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## **Material Safety Data Sheet**

Transportation Emergency: 1-800-451-8346

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### **SECTION 1. ----- CHEMICAL IDENTIFICATION-----**

CATALOG #: 2307-3-01  
NAME: 1,1,2,2-TETRAFLUOROETHYL ALLYL ETHER

### **SECTION 2. ----- COMPOSITION/INFORMATION ON INGREDIENTS -----**

CAS #: 1428-33-7  
MF: C<sub>5</sub>H<sub>6</sub>F<sub>4</sub>O = 158.10

### **SECTION 3. ----- HAZARDS IDENTIFICATION -----**

LABEL PRECAUTIONARY STATEMENTS  
FLAMMABLE (USA) HIGHLY FLAMMABLE (EU).  
IRRITANT.  
IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

### **SECTION 4. ----- FIRST-AID MEASURES-----**

ORAL EXPOSURE  
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS  
CONSCIOUS. CALL A PHYSICIAN.  
INHALATION EXPOSURE  
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE  
ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.  
DERMAL EXPOSURE  
IN CASE OF CONTACT, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS  
AMOUNTS OF WATER.  
EYE EXPOSURE  
IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS  
OF WATER FOR AT LEAST 15 MINUTES.

**SECTION 5. ----- FIRE FIGHTING MEASURES -----**

**EXPLOSION HAZARDS**

VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND FLASH BACK.

**FLASH POINT**

23 °F / -5 °C METHOD: CLOSED CUP

**EXTINGUISHING MEDIA**

SUITABLE: FOR SMALL (INCIPIENT) FIRES, USE MEDIA SUCH AS "ALCOHOL" FOAM, DRY CHEMICAL, OR CARBON DIOXIDE. FOR LARGE FIRES, APPLY WATER FROM AS FAR AS POSSIBLE. USE VERY LARGE QUANTITIES (FLOODING) OF WATER APPLIED AS A MIST OR SPRAY; SOLID STREAMS OF WATER MAY BE INEFFECTIVE. COOL ALL AFFECTED CONTAINERS WITH FLOODING QUANTITIES OF WATER.

**FIREFIGHTING**

PROTECTIVE EQUIPMENT: WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

SPECIFIC HAZARD(S): FLAMMABLE LIQUID. VAPOR MAY TRAVEL CONSIDERABLE DISTANCE TO SOURCE OF IGNITION AND FLASH BACK. EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

**EXPOSURE HAZARD(S)**

MATERIAL: IRRITANT.

**SECTION 6. ----- ACCIDENTAL RELEASE MEASURES-----**

**PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL**

EVACUATE AREA. SHUT OFF ALL SOURCES OF IGNITION.

**PROCEDURE(S) OF PERSONAL PRECAUTION(S)**

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS, AND HEAVY RUBBER GLOVES.

**METHODS FOR CLEANING UP**

COVER WITH DRY-LIME, SAND, OR SODA ASH. PLACE IN COVERED CONTAINERS USING NON-SPARKING TOOLS AND TRANSPORT OUTDOORS. VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

**SECTION 7. ----- HANDLING AND STORAGE-----**

**HANDLING**

USER EXPOSURE: DO NOT BREATHE VAPOR. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE.

**STORAGE**

SUITABLE: KEEP TIGHTLY CLOSED. KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME. STORE IN A COOL DRY PLACE.

**SECTION 8. ----- EXPOSURE CONTROLS/PERSONAL PROTECTION-----**

**ENGINEERING CONTROLS**

SAFETY SHOWER AND EYE BATH. MECHANICAL EXHAUST REQUIRED. USE NONSPARKING TOOLS.

**PERSONAL PROTECTIVE EQUIPMENT**

OTHER: WEAR APPROPRIATE GOVERNMENT APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

**GENERAL HYGIENE MEASURES**

WASH THOROUGHLY AFTER HANDLING. WASH CONTAMINATED CLOTHING BEFORE REUSE.

**SECTION 9. ----- PHYSICAL AND CHEMICAL PROPERTIES -----**

**APPEARANCE AND ODOR**

COLORLESS LIQUID

**PHYSICAL PROPERTIES**

BOILING POINT: 74 °C @ 739 mmHg  
DENSITY: 1.2043 g/cm<sup>3</sup> @ 20 °C  
FLASH POINT: 23 °F / -5 °C METHOD: CLOSED CUP  
REFRACTIVE INDEX: 1.328 @ 20 °C

**SECTION 10. -----STABILITY AND REACTIVITY -----**

**STABILITY**

MATERIALS TO AVOID: STRONG OXIDIZING AGENTS.

**HAZARDOUS DECOMPOSITION PRODUCTS**

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE, HYDROGEN FLUORIDE.

**SECTION 11. ----- TOXICOLOGICAL INFORMATION -----**

**ROUTE OF EXPOSURE**

SKIN CONTACT: CAUSES SKIN IRRITATION.

MULTIPLE ROUTES: VAPOR OR MIST IS IRRITATING TO THE EYES, MUCOUS MEMBRANES, AND UPPER RESPIRATORY TRACT. MAY BE HARMFUL BY INHALATION, INGESTION, OR SKIN ABSORPTION.

**SIGNS AND SYMPTOMS OF EXPOSURE**

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

**SECTION 12. ----- ECOLOGICAL INFORMATION -----**

DATA NOT YET AVAILABLE.

**SECTION 13. ----- DISPOSAL CONSIDERATIONS -----**

**APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION**

BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS MATERIAL IS HIGHLY FLAMMABLE. OBSERVE ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

**SECTION 14. ----- TRANSPORT INFORMATION -----**

DOT

PROPER SHIPPING NAME: ETHERS, N.O.S.

UN#: 3271

CLASS: 3

PACKING GROUP: PACKING GROUP III

HAZARD LABEL: FLAMMABLE LIQUID

**SECTION 15. ----- REGULATORY INFORMATION -----**

EU ADDITIONAL CLASSIFICATION

SYMBOL OF DANGER: F-Xi

INDICATION OF DANGER: HIGHLY FLAMMABLE. IRRITANT.

R: 11-36/37/38

RISK STATEMENTS: HIGHLY FLAMMABLE. IRRITATING TO EYES,  
RESPIRATORY SYSTEM AND SKIN.

S: 16-26-36

SAFETY STATEMENTS: KEEP AWAY FROM SOURCES OF IGNITION - NO  
SMOKING. IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH  
PLENTY OF WATER AND SEEK MEDICAL ADVICE. WEAR SUITABLE  
PROTECTIVE CLOTHING.

US CLASSIFICATION AND LABEL TEXT

INDICATION OF DANGER: FLAMMABLE (USA) HIGHLY FLAMMABLE (EU).  
IRRITANT.

RISK STATEMENTS: IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

SAFETY STATEMENTS: KEEP AWAY FROM SOURCES OF IGNITION - NO  
SMOKING. IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH  
PLENTY OF WATER AND SEEK MEDICAL ADVICE. WEAR SUITABLE  
PROTECTIVE CLOTHING.

**SECTION 16. ----- OTHER INFORMATION -----**

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO  
BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SYNQUEST LABS, INC. SHALL  
NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING  
OR FROM CONTACT WITH THE ABOVE PRODUCT.