

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING**GHS product identifier****Product Name** S1 Enzyme + Buffer mixture**Other means of identification****Product Code(s)** 10030500**Synonyms** None**Recommended use of the chemical and restrictions on use****Recommended Use** General Laboratory Use**Uses advised against** No information available**Supplier's details****Supplier Address**HTG Molecular Diagnostics Inc.
3430 E. Global Loop
Tucson, AZ 85706
TEL: (520) 547-2827
FAX: (520) 547-2837**Emergency telephone number****Emergency Telephone Number** CHEMTREC: 1-800-424-9300 for US/ 703-527-3887 outside US**2. HAZARDS IDENTIFICATION****Classification**

This chemical is not considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

Not classified

GHS Label elements, including precautionary statements**Emergency Overview****Signal Word** None
Hazard Statements
• None**Appearance** Colorless, clear **Physical State** Liquid. **Odor** None3430 E. Global Loop | Tucson, AZ 85706 | (877) 289-2615 | htgmolecular.com

Precautionary Statements**Prevention**

- None

General Advice

- None

Storage

- None

Disposal

- None

Hazard Not Otherwise Classified (HNOC)

Not applicable

Other information

Harmful to aquatic life with long lasting effects

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade secret
Zinc sulfate	7733-02-0	0.1-1	*

**The exact percentage (concentration) of composition has been withheld as a trade secret.*

4. FIRST AID MEASURES**Description of necessary first-aid measures****Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If irritation persists, call a physician.

Skin Contact

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Inhalation

Move to fresh air. If symptoms persist, call a physician.

Ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Clean mouth with water and afterwards drink plenty of water.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects No information available.

Indication of immediate medical attention and special treatment needed, if necessary**Notes to Physician**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Water spray.

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Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical

Emits toxic fumes under fire conditions.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

Environmental Precautions

Environmental Precautions Should not be released into the environment.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or mists.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed. Store at -20 Celsius Bring to room temperature before opening.

Incompatible Products Strong oxidizing agents. Strong bases.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

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Individual protection measures, such as personal protective equipment**Eye/Face Protection
Skin and Body Protection
Respiratory Protection**

Safety glasses with side-shields.
Protective gloves. Long sleeved clothing.
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Keep away from food, drink and animal feeding stuffs. Wash hands before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical State	Liquid	Appearance	Colorless, clear
Odor	None	Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks/ - Method</u>
pH	4.20	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	No data available	None known
Flash Point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Relative Density	No data available	None known
Specific Gravity	No data available.	None known
Water Solubility	No data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known

Flammable Properties	Not flammable
Explosive Properties	No data available
Oxidizing Properties	No data available

Other information

VOC Content (%)	No data available
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10. STABILITY AND REACTIVITY**Reactivity**

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization does not occur.

Conditions to avoid

Heat.

Incompatible materials

Strong oxidizing agents. Strong bases.

Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information.
Inhalation	No known effect.
Eye Contact	No known effect.
Skin Contact	No known effect.
Ingestion	No known effect.

Component Information**Component Information**

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Zinc sulfate	= 500 mg/kg (Rat)	-	-

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	There are no known carcinogenic chemicals in this product.
Reproductive Toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration Hazard	No information available.

Numerical measures of toxicity - Product

Acute Toxicity No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects.

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Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Zinc sulfate	EC50 72 h: = 0.056 mg/L static (Pseudokirchneriella subcapitata) EC50 96 h: = 2.4 mg/L (Chlorella vulgaris) EC50 72 h: = 64.8 mg/L (Chlorella vulgaris)	LC50 96 h: 0.03-0.05 mg/L semi-static (Oncorhynchus mykiss) LC50 96 h: 0.168-0.25 mg/L semi-static (Pimephales promelas) LC50 96 h: 0.218-0.42 mg/L flow-through (Pimephales promelas) LC50 96 h: 0.23-0.48 mg/L (Pimephales promelas) LC50 96 h: 0.34-0.93 mg/L static (Oncorhynchus mykiss) LC50 96 h: 0.48-1.72 mg/L static (Poecilia reticulata) LC50 96 h: 16.85-27.18 mg/L static (Cyprinus carpio) LC50 96 h: 3-4.6 mg/L flow-through (Lepomis macrochirus) LC50 96 h: 3.55-6.32 mg/L static (Lepomis macrochirus) LC50 96 h: 49.23-64.16 mg/L semi-static (Poecilia reticulata) LC50 96 h: = 0.06 mg/L static (Pimephales promelas) LC50 96 h: = 0.15 mg/L semi-static (Cyprinus carpio) LC50 96 h: = 0.162 mg/L flow-through (Oncorhynchus mykiss) LC50 96 h: = 0.63 mg/L (Poecilia reticulata)	EC50 = 3.45 mg/L 15 min EC50 = 40.5 mg/L 30 min EC50 = 476 mg/L 5 min EC50 > 700 mg/L 16 h	EC50 48 h: 0.538 - 0.908 mg/L Static (Daphnia magna) EC50 48 h: = 0.75 mg/L (Daphnia magna)

Persistence and Degradability No information available.

Bioaccumulation No information available.

Other Adverse Effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Do not re-use empty containers.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Zinc sulfate	Toxic

14. TRANSPORT INFORMATION

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DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
ICAO	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated
RID	Not regulated
ADR	Not regulated
ADN	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	This product contains ingredients which are not listed on the TSCA Inventory. It is for research and development purposes only.
DSL	Not listed

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Zinc sulfate	7733-02-0	1	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Zinc sulfate	1000 lb	X		X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Zinc sulfate	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

U.S. State Regulations

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California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Zinc sulfate	X	X	X		

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	Health Hazard 0	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 0	Flammability 0	Physical Hazard 0	Personal Protection X

Prepared By Product Stewardship
 23 British American Blvd.
 Latham, NY 12110
 1-800-572-6501

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General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet