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**SECTION 1: COMPANY AND PRODUCT INFORMATION**

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**1.1 Product identifiers**

Product name : Silver Thiosulfate Mix 20mM  
Product code : 41920008  
CAS number : Not Available  
Synonyms : Not Available  
: REACH Pre-registration No.: N/A

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : For research and laboratory use only.

**1.3 Details of the supplier of the safety data sheet**

Address : Genelix International Inc, dba bioWORLD  
4150 Tuller Rd. Suite 228  
Dublin, OH 43017  
Email : tech@bio-world.com  
Phone : 614-792-8680, Toll free: 1-888-bio-PLUS  
Fax : 614-792-8685

**1.4 Emergency telephone number**

Emergency phone : 1-888-bio-PLUS

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**SECTION 2: HAZARDS IDENTIFICATION**

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**2.1 Classification of substance or mixture**

Oxidizing solids (Category 2), H272  
Corrosive to metals (Category 1), H290  
Skin corrosion (Category 1B), H314  
Serious eye damage (Category 1), H318  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 1), H410

**2.2 GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Oxidizing solids (Category 2), H272  
Corrosive to metals (Category 1), H290  
Skin corrosion (Category 1B), H314  
Serious eye damage (Category 1), H318  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 1), H410

**2.3 Label elements and precautionary statements**

Pictogram : 

Signal word	: Danger
Hazard statement(s)	: H272 - May intensify fire; oxidizer. H290 - May be corrosive to metals. H314 - Causes severe skin burns and eye damage. H410 - Very toxic to aquatic life with long lasting effects.
Precautionary statement(s)	: P210 - Keep away from heat. P220 - Keep/Store away from clothing/combustible materials. P221 - Take any precaution to avoid mixing with combustibles. P234 - Keep only in original container. P260 - Do not breathe dust or mist. P264 - Wash skin thoroughly after handling. P273 - Avoid release to the environment. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+361+353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+340+310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. P305+351+338+310 - 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. P363 - Wash contaminated clothing before reuse. P370+378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. P390 - Absorb spillage to prevent material damage. P391 - Collect spillage. P405 - Store locked up. P406 - Store in corrosive resistant stainless steel container with a resistant inner liner. P501 - Dispose of contents/container to an approved waste disposal plant.

## 2.4 Hazards not otherwise classified (HNOC) or not covered by GHS

No unclassified hazards known.

## 2.5 NFPA Rating

Health hazard	: 3
Fire hazard	: 0
Reactivity hazard	: 2

## 2.6 HMIS Rating

Health hazard	: 3
Chronic health hazard	: -
Reactivity hazard	: 0
Flammability	: 0
Physical hazard	: 2

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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### 3.1 Substances

Substance	CAS#	EC#	Concentration
Silver nitrate M.F: AgNO <sub>3</sub> M.W: 169.87 g/mol	7761-88-8	231-853-9	51%
Sodium thiosulfate M.F: Na <sub>2</sub> O <sub>3</sub> S <sub>2</sub> M.W: 158.11 g/mol	7772-98-7	231-867-5	49%

### 3.2 Hazardous components & classification

Ox. Sol. 2; Met. Corr. 1; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; Aquatic Chronic 1; H272, H290, H314, H410

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician if symptoms are severe or persistent. Provide this data sheet to medical personnel. If product is spilled or leaked, evacuate area.

#### In case of inhalation

If inhaled, move person to fresh air and monitor breathing. If not breathing, give artificial ventilation. Consult a physician if symptoms are severe or persistent.

#### In case of skin contact

Immediately wash with excess soap and water. If spilled on clothing, remove all affected clothing. Consult a physician if symptoms are severe or persistent.

#### In case of eye contact

Flush eyes with water or eye wash solution as a precaution for 15 minutes. Consult a physician if symptoms are severe or persistent.

#### In case of ingestion

Only induce vomiting if recommended by medical personnel. If subject is unconscious, do not give anything by mouth. If conscious, rinse mouth with water. Consult a physician if symptoms are severe or persistent.

### 4.2 Most important symptoms and effects, both acute and delayed

All known important symptoms are described in Section 2 and/or Section 11. No other important symptoms to report.

