

# Safety Data Sheet

Issue Date: 20-Dec-2013

Revision Date: 27-Feb-2023

Version 1

## 1. IDENTIFICATION

### Product Identifier

**Product Name** AST-1

### Other means of identification

**SDS #** UO-002

### Recommended use of the chemical and restrictions on use

**Recommended Use** Optics Coating.

### Details of the supplier of the safety data sheet

#### **Manufacturer Address**

Ultra Optics Company  
9200 Wyoming Avenue N.  
Suite 360  
Brooklyn Park, MN 55455

#### **Emergency Telephone Number**

**Company Phone Number** 1-800-365-9993  
**Emergency Telephone (24 hr)** INFOTRAC 1-352-323-3500 (International)  
1-800-535-5053 (North America)

## 2. HAZARDS IDENTIFICATION

**Appearance** Clear liquid

**Physical State** Liquid

**Odor** Moderate solvent odor

### Classification

Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Reproductive toxicity	Category 2
Flammable Liquids	Category 4

### Hazards Not Otherwise Classified (HNOC)

May be harmful in contact with skin  
Causes mild skin irritation

### Signal Word

**Warning**

### Hazard Statements

Causes serious eye irritation  
May cause an allergic skin reaction  
Suspected of damaging fertility or the unborn child  
Causes skin irritation  
Combustible liquid



**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Contaminated work clothing must not be allowed out of the workplace  
Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

If exposed or concerned: Get medical advice/attention  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
IF ON SKIN: Wash with plenty of soap and water  
If skin irritation or rash occurs: Get medical advice/attention  
Wash contaminated clothing before reuse  
IN CASE OF FIRE: Use CO2, dry chemical, or foam for extinction

**Precautionary Statements - Storage**

Store locked up  
Store in a well-ventilated place. Keep cool

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Harmful to aquatic life

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No	Weight-%
Proprietary Silane monomers and oligomers	2530-83-8	65 - 80
1,6-Hexanediol diacrylate	13048-33-4	10 - 20
Propylene carbonate	108-32-7	<5
Bis[4-(diphenylsulfonio)phenyl]sulfide bis(hexafluorophosphate)	74227-35-3	<1
Diphenyl(4-phenylthio)phenylsulfonium hexafluorophosphate	71449-78-0	< 1
Proprietary solution of 2-hydroxy-2-methyl-1-phenyl- 1-propane	7473-98-5	< 1
Octamethylcyclotetrasiloxane	556-67-2	<5

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

**4. FIRST-AID MEASURES****First Aid Measures****General Advice**

Provide this SDS to medical personnel for treatment.

**Eye Contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

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	present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>Skin Contact</b>	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
<b>Inhalation</b>	Remove to fresh air. Seek medical attention if breathing becomes difficult or symptoms develop.
<b>Ingestion</b>	Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Most important symptoms and effects**

<b>Symptoms</b>	Causes serious eye irritation. May be harmful in contact with skin. Causes mild skin irritation. May cause an allergic skin reaction.
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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**

Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable Extinguishing Media** Not determined.

**Specific Hazards Arising from the Chemical**

Not determined.

**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 as required. Avoid contact with eyes and skin.
<b>Environmental Precautions</b>	See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up**

<b>Methods for Containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for Clean-Up</b>	Contain spilled material using absorbent material. Place absorbent material in clean container.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

<b>Advice on Safe Handling</b>	Handle in accordance with good industrial hygiene and safety practice. Obtain special instructions before use. Do not handle until all safety precautions have been read and
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understood. Use personal protective equipment as required. Wash face, hands, and any exposed skin thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Wear protective gloves/protective clothing and eye/face protection.

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

<b>Storage Conditions</b>	Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up. Store away from incompatible materials.
<b>Incompatible Materials</b>	Strong oxidizers. Water. Inert gases. Amines. Alkalis.

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

#### **Exposure Guidelines**

<b>Chemical Name</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>	<b>NIOSH IDLH</b>
Photo initiator 71449-78-0	TWA: 0.5 mg/m <sup>3</sup> Sb	TWA: 0.5 mg/m <sup>3</sup> Sb (vacated) TWA: 0.5 mg/m <sup>3</sup> Sb	IDLH: 50 mg/m <sup>3</sup> Sb TWA: 0.5 mg/m <sup>3</sup> Sb
Photo initiator 89452-37-9	TWA: 0.5 mg/m <sup>3</sup> Sb	TWA: 0.5 mg/m <sup>3</sup> Sb (vacated) TWA: 0.5 mg/m <sup>3</sup> Sb	IDLH: 50 mg/m <sup>3</sup> Sb TWA: 0.5 mg/m <sup>3</sup> Sb

#### **Appropriate engineering controls**

<b>Engineering Controls</b>	Apply technical measures to comply with the occupational exposure limits. Showers. Eyewash stations. Ventilation systems.
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#### **Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear appropriate chemical goggles. Refer to 29 CFR 1910.133 for eye and face protection regulations.
<b>Skin and Body Protection</b>	Wear suitable protective clothing.
<b>Respiratory Protection</b>	If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.
<b>General Hygiene Considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

