✤TECHNIC, INC. SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product Name: TECHNISTAN AG SILVER CONCENTRATE Product Code: 405425 Recommended use: Electroplating bath component; for industrial use only. Supplier: Technic Inc. Current SDS preparation date: November 8, 2018 1 Spectacle Street Original SDS preparation date: December 18, 2013 Cranston, RI 02910 USA Telephone no: 401-781-6100 Emergency no: ChemTrec 800-424-9300, Outside the USA and Canada 703-527-3887

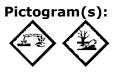
SECTION 2. HAZARD IDENTIFICATION

Classification:

Skin Corrosion/Irritation, Category 1 Eye Damage/Irritation, Category 1 Acute Aquatic Toxicity, Category 1 Chronic Aquatic Toxicity, Category 1

Label elements and precautionary statements:

Signal word: Danger



Hazards not otherwise classified: None

Hazard statement(s):

Causes severe skin burns and eye damage Very toxic to aquatic life with long lasting effects

Precautionary statement(s):

Do not breathe dust, fume, gas, mist, vapors or spray.

Wash hands thoroughly after handling.

Wear protective gloves, clothing and eye and face protection.

If swallowed: Call a poison center or doctor/physician if you feel unwell. Rinse mouth, do not swallow.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician. Wash contaminated clothing before reuse. Dispose of contents and container in accordance with local, state and federal regulations. Avoid release to the environment. Collect spillage.

SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical name	CAS Number	EINECS Number	Concentration
Silver methanesulfonate	2386-52-9	219-199-2	28%
Methanesulfonic acid	75-75-2	200-898-6	2%

SECTION 4. FIRST AID MEASURES

Inhalation:

Remove patient to fresh air. Support breathing if required. Obtain medical treatment for dizziness, unconsciousness or irritation or difficulty in breathing.

Skin contact:

Remove contaminated clothing and wash affected area thoroughly with soap and water. Launder clothing before rewearing. Seek medical attention for prolonged skin irritation.

Eye contact:

Flush with water, including under lids, for fifteen minutes. Obtain immediate medical attention.

Ingestion:

If patient is conscious, rinse mouth and drink at least two large glasses of water. DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Obtain immediate medical attention.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use media appropriate for surrounding fire such as foam, extinguishing powder, carbon dioxide or water spray. In case of fire, cool endangered containers with water spray.

Unsuitable extinguishing media: High pressure water jet.

Specific hazards in case of fire: Thermal decomposition may release sulfur dioxide and sulfur trioxide.

Special protective equipment and precaution for fire fighters: For fires in enclosed areas, wear self-contained breathing apparatus and full protective gear. Do not inhale combustion gases.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wear appropriate skin, eye and respiratory protection. Do not eat, drink or smoke while cleaning up. Ensure adequate ventilation.

Methods and materials for containment and cleaning up:

Wear appropriate personal protective gear including eye, skin and respiratory protection. Contain spilled material and collect by absorption or other suitable method. Flush spill area with water. Do not allow this material or its rinsings to enter storm or sanitary sewers or other waterways. (See also Section 13).

Environmental precautions:

Prevent spills and rinsings from entering storm or sanitary sewers or other waterways and contact with soil.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid contact with eyes. Avoid prolonged repeated skin contact and breathing mists or vapors. Use in well-ventilated area. Do not empty waste into sanitary drains.

Conditions for safe storage, including incompatibilities:

Store in a cool, dry area. Use with adequate ventilation. Keep container tightly closed when not in use. Store only in the original container.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: Ingredient	ACGIH TLV	<u>OSHA PEL</u>	Other Limits
Silver methanesulfonate	0.01 mg/m³(Ag) TWA	0.01 mg/m ³ (Ag)	0.01 mg/m ³ (Ag) NIOSH REL

Appropriate engineering controls:

Use in well-ventilated area with local exhaust.

Respiratory protection: Wear appropriate, approved respiratory protection when ventilation is inadequate to meet exposure limits.

Eye protection:

. .

Chemical splash goggles or safety glasses with side shields must be worn.

