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OSCoR ER1002 EP
Safety Data Sheet

Safety Data Sheet

Product: **OSCoR ER1002 EP**
Document status: Issued

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Issued Date: 2020/02

This safety data sheet has been prepared by Orthogonal Inc in accordance with EU Reach Regulation (EC) 1907/2006 and its modifications.

Section 1. Identification of the substance/ mixture and of the company

1.1 Identification of the product
OSCoR ER1002 EP

REACH registration No.	CAS No.	EC No.	Ingredient Name
Trade secret	Trade secret	Trade secret	Hydrofluoro ether
Trade secret	Trade secret	Trade secret	Photoresist Polymer ER1002 EP
Trade secret	Trade Secret	Trade secret	Photoacid generator

1.2 Identified uses of the product and uses advised against

Intended Uses

For R&D use only.

Restrictions

Not intended for drug or household use.

1.3 Identification of the company

Orthogonal Inc.
Building 82, RM A778
1999 Lake Ave.
Rochester, NY 14650-2103
1-585-254-2775
www.orthogonalinc.com
Hours of operation: Monday-Friday 8 a.m. to 5 p.m. EST

1.4 Emergency Telephone Number

France: +33 (0)1.45.42.59.59

Section 2. Hazards identification

2.1 Classification of the substance or mixture

CLP Regulation (EC) No 1272/2008

CLASSIFICATION: Irritating to eyes, respiratory system and skin (GHS)

2.2 Label elements

CLP Regulation (EC) No 1272/2008



Pictogram:

Signal word:

Irritant

Hazard Statement(s):

H316: Causes mild skin irritation

H320: Causes eye irritation

H335: May cause respiratory irritation

Precautionary statement(s):

P262: Do not get in eyes, on skin, or on clothing

Hazard symbols:

Xi, irritant

R-phrases(s):

R36: Irritating to eyes

R37: Irritating to respiratory system

R38: Irritating to skin

Other hazards:

None

Main symptoms

Effects from Eye Contact

Irritating to eyes: Signs/symptoms may include redness, pain and tearing.

Effects from Skin Contact

Irritating to the skin, eyes, and respiratory system.

Effects from Inhalation

May be harmful if inhaled. Causes respiratory tract irritation.

Effects from Ingestion

No data available for humans.

Carcinogenicity

No data available for humans. Avoid prolonged exposure. Do not breath vapor. Use caution when handling. Exposure to any chemical should be limited. To the best of our knowledge, the health hazards of this material have not been fully investigated.

Ingredients

Ingredient	CAS No.	EC No.	Percentage by wt
Hydrofluoro ether	Trade secret	Trade secret	75-90
Photoresist Polymer ER1002EP	Trade secret	Trade secret	10-25

Photoacid generator	Trade secret	Trade secret	>0.005
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2.3 Other hazards

None known

Section 3. Composition / Information on ingredients

Tradename: OSCoR ER1002 EP

Chemical Composition

Ingredient	CAS No.	Percentage by wt	Classification
Hydrofluoro ether	Trade secret	75-90	No occupational exposure limits known
Photoresist Polymer ER1002EP	Trade secret	10-25	No occupational exposure limits known
Photoacid generator	Trade secret	> 0.005	No occupational exposure limits known

For information on ingredient occupational exposure limits, PBT or vPvB status, see sections 8 and 12 of this safety data sheet.

Section 4. First-aid measures

4.1 Description of first aid measures

Skin contact: Wash affected area with soap and water. If signs/symptoms develop, get medical attention.

Eye contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

Ingestion: Do not induce vomiting unless instructed to do so by medical personnel. Never give anything by mouth to an unconscious person. If you feel unwell, get medical attention.

4.2 The most important symptoms and hazardous effects both acute and delayed

See section 11 for information on toxicological effects.

4.3 Indication of immediate medical attention and special treatment needed

Not applicable

Section 5. Fire-fighting measures

5.1 Suitable Extinguishing Media

Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2 Specific hazards arising from the chemical

Exposure to extreme heat can give rise to thermal decomposition. See section 10 for stability and reactivity information.

5.3 Special protective equipment and instructions for fire-fighters

Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate the area. Ventilate with fresh air.

6.2 Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3 Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. Dispose of collected material as soon as possible according to local/regional/national and international regulations.

6.4 Reference to other sections

See sections 8 and 13 for more information.

Section 7. Handling and storage

7.1 Precautions for safe handling

Do not breathe thermal decomposition products. Avoid skin contact with hot material. For industrial or professional use only. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2 Conditions for safe storage including any incompatibilities

Store in a well - ventilated place. Keep container tightly closed. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidizing agents.

7.3 Specific end uses

See section 7.1 and 7.2 for recommended handling and storage. See section 8 for exposure controls and personal protection recommendations.

Section 8. Exposure controls / personal protection

8.1 Control Parameters

Occupational Exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupation exposure limit is not available.

Ingredient	CAS No.	Agency	Limit Type	Additional Comments
Hydrofluoro ether	Trade secret	Manufacturer determined	None known	
Photoresist Polymer ER1002EP	Trade secret	Manufacturer determined	None known	
Photoacid generator	Trade secret	Manufacturer determined	None known	

Biological limit values

No biological limit values exist for any of the components listed in section 3 of this SDS.

8.2 Exposure Controls

8.2.1 Engineering Controls

Use with appropriate local exhaust ventilation on open containers. For those situations where the fluid might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Provide appropriate local exhaust when product is heated.

8.2.2 Personal protective equipment (PPE)

Eye Protection: Safety glasses with side shield

Applicable standards: Use eye protection conforming to EN 166.

Skin/Hand Protection: Gloves made from the following material are recommended.

Material	Thickness (mm)	Breakthrough time
Neoprene	No data available	No data available

Applicable standards: Use gloves conforming to EN 374

If this product is used in a manner presenting a high potential for exposure, protective coveralls may be necessary. A Neoprene apron is recommended.

Respirator Protection: Under normal conditions, airborne exposures are not expected to be significant enough to require respirator protection. In case of heating, use a respirator or appropriate local exhaust.

Thermal hazards

Wear heat insulating gloves when handling hot material

Applicable standards: Use gloves conforming to EN 407

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State:	Liquid
Specific Physical Form:	Liquid
Appearance/Odor:	Clear, colorless liquid. Faint odor.
Odor threshold:	No Data Available
pH:	Not Applicable
Boiling point:	Approx. 100 -150°C [@ 760 mmHg]
Melting Point:	Approx. 0- -10°C
Flammability (solid, gas):	Not Applicable
Explosive properties:	Not classified
Oxidizing properties:	Not applicable
Flash Point:	No flash point
Autoignition temperature:	Approx. 295 °C
Flammable Limits(LEL):	None detected
Flammable Limits(UEL):	None detected
Vapor pressure:	Approx. 8mmHg [@ 25 °C]
Relative density:	Approx. 1.6g/mL [Ref Std: Water=1]
Solubility in Water:	< 20 ppm
Solubility – non – water:	No data available
Partition coefficient:	n - octanol/ water: No data available
Evaporation rate:	No data available
Vapor density:	Approx. 12 [Air=1]
Decomposition temperature:	No data available
Viscosity:	No data available
Density:	Approx. 1.6 g/mL

9.2 Other information

Volatile organic compounds:	Approx. 1,600 g/L
Molecular weight:	No data available
Percent volatile:	70-90%

Section 10. Stability and reactivity

10.1 Reactivity

This material is considered to be non-reactive under normal use conditions.

10.2 Chemical stability

Stable.

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong acids

Strong bases

Strong oxidizing agents

10.6 Hazardous decomposition products

Carbon monoxide, carbon dioxide, hydrogen fluoride, toxic vapor, gas, particulate may form at elevated temperatures, extreme conditions of heat.

Extreme heat arising from situations such as misuse or equipment failure can generate hydrogen fluoride as a decomposition product.

Section 11. Toxicological information

11.1 Information on Toxicological effects

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

No known health effects. Vapors from heated material may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation.

Eye Contact:

Contact with the skin during product use is not expected to result in significant irritation. Vapors from heated material may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

May be harmful if swallowed.

Acute toxicity

Name	Route	Species	Value
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Hydrofluoro ether	Inhalation – vapor (2 hours)	Rat	LD50 > 10 mg/L
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Skin Corrosion/Irritation

Either no data is currently available or there is not sufficient data to classify this product.

Serious Eye Damage/Irritation

Either no data is currently available or there is not sufficient data to classify this product.

Skin Sensitization

Either no data is currently available or there is not sufficient data to classify this product.

Respiratory sensitization

Either no data is currently available or there is not sufficient data to classify this product.

Germ Cell Mutagenicity

Either no data is currently available or there is not sufficient data to classify this product.

Carcinogenicity

No component of this product present at levels greater than 0.1% is identified as probable, possible or confirmed human carcinogen.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Either no data is currently available or there is not sufficient data to classify this product.

Target Organ(s)

Specific Target Organ Toxicity- single exposure

Inhalation. May cause respiratory irritation (GHS)

Specific Target Organ Toxicity – repeated exposure

Either no data is currently available or there is not sufficient data to classify this product.

Aspiration Hazard

Either no data is currently available or there is not sufficient data to classify this product.

Other toxicological information

Hydrogen Fluoride has an ACGIH Threshold Limit Value of 3 parts per million (as fluoride) as a Ceiling Limit and an OSHA PEL of 3 ppm of fluoride as an eight-hour Time- Weighted Average and 6 ppm of fluoride as a Short-Term Exposure Limit. The odor threshold for HF is 0.04 ppm, providing good warning properties for exposure.

Section 12. Ecological information

12.1 Toxicity

Acute aquatic hazard

No information available

12.2 Persistence and degradability

Abiotic

Air, photolysis:	Ozone depletion potential: ODP=0 Reference value for CFC 11: OPD=1
Air, greenhouse effect:	No data available. Reference value for carbon dioxide: GWP=1
Biotic:	No data available

12.3 Bioaccumulative potential

No information available

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB tests

No information available

12.6 Other adverse effects

None

Section 13. Disposal considerations

13.1 Waste Treatment methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities in your country to determine the available treatment and disposal facilities.

Potential for Recycling

Reclaim if feasible.

EU waste code (product as sold)

14 06 04* Sludges or solid wastes containing halogenated solvents

The waste code is also based on the application of the product by the client. Please refer to the European Waste Code (EWC-2000/532/CE and its amendments) to determine the proper code for your waste. Make sure you are in accordance with applicable national and local regulations.

Section 14. Transportation information

Not hazardous for transportation

Section 15. Regulatory information

15.1 Safety, health and environmental regulations/ legislations specific for the substance

Table of occupational hazards (INRS France)

32	Occupational hazards caused by fluorine, hydrofluoric acid and its salts
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United States Regulations

NFPA Hazard Classification

Health: 3 Flammability: 0 Reactivity: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 1 Flammability: 0 Reactivity: 0 Protection: X -See PPE section.

Hazardous Material Identification System (HMIS®) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA)

15.2 Chemical Safety Assessment

A chemical safety assessment has not been carried out for this product in accordance with regulation (EC) No 1907/2006 as amended.

Section 16. Other information

Revision Information: This document was revised from the GHS version to be in accordance with EU Reach Regulation (EC) 1907/2006 and its modifications to the best of our capabilities.

The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. However, no guarantee or warranty of any kind, expressed or implied, is made by Orthogonal Inc. with respect to such information.
