



SAFETY DATA SHEET

Revision Date 10-Dec-2020

WAI1 - AGHS - OSHA

Revision Number 5

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name Optimum Results™ B Reference Filling Solution
Product No 900062
Pure substance/mixture Mixture

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

Recommended Use Use as laboratory reagent
Uses advised against No Information available
Manufacturer, Importer, Supplier Thermo Fisher Scientific©
Water and Lab Products
22 Alpha Road
Chelmsford, MA 01824, USA
1-978-232-6000
Emergency Telephone 24 Hour Emergency Phone Number
CHEMTREC®
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: 1-703-527-3887
(collect calls accepted)
E-mail address info.water@thermo.com
Made in USA

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

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

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label Elements

Emergency Overview

The product contains no substances which at their given concentration, are considered to be hazardous to health

Appearance Clear

Physical State Liquid

Odor None

Precautionary Statements

Hazards not otherwise classified (HNOC)

No information available

Other Information

Toxic to aquatic life with long lasting effects

Toxic to aquatic organisms

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Water	7732-18-5	75 - 90%
Potassium Nitrate	7757-79-1	1 - 10%
Potassium Chloride	7447-40-7	0.1 - 1.0%
Triton™ X-100	9002-93-1	<0.1%
Silver Nitrate	7761-88-8	<0.1%

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

4. FIRST AID MEASURES

First aid measures

General Advice

Use first aid treatment according to the nature of the injury. Get medical attention immediately if symptoms occur. Show this safety data sheet to the doctor in attendance.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
Self-Protection of the First Aider	No special precautions required.

Most important symptoms and effects, both acute and delayed

Most important symptoms and effects	None reasonably foreseeable
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available

Specific Hazards Arising from the Chemical

No information available.

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	Ensure adequate ventilation. Use personal protective equipment as required.
<u>Environmental Precautions</u>	Should not be released into the environment. See Section 12 for additional Ecological Information. Vapors may accumulate to form explosive concentrations.

Methods and Material 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/face protection Ensure adequate ventilation Avoid contact with skin, eyes or clothing Avoid ingestion and inhalation
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Conditions for Safe Storage, Including any Incompatibilities

Storage Keep container tightly closed in a dry and well-ventilated place
Store at room temperature in the original container
Protect from direct sunlight

Incompatible Products No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Silver Nitrate 7761-88-8	TWA: 0.01 mg/m ³	(Vacated) TWA: 0.01 mg/m ³	IDLH: 10 mg/m ³ TWA: 0.01 mg/m ³

Legend

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value

OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits

NIOSH - National Institute for Occupational Safety and Health IDLH - Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Measures None under normal use conditions

Individual protection measures, such as personal protective equipment

Eye/face Protection Wear chemical splash goggles and face shield. If splashes are likely to occur: Face protection shield.

Skin and Body Protection Wear protective gloves/protective clothing.

Respiratory Protection None under normal use conditions. In case of inadequate ventilation wear respiratory protection.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Clear
Odor	None
Odor Threshold	No information available
pH	6.5
PH Range	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point/freezing point	No information available	
Boiling Point/Range	100 °C / 212 °F	
Flash Point (High in °C)	N/A	
Evaporation Rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	

Vapor Density	No information available
Specific Gravity	No information available
Water Solubility	Soluble
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition Temperature	-
Decomposition Temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Explosive Properties	No information available
Oxidizing Properties	No information available

Other Information

Softening Point	No information available
Molecular Weight	No information available
VOC Content(%)	No information available
Density	No Information available
Bulk Density	No information available

10. STABILITY AND REACTIVITY

Reactivity

No Information available

Chemical Stability

Stable under normal conditions

Possibility of Hazardous Reactions

None under normal processing

Conditions to Avoid

Extremes of temperature and direct sunlight.

Incompatible Materials

No information available

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	No information available
Eye Contact	No information available
Skin Contact	No information available
Ingestion	No information available

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water 7732-18-5	LD50 > 90 mL/kg (Rat)	-	-
Potassium Nitrate 7757-79-1	LD50 = 3015 mg/kg (Rat)	-	-
Potassium Chloride 7447-40-7	LD50 = 2600 mg/kg (Rat)	-	-

Triton™ X-100 9002-93-1	LD50 = 1800 mg/kg (Rat)	-	-
Silver Nitrate 7761-88-8	LD50 = 1173 mg/kg (Rat)	-	-

Information on Toxicological Effects

Symptoms No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available

Mutagenic Effects No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed
Potassium Nitrate	7757-79-1	Not listed	Not listed	Not listed	Not listed
Potassium Chloride	7447-40-7	Not listed	Not listed	Not listed	Not listed
Triton™ X-100	9002-93-1	Not listed	Not listed	Not listed	Not listed
Silver Nitrate	7761-88-8	Not listed	Not listed	Not listed	Not listed

Reproductive Effects 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 Information