Skin protection:

Wear rubber or neoprene gloves. Wear rubber apron and long sleeves to prevent skin contact. Wash hands thoroughly with soap and water after handling and before eating or smoking.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid Color: Clear, colorless to pale yellow Odor: Slight sulfur oxide odor Odor threshold: Not available **pH:** <2.0 Melting/freezing point: Not determined **Initial boiling point:** >100 °C (>212 °F) Flash point: Not applicable **Evaporation rate:** Not available Flammability (solid, gas): Not applicable **Upper/lower explosion limits:** Non-explosive Vapor pressure: Not determined Vapor density: Not determined **Relative density (H₂O = 1) @25 °C:** 1.25-1.40 Solubility: Completely soluble in water at 20 °C Partition coefficient octanol/water: Not determined Auto-ignition temperature: Not applicable Decomposition temperature: Not available Viscosity: Similar to water

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Stable, non-reactive when stored and used according to recommendations.

Chemical stability: No decomposition if used according to specifications.

Possibility of hazardous reactions: None are known.

Conditions to avoid: None reported.

Incompatible materials: Strong acids and bases.

Hazardous decomposition products: Oxides of silver, carbon and sulfur.

SECTION 11. TOXICOLOGICAL INFORMATION

Routes of Exposure and Symptoms

Inhalation: May cause irritation of respiratory tract.

Ingestion: Causes pain and burning in mouth, blackening of skin and mucous membranes, nausea, vomiting, diarrhea and possible shock symptoms.

Skin Contact: Causes severe skin burns.

Eye Contact: Causes severe eye damage.

Acute and Chronic Effects from Short- and Long-term Exposure: See Routes of Exposure and Symptoms above.

Acute Oral Toxicity: LDLo: 200 mg/kg (rat, methanesulfonic acid)

Acute Dermal Toxicity: No applicable information available.

Acute Inhalation Toxicity: No applicable information available.

Acute Eye Irritation: No applicable information available.

Dermal Irritation: No applicable information available.

Carcinogen Listings:

IARC: No NTP: No OSHA: No

Reproductive Effects: No applicable information available.

Target Organ Effects: No applicable information available.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity: There are no data reported for this material; however, silver compounds are known to be harmful to aquatic life.

Persistence and degradability: There are no data reported for this material.

Bio-accumulative potential: There are no data reported for this material.

Mobility in soil: Accidental spillage may lead to penetration in the soil and groundwater. Improper handling and disposal of this material may cause environmental damage.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal:

Disposal of this material is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

SECTION 14. TRANSPORT INFORMATION

Classification for shipment by road or rail, sea (IMDG) and air (IATA/ICAO):

UN number: UN1760 UN proper shipping name: Corrosive Liquid, N.O.S. (Methane Sulfonic Acid, Metallic Mixture) Transport hazard class: 8 Packing group: III

Marine Pollutant: No

SECTION 15. REGULATORY INFORMATION

Inventory Status:

All components are on TSCA, EINECS/ELINCS, AICS, and DSL. **U.S. Regulations:**

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III:

SARA (311/312) HAZARD CATEGORIES:

____None <u>X_</u>Immediate ____Delayed ____Fire ____Reactive ____Pressure generating

SARA 313: This product contains the following SARA 313 Toxic Release Chemicals.Chemical NameCAS NumberSilver methanesulfonate2386-52-928%

The following product components are cited on the lists below:Chemical NameCAS NumberNoneList CitationsCalifornia Proposition 65 List

SECTION 16. OTHER INFORMATION

VOC (Volatile Organic Compounds): None

HMIS Ratings:

Health: 2 Flammability: 0 Reactivity: 0 Personal Protection: C

Prepared by: Allan H. Reed

SDS Preparation date: November 8, 2018 **Supersedes previous version:** December 18, 2013.

This SDS contains revisions in the following section(s): 14, 15.

The information contained herein is accurate to the best of our knowledge. Technic Inc. makes no warranty of any kind, express or implied, concerning the safe use of this material in any process or in combination with other substances.

End of Safety Data Sheet