

Safety Data Sheet

Issue Date: 20-Dec-2013

Revision Date: 30-Nov-2015

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
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 should 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 Material B	Proprietary	5-10
Proprietary Material D	Proprietary	1-5
Proprietary Material F	Proprietary	<1
Proprietary Material H	Proprietary	<1

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 present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Skin Contact	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.
Inhalation	Remove to fresh air. Seek medical attention if breathing becomes difficult or symptoms develop.
Ingestion	Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Most important symptoms and effects

Symptoms Causes serious eye irritation. May be harmful in contact with skin. Causes mild skin irritation. May cause an allergic skin reaction.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon dioxide (CO2). 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

Personal Precautions Use personal protective equipment as required. Avoid contact with eyes and skin.

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 Contain spilled material using absorbent material. Place absorbent material in clean container.

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. 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

Storage Conditions Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up. Store away from incompatible materials.

Incompatible Materials Strong oxidizers. Water. Inert gases. Amines. Alkalis.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Proprietary Material F	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
Proprietary Material G	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. Showers. Eyewash stations. Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Wear appropriate chemical goggles. Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection Wear suitable protective clothing.

Respiratory Protection If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

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	Moderate solvent odor
Appearance	Clear liquid	Odor Threshold	Not determined
Color	Clear		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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	
Flammability Limits in Air		
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	Not determined	
Water Solubility	Not determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition 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.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Excessive heat.

Incompatible Materials

Strong oxidizers. Water. Inert gases. Amines. Alkalis.

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

Chemical Name	ATEmix (oral)	ATEmix (dermal)	Inhalation LC50
Proprietary Material A	= 22600 µL/kg (Rat)	= 3970 µL/kg (Rabbit)	-
Proprietary Material B	= 5 g/kg (Rat)	= 3600 µL/kg (Rabbit)	-
Proprietary Material C	-	> 13 g/kg (Rabbit)	-
Proprietary Material D	= 29000 mg/kg (Rat)	> 20 mL/kg (Rabbit)	-
Proprietary Material H	= 1540 mg/kg (Rat)	= 794 µL/kg (Rabbit)	= 36 g/m ³ (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

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

ATEmix (oral) 18,181.00 mg/kg
ATEmix (dermal) 4,366.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Proprietary Material D	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
Proprietary Material H		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
Proprietary Material D	0.48
Proprietary Material H	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
Proprietary Material F	Toxic
Proprietary Material G	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/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
Proprietary Material A	X	X	X	Present	X	Present	X	X
Proprietary Material B	X	X	X	Present	X	Present	X	X
Proprietary Material C	X	X	X		X	Present	X	X
Proprietary Material D	X	X	X	Present	X	Present	X	X
Proprietary Material E	X	X	X	Present	X	Present	X	X
Proprietary Material F	X	X			X		X	X
Proprietary Material G	X	X			X		X	X
Proprietary Material H	X	X	X	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
Proprietary Material F		X		
Proprietary Material G		X		

US State Regulations

California Proposition 65

This product may contain a trace amount of one or more of the chemicals on the California list of known carcinogens or substances known to cause birth defects or other reproductive harm. These are not added to the product but occur naturally in the raw materials or processing equipment. Methanol, Toluene.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Proprietary Material F	X		X
Proprietary Material G	X		X

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards
	Not determined	Not determined	Not determined	Not determined
<u>HMIS</u>	Health Hazards	Flammability	Physical hazards	Personal Protection
	Not determined	Not determined	Not determined	Not determined

Issue Date: 20-Dec-2013
 Revision Date: 30-Nov-2015
 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