The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 27017 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Component	Freshwater Algae	Freshwater Fish	Water Flea
Potassium Chloride 7447-40-7	EC50: = 2500 mg/L, 72h (Desmodesmus subspicatus)	LC50: = 1060 mg/L, 96h static (Lepomis macrochirus) LC50: 750 - 1020 mg/L, 96h static (Pimephales promelas)	EC50: = 83 mg/L, 48h Static (Daphnia magna) EC50: = 825 mg/L, 48h (Daphnia magna)
Silver Nitrate 7761-88-8	-	LC50: 0.009 - 0.02 mg/L, 96h flow-through (Lepomis macrochirus) LC50: 0.00512 - 0.00787 mg/L, 96h semi-static (Poecilia reticulata) LC50: = 0.0027 mg/L, 96h semi-static (Cyprinus carpio) LC50: = 0.009 mg/L, 96h (Pimephales promelas) LC50: 0.0064 - 0.0106 mg/L, 96h semi-static (Pimephales promelas) LC50: 0.00181 - 0.00214 mg/L, 96h static (Pimephales promelas) LC50: 0.00452 - 0.00638 mg/L, 96h flow-through (Pimephales promelas) LC50: 0.00839 - 0.1802 mg/L, 96h	EC50: 0.0008 - 0.0011 mg/L, 48h Static (Daphnia magna) EC50: 0.0008 - 0.001 mg/L, 48h Flow through (Daphnia magna) EC50: = 0.0006 mg/L, 48h (Daphnia magna)

		static (Oncorhynchus mykiss) LC50: = 0.0075 mg/L, 96h semi-static (Oncorhynchus mykiss) LC50: 0.001339 - 0.001637 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 0.05 - 0.07 mg/L, 96h static (Lepomis macrochirus) LC50: 0.0242 - 0.0484 mg/L, 96h semi-static (Lepomis macrochirus)	
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Persistence and Degradability

Bioaccumulation/ Accumulation

No information available

Mobility

Will likely be mobile in the environment due to its water solubility

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Methods

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Improper disposal or reuse of this container may be dangerous and illegal

Component	CAWAST
Potassium Nitrate 7757-79-1	Ignitable Reactive
Silver Nitrate 7761-88-8	Toxic

14. TRANSPORT INFORMATION

DOT

UN-No UN3082
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name Silver Nitrate
Hazard Class 9
Packing Group III
Reportable Quantity (RQ): (Silver Nitrate: RQ (kg)= 0.454)
Special Provisions 8, 146, 173, 335, IB3, T4, TP1, TP29
Shipping Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver Nitrate), 9, III, Marine Pollutant
Emergency Response Guide Number 171

ICAO

UN-No UN3082
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name Silver Nitrate
Hazard Class 9

Packing Group III
Special Provisions A97, A158, A197
Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver Nitrate), 9, III

IATA

UN-No UN3082
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name Silver Nitrate
Hazard Class 9
Packing Group III
ERG Code 9L
Special Provisions A97, A158, A197
Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver Nitrate), 9, III

IMDG/IMO

UN-No UN3082
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name Silver Nitrate
Hazard Class 9
Packing Group III
EmS No. F-A, S-F
Special Provisions 274, 335, 969
Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Silver Nitrate), 9, III, Marine Pollutant

15. REGULATORY INFORMATION

International Inventories

United States of America Inventory Complies
CANINV Complies
EINECS/ELINCS Does not Comply
ENCS Does not Comply
IECSC Complies
KECL Complies
PICCS Complies
AICS Complies

Legend:

USINV/ TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
CANINV/ DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

U.S. Federal Regulations

SARA 313

Component	Weight %	SARA 313 - Threshold Values %
Potassium Nitrate - 7757-79-1	8-12	1.0

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

CWA (Clean Water Act)

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Silver Nitrate 7761-88-8	1 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)

Component	Hazardous Substances RQs	CERCLA EHS RQs	RQ
Silver Nitrate 7761-88-8	1 lb	-	RQ 1 lb final RQ RQ 0.454 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Component	New Jersey	Massachusetts	Pennsylvania
Water 7732-18-5	-	-	X
Potassium Nitrate 7757-79-1	X	X	X
Silver Nitrate 7761-88-8	X	X	X

U.S. EPA Label Information

No information available

16. OTHER INFORMATION

Prepared By Regulatory Affairs
Prepared For Thermo Fisher Scientific Inc.©
Issue Date No information available
Revision Date 10-Dec-2020
Reason for revision Update to GHS format.

Disclaimer

IMPORTANT: The information contained in this SDS is correct to the best of our knowledge as of the issue date (or subsequent revision date, if any), and is to be used only as a guide. This SDS does not constitute a guarantee (express or implied) of any kind and we make no warranties of any kind as to the accuracy or completeness of the information contained herein or the merchantability or fitness of the product or this information for a particular purpose. It is the responsibility of each individual buyer/user to determine the suitability of this information and the product for its intended purposes. Product sales are subject to Thermo Fisher Scientific's standard terms and conditions of sale. This information relates only to the designated product as shipped and may not be valid if the product is used in combination with any other materials or is not used in accordance with our instructions, or is altered in any way. It is the responsibility of the buyer/user to ensure that its activities comply with all applicable government requirements. Since conditions of use of the product are not under direct control of Thermo Fisher Scientific, it is the duty of the buyer/user to determine the necessary conditions for the safe use of the product. Thermo Fisher Scientific will not be liable for any injuries or damages resulting from handling, use, misuse or contact with the product.

End of Safety Data Sheet