### 4.3 Indication of any immediate medical attention and special treatment needed

No special treatment indicated. Provide treatment in accordance with exhibited symptoms.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1 Suitable extinguishing media

Water spray, alcohol-resistant foam, dry chemical, and carbon dioxide extinguishers are suitable.

### 5.2 Unsuitable extinguishing media

No known unsuitable extinguishing media.

### 5.3 Special hazards arising from the substance

Container explosion may occur under fire conditions.

### 5.4 Advice for firefighters

Wear protective gear, such as self-contained breathing apparatus, if necessary.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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### 6.1 Personal precautions, protective equipment and emergency procedures

Provide suitable ventilation. Use any necessary personal protective equipment. Avoid contact with skin and eyes, and avoid creation and inhalation of vapor or dust. Keep all unnecessary personnel away.

**For personal protection see section 8**

### 6.2 Environmental precautions

Prevent product from entering public sewers and waterways.

### 6.3 Methods and material for containment and cleaning up

Use inert absorbent material to absorb any spilled or leaked product and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

**For proper disposal see section 13**

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## SECTION 7: HANDLING AND STORAGE

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### 7.1 Precautions for safe handling

Provide suitable ventilation. Wear any necessary personal protective equipment.

**For precautions see section 2**

### 7.2 Conditions for safe storage, including any incompatibilities

Storage conditions : Store upright, closed container in arid, ventilated environment.  
Light sensitive.  
Storage class - TRGS 510: Oxidizing hazardous materials

Incompatible materials : Strong oxidizing agents are incompatible with this product.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 8.1 Control parameters

This product is not known to contain any substances with occupational exposure limit values.

### 8.2 Engineering controls

Follow good industrial hygiene and safety practices when handling product.

### 8.3 Personal protective equipment

Eye/face protection : Use only government-approved safety glasses with side-shields.

Skin protection : Use gloves when handling product. Inspect gloves before use to ensure suitability for use. Remove without exposing skin to the gloves outer surface. Discard used gloves according to all pertinent laws and/or current good practices (cGXP). Wash hands with soap and water.

Body protection : Wear appropriate clothing. Ensure clothing is in good condition, with no holes or tears. When selecting clothing, consider the concentration and amount of substance to be handled.

- Respiratory protection : Use only approved respirators and components which comply with CDC and NIOSH (US) or CEN (EU) regulations. Required only when vapors or aerosols are created.
- Control of environmental exposure : Prevent product from entering the environment, especially through public sewers or waterways.
- General hygiene considerations : Comply with general industrial hygiene practice guidelines.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 Information on basic physical and chemical properties

- a) Appearance : Colourless
- b) Physical states : Solid
- c) Odor : Odorless
- d) Odor threshold : Not available
- e) Melting point : 212 °C (414 °F)
- f) Boiling point range : 440 °C (824 °F) - Decomposes on heating
- g) pH : Not available
- h) Density : Not available
- i) Flash point : Not available
- j) Evaporation rate : Not available
- k) Flammability : Not available
- l) Upper/lower flammability or explosive limits: : Not available
- m) Vapor pressure : Not available
- n) Vapor density : Not available
- o) Relative density : 4.350 g/cm<sup>3</sup>
- p) Water solubility : Not available
- q) Partition coefficient:n-octanol/water : log Pow: 5
- r) Autoignition temperature : Not available
- s) Decomposition temperature : Not available
- t) Kinematic viscosity : Not available
- u) Explosive properties : Not available
- v) Oxidizing properties : The substance or mixture is classified as oxidizing with the category 2.
- w) Solubility in other solvents : Not available
- x) Surface tension : Not available

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## SECTION 10: STABILITY AND REACTIVITY

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### 10.1 Reactivity

No special reactivity is known.

## 10.2 Chemical stability

Decomposes on exposure to light. Product is stable when stored and used as recommended.

## 10.3 Stability note(s)

No special or unusual instability known.

## 10.4 Polymerization

No known polymerization.

## 10.5 Possibility of hazardous reactions

No hazardous reactions are known.

## 10.6 Incompatible materials

Strong oxidizing agents are incompatible with this product.