### **9. PHYSICAL AND CHEMICAL PROPERTIES**

#### **Information on basic physical and chemical properties**

<b>Physical State</b>	Liquid	<b>Odor</b>	Moderate solvent odor
<b>Appearance</b>	Clear liquid	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Clear		
<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>	
pH	Not determined		
Melting Point/Freezing Point	Not determined		
Boiling Point/Boiling Range	Not determined		
Flash Point	> 60 °C / 140 °F		
Evaporation Rate	Not determined		
Flammability (Solid, Gas)	Not determined		
Upper Flammability Limits	Not determined		
Lower Flammability Limit	Not determined		
Vapor Pressure	Not determined		

<b>Vapor Density</b>	Not determined
<b>Specific Gravity</b>	Not determined
<b>Water Solubility</b>	Not determined
<b>Solubility in other solvents</b>	Not determined
<b>Partition Coefficient</b>	Not determined
<b>Auto-ignition Temperature</b>	Not determined
<b>Decomposition Temperature</b>	Not determined
<b>Kinematic Viscosity</b>	Not determined
<b>Dynamic Viscosity</b>	Not determined
<b>Explosive Properties</b>	Not determined
<b>Oxidizing Properties</b>	Not determined

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical Stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing.

#### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to Avoid

Excessive heat.

### Incompatible Materials

Strong oxidizers. Water. Inert gases. Amines. Alkalies.

### Hazardous Decomposition Products

Carbon oxides. By-products undetermined.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### **Product Information**

#### **Eye Contact**

Causes serious eye irritation.

#### **Skin Contact**

May be harmful in contact with skin. Causes mild skin irritation.

#### **Inhalation**

Do not inhale.

#### **Ingestion**

Do not ingest.

### Component Information

<b>Chemical Name</b>	<b>Oral LD50</b>	<b>Dermal LD50</b>	<b>Inhalation LC50</b>
Silane monomers and oligomers	= 22600 µL/kg ( Rat )	= 3970 µL/kg ( Rabbit )	-
Acrylate monomers	= 5 g/kg ( Rat )	= 3600 µL/kg ( Rabbit )	-
Octamethylcyclotetrasiloxane 556-67-2	= 1540 mg/kg ( Rat )	= 794 µL/kg ( Rabbit )	= 36 g/m <sup>3</sup> ( Rat ) 4 h

**Information on physical, chemical and toxicological effects**

**Symptoms** Please see section 4 of this SDS for symptoms.

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

**Sensitization** May cause an allergic skin reaction.

**Carcinogenicity** Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

**Reproductive toxicity** Suspected of damaging fertility or the unborn child.

**Numerical measures of toxicity**

Not determined

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Harmful to aquatic life.

**Component Information**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Acrylate monomers	500: 72 h Desmodesmus subspicatus mg/L EC50	1000: 96 h Cyprinus carpio mg/L LC50 semi-static 5300: 96 h Leuciscus idus mg/L LC50 static	EC50 > 10000 mg/L 17 h	500: 48 h Daphnia magna mg/L EC50
Octamethylcyclotetrasiloxane 556-67-2		500: 96 h Brachydanio rerio mg/L LC50 1000: 96 h Lepomis macrochirus mg/L LC50		25.2: 24 h Daphnia magna mg/L EC50

**Persistence/Degradability**

Not determined.

**Bioaccumulation**

Not determined.

**Mobility**

Chemical Name	Partition Coefficient
Acrylate monomers	0.48
Octamethylcyclotetrasiloxane 556-67-2	5.1

**Other Adverse Effects**

Not determined

**13. DISPOSAL CONSIDERATIONS****Waste Treatment Methods**

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

**Contaminated Packaging**

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

**California Hazardous Waste Status**

Chemical Name	California Hazardous Waste Status
Photo initiator 71449-78-0	Toxic
Photo initiator 89452-37-9	Toxic

**14. TRANSPORT INFORMATION****Note**

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

**DOT**

Not regulated

**IATA**

Not regulated

**IMDG**

Not regulated

**15. REGULATORY INFORMATION****International Inventories**

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Acrylate monomers	Present	X		Present		Present	X	Present	X	X
Photo initiator 71449-78-0	Present		X				X		X	X
Octamethylcyclotetrasiloxane 556-67-2	Present	X		Present		Present	X	Present	X	X

**Legend:**

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

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

*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

*ENCS - Japan Existing and New Chemical Substances*

*IECSC - China 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*

**US Federal Regulations****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).

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**CWA (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
Photo initiator 71449-78-0		X		
Photo initiator 89452-37-9		X		

**US State Regulations****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
Photo initiator 71449-78-0	X		X
Photo initiator 89452-37-9	X		X

<b>16. OTHER INFORMATION</b>
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**NFPA****Health Hazards****Flammability****Instability****Special Hazards****HMIS****Health Hazards****Flammability****Physical Hazards****Personal Protection**

Not determined

Not determined

Not determined

Not determined

Issue Date:

27-Feb-2023

Revision Date:

12-Oct-2020

Revision Note:

New format

**Disclaimer**

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet