Safety Data Sheet

Issue Date: 22-Mar-2021 **Revision Date:** 22-Mar-2021 **Version** 1

1. IDENTIFICATION

Product identifier

Product Name UV-AF

Other means of identification

SDS # UO-015

UN/ID No UN1760

Recommended use of the chemical and restrictions on use

Recommended Use Permanent anti-fog coating for ophthalmic lenses.

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

Appearance Clear liquid **Physical state** Liquid **Odor** Moderate glycol odor

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 1 Sub-category C
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Flammable liquids	Category 4

Signal Word

Danger

Hazard statements
Harmful if swallowed
Harmful in contact with skin
Harmful if inhaled
Causes severe skin burns and eye damage
May cause an allergic skin reaction
Suspected of causing genetic defects
May cause cancer
May damage fertility or the unborn child
May cause drowsiness or dizziness
Causes damage to organs through prolonged or repeated exposure
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
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Contaminated work clothing must not be allowed out of the workplace
Wear protective gloves
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep cool

Precautionary Statements - Response
Immediately call a poison center or doctor/physician
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/physician
IF ON SKIN (or hair): 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
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a poison center or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting
In case of fire: Use CO_2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

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-%
2-Butoxyethanol	111-76-2	15-25
1-Methoxy-2-propanol	107-98-2	15-25
Glycidyl methacrylate	106-91-2	5-10
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	5-10
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate	71449-78-0	2-6
(Thiodi-4,1-phenylene)bis(diphenylsulfonium)	89452-37-9	2-6

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 Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child. May cause drowsiness or dizziness. Causes damage to organs through prolonged or repeated exposure.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use CO2, dry chemical, or foam for extinction.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical
Combustible liquid.

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 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. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep cool.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store locked up. Store in a well-ventilated place. Keep container tightly closed.

Incompatible Materials Strong oxidizing agents. Water. Inert gases. Amines. Alkalis.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
1-Methoxy-2-propanol 107-98-2	STEL: 100 ppm TWA: 50 ppm	(vacated) TWA: 100 ppm (vacated) TWA: 360 mg/m^3 (vacated) STEL: 150 ppm (vacated) STEL: 540 mg/m^3	TWA: 100 ppm TWA: 360 mg/m^3 STEL: 150 ppm STEL: 540 mg/m^3
2-Butoxyethanol 111-76-2	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/m^3 (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/m^3 (vacated) S* S*	IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/m^3
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate 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. 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. Refer to 29 CFR 1910.138 for appropriate skin and body protection.
Respiratory Protection	If airborne concentrations are above the applicable exposure limits, use NIOSH approved 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		
Appearance	Clear liquid	**Odor**	Moderate glycol odor
Color	Not determined	**Odor Threshold**	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	
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	Not determined	
Vapor Density	Not determined	
Relative Density	Not determined	
Water Solubility	Not determined	
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.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
Excessive heat.

Incompatible materials
Strong oxidizing agents. 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 Avoid contact with eyes.

Skin Contact Harmful in contact with skin.

Inhalation Harmful if inhaled.

Ingestion Harmful if swallowed.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
1-Methoxy-2-propanol 107-98-2	= 5000 mg/kg (Rat)	= 13 g/kg (Rabbit)	> 7559 ppm (Rat) 6 h
2-Butoxyethanol 111-76-2	= 470 mg/kg (Rat)	= 435 mg/kg (Rabbit)	= 486 ppm (Rat) 4 h = 450 ppm (Rat) 4 h
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane 2530-83-8	= 7.01 g/kg (Rat) = 22600 µL/kg (Rat)	= 3970 µL/kg (Rabbit)	> 5.3 mg/L (Rat) 4 h
Glycidyl methacrylate 106-91-2	= 500 mg/kg (Rat)	= 470 mg/kg (Rabbit) = 450 µL/kg (Rabbit)	= 45 ppm (Rat) 4 h

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

Skin corrosion/irritation Causes severe skin burns.

