of serious damage to eyes.

Sensitization
Product test data not available. Refer to component data.

Specific Target Organ Systemic Toxicity (Single Exposure)
Product test data not available. Refer to component data.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Product test data not available. Refer to component data.

Carcinogenicity
Product test data not available. Refer to component data.

Teratogenicity
Product test data not available. Refer to component data.

Reproductive toxicity
Product test data not available. Refer to component data.

Mutagenicity
Product test data not available. Refer to component data.

Aspiration Hazard
Product test data not available. Refer to component data.

Additional information
No data are available for this material. The information shown is based on profiles of compositionally similar materials.
Laboratory tests showed an increase in pH within one minute of exposing strong acid cation in hydrogen form (SAC H) and strong base anion in hydroxyl form (SBA OH) mixed bed resins to a 1% NaCl solution. This pH effect is likely to result in severe irritation to the eye for exposure to the product as supplied.

COMPONENTS INFLUENCING TOXICOLOGY:

Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form

Acute oral toxicity
For similar material(s): LD50. Rat. female. > 2,000 mg/kg No deaths occurred at this concentration.

Acute dermal toxicity
The dermal LD50 has not been determined.

Acute inhalation toxicity
The LC50 has not been determined.

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Sensitization
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Available data are inadequate to determine single exposure specific target organ toxicity.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
No relevant data found.

Carcinogenicity
No relevant data found.

Teratogenicity
No relevant data found.

Reproductive toxicity
No relevant data found.

Mutagenicity
This material was not mutagenic in an Ames bacterial assay.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form

Acute oral toxicity
Typical for this family of materials. LD50. Rat. > 5,000 mg/kg

Acute dermal toxicity
The dermal LD50 has not been determined.

Skin corrosion/irritation
Brief contact is essentially nonirritating to skin.

Sensitization
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
No relevant data found.

Carcinogenicity
No relevant data found.

Teratogenicity
No relevant data found.

Reproductive toxicity
No relevant data found.

Mutagenicity
Reverse mutation test using bacteria: Non-mutagenic with and without metabolic activation

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

General Information
Limited effects are expected from exposure of the environmental compartments by insoluble plastic beads of large diameter (300 to 1200 microns).

Toxicity

Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form
Acute toxicity to fish
No relevant data found.

Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form
Acute toxicity to fish
Not expected to be acutely toxic, but material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

Persistence and degradability

Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form
Biodegradability: No relevant data found.

Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form
Biodegradability: No appreciable biodegradation is expected.

Bioaccumulative potential

Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form
Bioaccumulation: No relevant data found.

Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form
Bioaccumulation: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

Mobility in soil

Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form
No relevant data found.

Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form

In the terrestrial environment, material is expected to remain in the soil.
In the aquatic environment, material will sink and remain in the sediment.

Results of PBT and vPvB assessment

Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Other adverse effects

Trimethylamine functionalised copolymer of styrene and divinylbenzene in the hydroxide form

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Sulfonated polymer of styrene, ethylstyrene and divinylbenzene in the hydrogen form

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Disposal methods:
Can be incinerated, when in compliance with local regulations.

Contaminated packaging:
Empty containers should be taken to local recyclers for disposal. Refer to applicable federal, state, and local regulations.

14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport:

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated for transport

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Listed in Regulation: Not applicable
Listed in Regulation: Not applicable

Classification and labeling have been performed according to Regulation (EC) No 1272/2008.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
H318 Causes serious eye damage.

Revision
Identification Number: 12018801 / A715 / Issue Date: 11/27/2018 / Version: 3.1
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Eye Dam.	Serious eye damage

Full text of other abbreviations
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea

Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

SPECIALTY ELECTRONIC MATERIALS SWITZERLAND GMBH urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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