## 10.7 Hazardous decomposition products

Nitrogen oxides (NO<sub>x</sub>) and silver oxides can form if fire occurs.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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### 11.1 Acute toxicity

LD50 Oral : No toxicity data available.

LD50 Dermal : No toxicity data available.

LC50 Inhalation : No toxicity data available.

### 11.2 Skin corrosion/irritation

No skin/corrosion irritation data available.

### 11.3 Serious eye damage/eye irritation

Causes severe eye irritation (Rabbit)

### 11.4 Respiratory or skin sensitization

No sensitization data available.

### 11.5 Germ cell mutagenicity

No mutagenicity data available.

### 11.6 Carcinogenicity

IARC : Product and components are not regulated by the IARC.

ACGIH : Product and components are not regulated by the ACGIH.

NTP : Product and components are not regulated by the NTP.

OSHA : Product and components are not regulated by OSHA.

### 11.7 Reproductive toxicity

No reproductive toxicity data available.

### 11.8 Specific target organ toxicity – single exposure

No specific organ toxicity data available.

### 11.9 Specific target organ toxicity – repeated exposure

No specific organ toxicity data available.

### 11.10 Aspiration hazard

No aspiration hazard data available.

### 11.11 Additional Information

RTECS: VW4725000.

May cause argyria (a slate-gray or bluish discoloration of the skin and deep tissues due to the deposit of insoluble albuminate of silver)., Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

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## SECTION 12: ECOLOGICAL INFORMATION

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### 12.1 Toxicity

No ecological toxicity data available.

### 12.2 Aquatic toxicity

Toxicity to fish semi-static test LC50 - Pimephales promelas (fathead minnow) - 0.0012 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 0.00121 mg/l - 48 h

Toxicity to algae EC50 - Pseudokirchneriella subcapitata (green algae) - 0.0099 mg/l - 96 h

### 12.3 Persistence and degradability

No persistence/degradability data available.

### 12.4 Bioaccumulative potential

Bioaccumulation Cyprinus carpio (Carp) - 41 d

Bioconcentration factor (BCF): 70

### 12.5 Mobility in soil

No soil mobility data available.

### 12.6 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

### 12.7 Other adverse effect

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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### 13.1 Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

### 13.2 Packaging

Packaging should be disposed of in the same manner as unused product.

### 13.3 Recommendation

Disposal must be made according to official regulations.

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## SECTION 14: TRANSPORTATION INFORMATION

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### 14.1 DOT (US)

UN# 1493  
Class: 5.1  
Packing group: II  
Proper shipping name: Silver nitrate  
Reportable Quantity (RQ): 1 lbs  
Poison Inhalation Hazard: No

**14.2 IMDG**

UN# 1493  
Class: 5.1  
Packing group: II  
EMS-No: F-A, S-Q  
Proper shipping name: SILVER NITRATE  
Marine pollutant: Yes

**14.3 IATA**

UN# 1493  
Class: 5.1  
Packing group: II  
Proper shipping name: Silver nitrate

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**SECTION 15: REGULATORY INFORMATION**

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**15.1 SARA**

SARA 302: This product and components are not subject to the reporting requirements of SARA Title III, Section 302.  
SARA 313: This product contains components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313:  
Silver nitrate CAS No.: 7761-88-8  
SARA 311/312: Reactivity Hazard, Acute Health Hazard

**15.2 Clean water act (CWA)**

No chemicals are present in this product that are subject to regulation under the Clean Water Act.

**15.3 Right to know components**

Massachusetts : Silver nitrate CAS No.: 7761-88-8

Pennsylvania : Silver nitrate CAS No.: 7761-88-8

New Jersey : Silver nitrate CAS No.: 7761-88-8

California : This product does not contain any chemicals known to State of California to  
proposition 65 cause cancer, birth defects, or any other reproductive harm.  
components

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**SECTION 16: OTHER INFORMATION**

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**16.1 Disclaimer**



This product is offered by bioWORLD for research, laboratory or further manufacturing use. Not for human use or consumption. The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchant-ability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall bio-WORLD.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if bio-WORLD.com has been advised of the possibility of such damages.

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## **16.2 Preparation Information**

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