Serious eye damage/eye irritation Causes severe eye damage.

Sensitization May cause an allergic skin reaction.

Germ cell mutagenicity Suspected of causing genetic defects.

Carcinogenicity May cause cancer.

Chemical name	ACGIH	IARC	NTP	OSHA
2-Butoxyethanol 111-76-2	A3	Group 3		

Legend
ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)

Group 3 IARC components are "not classifiable as human carcinogens"

Reproductive toxicity May damage fertility or the unborn child.

STOT - single exposure May cause drowsiness or dizziness.

STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Numerical measures of toxicity

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

Oral LD50	763.10 mg/kg
Dermal LD50	1,565.27 mg/kg
Gas	5,210.90 mg/L
ATEmix (inhalation-dust/mist)	3.21 mg/L
ATEmix (inhalation-vapor)	10.1 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Component Information

Chemical name	Algae/aquatic plants	Fish	Crustacea
1-Methoxy-2-propanol 107-98-2		20.8: 96 h Pimephales promelas g/L LC50 static 4600 - 10000: 96 h Leuciscus idus mg/L LC50 static	23300: 48 h Daphnia magna mg/L EC50
2-Butoxyethanol 111-76-2		2950: 96 h Lepomis macrochirus mg/L LC50 1490: 96 h Lepomis macrochirus mg/L LC50 static	1000: 48 h Daphnia magna mg/L EC50 1698 - 1940: 24 h Daphnia magna mg/L EC50
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane 2530-83-8		55: 96 h Cyprinus carpio mg/L LC50 semi-static	
Glycidyl methacrylate 106-91-2		2.8: 96 h Oryzias latipes mg/L LC50 semi-static	

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Chemical name	Partition coefficient
2-Butoxyethanol 111-76-2	0.81
1-Methoxy-2-propanol 107-98-2	-0.437

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
(Thiodi-4,1-phenylene)bis(diphenylsulfonium) 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

UN/ID No UN1760
Proper Shipping Name Corrosive liquid, n.o.s. (Glycidyl methacrylate)
Hazard class 8
Packing Group III

IATA

UN number UN1760
Proper Shipping Name Corrosive liquid, n.o.s. (Glycidyl methacrylate)
Transport hazard class(es) 8
Packing Group III

IMDG

UN number UN1760
Proper Shipping Name Corrosive liquid, n.o.s. (Glycidyl methacrylate)
Transport hazard class(es) 8
Packing Group III
Marine Pollutant This material may meet the definition of a marine pollutant

15. REGULATORY INFORMATION

International Inventories

Chemical name	TSCA	TSCA Inventory Status	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
1-Methoxy-2-propanol	X	ACTIVE	X	X	X	X	X	X	X
2-Butoxyethanol	X	ACTIVE	X	X	X	X	X	X	X
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	X	ACTIVE	X	X	X	X	X	X	X
Glycidyl methacrylate	X	ACTIVE	X	X	X	X	X	X	X
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate	X	ACTIVE	X			X		X	X
(Thiodi-4,1-phenylene)bis(diphenylsulfonium)	X	ACTIVE	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*

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

Chemical name	CAS No	Weight-%	SARA 313 - Threshold Values %
2-Butoxyethanol - 111-76-2	111-76-2	15-25	1.0
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate - 71449-78-0	71449-78-0	2-6	1.0
(Thiodi-4,1-phenylene)bis(diphenylsulfonium) - 89452-37-9	89452-37-9	2-6	1.0

CWA (Clean Water Act)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Diphenyl(4-phenylthio)phenylsulfonium Hexafluoroatimonate		X		
(Thiodi-4,1-phenylene)bis(diphenylsulfonium)		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
1-Methoxy-2-propanol 107-98-2	X	X	X
2-Butoxyethanol 111-76-2	X	X	X
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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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