

Safety Data Sheet

Issue Date: 03-Apr-2019

Revision Date: 04-Apr-2019

Version 1

1. IDENTIFICATION

Product identifier

Product Name AST-2

Other means of identification

SDS # UO-013

Recommended use of the chemical and restrictions on use

Recommended Use For industrial use. (this is a developmental product-for R&D use only).

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 INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Physical state Liquid

Classification

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Reproductive toxicity	Category 2
Flammable liquids	Category 4

Signal Word

Danger

Hazard statements

Harmful if swallowed
Causes severe skin burns and eye damage
May cause an allergic skin reaction
Suspected of damaging fertility or the unborn child
Combustible liquid



Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Wear protective gloves/protective clothing/eye protection/face protection
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Do not breathe dust/fume/gas/mist/vapors/spray
 Contaminated work clothing must not be allowed out of the workplace

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
 Immediately call a POISON CENTER or doctor
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 If skin irritation or rash occurs: Get medical advice/attention
 Wash contaminated clothing before reuse
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Immediately call a poison center or doctor/physician
 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
 Rinse mouth
 Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards

Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
(3-Glycidyloxypropyl)trimethoxysilane	2530-83-8	55-75
1,6-Hexanediol diacrylate	13048-33-4	10-15
Octamethylcyclotetrasiloxane	556-67-2	<5
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate	71449-78-0	<5
Propylene carbonate	108-32-7	<3

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

Description of first aid measures

General Advice	Immediately call a poison center or doctor/physician.
Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin Contact	Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Immediately call a poison center or doctor/physician.

Ingestion

Call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed**Symptoms**

May be harmful in contact with skin. Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of causing genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child.

Indication of any immediate medical attention and special treatment needed**Notes to Physician**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

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

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**Personal Precautions**

Use personal protective equipment as required.

Environmental precautions**Environmental precautions**

See Section 12 for additional Ecological Information.

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

Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up

Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling**Advice on Safe Handling**

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 understood. Use personal protective equipment as required. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves.

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

Store locked up.

Incompatible Materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroantimonate 71449-78-0	TWA: 0.5 mg/m ³ Sb	TWA: 0.5 mg/m ³ Sb (vacated) TWA: 0.5 mg/m ³ Sb	IDLH: 50 mg/m ³ Sb TWA: 0.5 mg/m ³ Sb
(Thiodi-4,1-phenylene)bis(diphenylsulfonium) 89452-37-9	TWA: 0.5 mg/m ³ Sb	TWA: 0.5 mg/m ³ Sb (vacated) TWA: 0.5 mg/m ³ Sb	IDLH: 50 mg/m ³ Sb TWA: 0.5 mg/m ³ Sb

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles).

Skin and Body Protection Refer to 29 CFR 1910.138 for appropriate skin and body protection.

Respiratory Protection Refer to 29 CFR 1910.134 for respiratory protection requirements.

General Hygiene Considerations 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	Odor	Not determined
Appearance	Not determined	Odor Threshold	Not determined
Color	Not determined		
Property	Values	Remarks • Method	
pH	Not determined		
Melting point / freezing point	Not determined		
Boiling point / boiling range	Not determined		
Flash point	60 °C / 140 °F	Pensky-Martens Closed Cup (PMCC)	
Evaporation Rate	Not determined		
Flammability (Solid, Gas)	Liquid - Not Applicable		
Flammability Limit in Air			
Upper flammability or explosive limits	Not determined		
Lower flammability or explosive limits	Not determined		
Vapor Pressure	<1mmHg		
Vapor Density	1	(at 20°C/68°F)	
Relative Density	Not determined		
Water Solubility	Insoluble in water		
Solubility in other solvents	Not determined		
Partition Coefficient	Not determined		
Autoignition temperature	Not determined		
Decomposition temperature	Not determined		
Kinematic viscosity	Not determined		
Dynamic Viscosity	Not determined		
Explosive Properties	Not determined		

Oxidizing Properties 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.

Conditions to Avoid

Keep out of reach of children.

Incompatible materials

None known based on information supplied.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes severe eye damage.

Skin Contact Causes severe skin burns.

Inhalation Do not inhale.

Ingestion Harmful if swallowed.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
(3-Glycidyloxypropyl)trimethoxysilane 2530-83-8	= 7.01 g/kg (Rat) = 22600 µL/kg (Rat)	= 3970 µL/kg (Rabbit)	> 5.3 mg/L (Rat) 4 h
1,6-Hexanediol diacrylate 13048-33-4	= 5 g/kg (Rat)	= 3600 mg/kg (Rabbit) = 3600 µL/kg (Rabbit)	-
Octamethylcyclotetrasiloxane 556-67-2	= 1540 mg/kg (Rat)	= 794 µL/kg (Rabbit)	= 36 g/m ³ (Rat) 4 h
Propylene carbonate 108-32-7	= 29000 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	-

Symptoms related to the physical, chemical and toxicological characteristics

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

Carcinogenicity May cause cancer.

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

Oral LD50 439.00 mg/kg
 Dermal LD50 2,493.74 mg/kg
 ATEmix (inhalation-dust/mist) 37.50 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Component Information

Chemical name	Algae/aquatic plants	Fish	Crustacea
Octamethylcyclotetrasiloxane 556-67-2		1000: 96 h Lepomis macrochirus mg/L LC50 500: 96 h Brachydanio rerio mg/L LC50	25.2: 24 h Daphnia magna mg/L EC50
Propylene carbonate 108-32-7	500: 72 h Desmodesmus subspicatus mg/L EC50	5300: 96 h Leuciscus idus mg/L LC50 static 1000: 96 h Cyprinus carpio mg/L LC50 semi-static	500: 48 h Daphnia magna mg/L EC50

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Chemical name	Partition coefficient
Octamethylcyclotetrasiloxane 556-67-2	5.1
Propylene carbonate 108-32-7	0.48

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
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate 71449-78-0	Toxic

14. TRANSPORT INFORMATION

- Note** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.
- DOT** Please contact manufacturer for most current information
- IATA** Please contact manufacturer for most current information
- IMDG** Please contact manufacturer for most current information

15. REGULATORY INFORMATION

International Inventories

Chemical name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
(3-Glycidyoxypropyl)trimethoxy silane	X	X	X	X	X	X	X	X
1,6-Hexanediol diacrylate	X	X	X	X	X	X	X	X
Tris(2-acryloyloxyethyl) Isocyanurate	X	X	X	X	X		X	X
Octamethylcyclotetrasiloxane	X	X	X	X	X	X	X	X
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate	X	X			X		X	X
Propylene carbonate	X	X	X	X	X	X	X	X
(Thiodi-4,1-phenylene)bis(diphenylsulfonium)	X	X			X		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 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 %
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate - 71449-78-0	71449-78-0	<5	1.0
(Thiodi-4,1-phenylene)bis(diphenylsulfonium) - 89452-37-9	89452-37-9	Proprietary	1.0

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
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate		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
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate 71449-78-0	X		X
(Thiodi-4,1-phenylene)bis(diphenylsulfonium) 89452-37-9	X		X

16. OTHER INFORMATION

NFPA	Health Hazards	Flammability	Instability	Special Hazards
	Not determined	Not determined	Not determined	Not determined
HMIS	Health Hazards	Flammability	Physical hazards	Personal Protection
	Not determined	Not determined	Not determined	Not determined

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 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