

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

**Product Identifier**

**Product Name** Optimum Results™ F Reference Filling Solution  
**Product No** 900046  
**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

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(collect calls accepted)

## 2. HAZARDS IDENTIFICATION

### Classification

#### **OSHA Regulatory Status**

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

### Label Elements

#### **Emergency Overview**

#### **Hazard Statements**

Toxic to aquatic life with long lasting effects



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

#### **Prevention**

Avoid release to the environment

Collect spillage

#### **Disposal**

Dispose of contents/container to an approved waste disposal plant

#### **Hazards not otherwise classified (HNOC)**

No information available

#### **Other Information**

Toxic to aquatic life with long lasting effects

Harmful to aquatic organisms

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Water	7732-18-5	70 - 80%
Ammonium Sulfate	7783-20-2	20 - 30%
Sodium Chloride	7647-14-5	<0.1%
Silver Chloride	7783-90-6	<0.1%

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

#### 4. FIRST AID MEASURES

##### First aid measures

<b>General Advice</b>	If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.
<b>Eye Contact</b>	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
<b>Skin Contact</b>	Remove and wash contaminated clothing before re-use. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Inhalation</b>	Move to fresh air. Consult a physician. If breathing is irregular or stopped, administer artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
<b>Ingestion</b>	Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do not induce vomiting.
<b>Self-Protection of the First Aider</b>	Use personal protective equipment.

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

<b>Most important symptoms and effects</b>	No information available
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##### Indication of any immediate medical attention and special treatment needed

<b>Notes to Physician</b>	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

<b>Personal Precautions</b>	Use personal protective equipment. For further specification, refer to section 8 of the SDS. Evacuate personnel to safe areas.
<b>Environmental Precautions</b>	Prevent entry into waterways, sewers, basements or confined areas. Do not flush into

surface water or sanitary sewer system. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

#### **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** Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers.

### **7. HANDLING AND STORAGE**

#### **Precautions for Safe Handling**

**Handling** Avoid contact with skin  
No information available  
Do not breathe dust  
Do not take internally  
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors)

#### **Conditions for Safe Storage, Including any Incompatibilities**

**Storage** Keep container tightly closed in a dry and well-ventilated place  
Keep out of the reach of children

**Incompatible Products** No information available

### **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### **Control parameters**

**Exposure Guidelines** This product does not contain any known or suspected reproductive hazards.  
**Appropriate engineering controls**

**Engineering Measures** Showers  
Eyewash stations  
Ventilation systems

#### **Individual protection measures, such as personal protective equipment**

**Eye/face Protection** Tightly fitting safety goggles.

**Skin and Body Protection** Wear protective gloves/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** 6.4  
**PH Range** 4.3 - 8.5

<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 in water	
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

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### 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

<b>Inhalation</b>	No information available
<b>Eye Contact</b>	No information available
<b>Skin Contact</b>	No information available
<b>Ingestion</b>	No information available

**Information on Toxicological Effects**

**Symptoms** No information available

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

<b>Sensitization</b>	No information available
<b>Mutagenic Effects</b>	No information available
<b>Carcinogenicity</b>	No information available.
<b>Reproductive Effects</b>	No information available
<b>STOT - single exposure</b>	No information available
<b>STOT - repeated exposure</b>	No information available
<b>Aspiration hazard</b>	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) 10923 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
Ammonium Sulfate 7783-20-2	-	LC50: = 18 mg/L, 96h (Cyprinus carpio) LC50: 32.2 - 41.9 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 5.2 - 8.2 mg/L, 96h static (Oncorhynchus mykiss) LC50: > 100 mg/L, 96h (Pimephales promelas) LC50: 123 - 128 mg/L, 96h semi-static (Poecilia reticulata) LC50: = 126 mg/L, 96h (Poecilia reticulata) LC50: 460 - 1000 mg/L, 96h static (Leuciscus idus) LC50: = 420 mg/L, 96h semi-static (Brachydanio rerio) LC50: = 250 mg/L, 96h (Brachydanio rerio) LC50: = 480 mg/L, 96h flow-through (Brachydanio rerio)	EC50: = 423 mg/L, 24h (Daphnia magna) LC50: = 14 mg/L, 48h (Daphnia magna)

Sodium Chloride 7647-14-5	-	LC50: = 12946 mg/L, 96h static (Lepomis macrochirus) LC50: 6020 - 7070 mg/L, 96h static (Pimephales promelas) LC50: = 7050 mg/L, 96h semi-static (Pimephales promelas) LC50: 6420 - 6700 mg/L, 96h static (Pimephales promelas) LC50: 4747 - 7824 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 5560 - 6080 mg/L, 96h flow-through (Lepomis macrochirus)	EC50: 340.7 - 469.2 mg/L, 48h Static (Daphnia magna) EC50: = 1000 mg/L, 48h (Daphnia magna)
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**Persistence and Degradability**

No information available

**Bioaccumulation/ Accumulation**

No information available

**Mobility**

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Component	log Pow
Ammonium Sulfate 7783-20-2	-5.1

**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.

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

Component	CAWAST
Silver Chloride 7783-90-6	Toxic

**14. TRANSPORT INFORMATION**

**DOT**

UN-No UN3082  
 Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
 Hazard Class 9  
 Packing Group III  
 Special Provisions 8, 146, 173, 335, IB3, T4, TP1, TP29  
 Shipping Description UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III  
 Emergency Response Guide Number 171

**ICAO**

UN-No UN3082

**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**Hazard Class** 9  
**Packing Group** III  
**Special Provisions** A97, A158, A197  
**Description** UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III

**IATA**

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

**IMDG/IMO**

**UN-No** UN3082  
**Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
**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 Chloride), 9, III, Marine Pollutant

**15. REGULATORY INFORMATION**

**International Inventories**

**USINV** Complies  
**CANINV** Complies  
**EINECS/ELINCS** Complies  
**ENCS** Complies  
**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**

**SARA 311/312 Hazard Categories**

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

**CWA (Clean Water Act)**

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Silver Chloride 7783-90-6	-	X	-	-

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**U.S. State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

**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** 27-Jul-2016  
**Reason for revision** SDS sections updated.

**Disclaimer**

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**End of Safety Data Sheet**