



# SynQuest Laboratories, Inc.

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## Material Safety Data Sheet

Transportation Emergency: 1-800-451-8346

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

CATALOG #: 1300-3-46

NAME: (E)-1,1,1,3-TETRAFLUORO-2-BUTENE

SYNONYM: (2E)-1,1,1,3-TETRAFLUOROBUT-2-ENE

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

CAS NUMBER: 791616-87-0

MDL NUMBER: MFCD07784202

MOLECULAR FORMULA: C<sub>4</sub>H<sub>4</sub>F<sub>4</sub>

MOLECULAR WEIGHT: 128.07

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

#### LABEL PRECAUTIONARY STATEMENTS

FLAMMABLE GAS.

#### ADDITIONAL ADVICE

GAS UNDER PRESSURE.

RISK OF EXPLOSION IF HEATED.

RAPID EVAPORATION OF THE LIQUID MAY CAUSE FROSTBITE.

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

#### INHALATION EXPOSURE

IF INHALED, REMOVE EXPOSED TO FRESH AIR. IF BREATHING IS DIFFICULT, CALL A PHYSICIAN IMMEDIATELY.

#### DERMAL EXPOSURE

IN CASE OF EXPOSURE, IMMEDIATELY WASH SKIN WITH SOAP AND COPIOUS AMOUNTS OF WATER. CALL A PHYSICIAN IMMEDIATELY.

#### EYE EXPOSURE

IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING THE EYELIDS WITH FINGERS. CALL A PHYSICIAN IMMEDIATELY.

#### ORAL EXPOSURE

NOT A NORMAL ROUTE OF ENTRY. IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.

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

**FLASH POINT**

NOT ESTABLISHED

**EXTINGUISHING MEDIA**

SUITABLE: WATER SPRAY, DRY FOAM, CARBON DIOXIDE.

**FIREFIGHTING**

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

SPECIFIC HAZARD(S): EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

CYLINDERS MAY RUPTURE UNDER FIRE CONDITIONS. COOL ALL AFFECTED CONTAINERS WITH FLOODING QUANTITIES OF WATER.

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

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

EVACUATE AREA. ALLOW GAS TO DISSIPATE.

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

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS, AND HEAVY RUBBER GLOVES. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION. BEWARE OF VAPORS ACCUMULATING IN LOWER AREAS.

**ENVIRONMENTAL PRECAUTIONS**

THE PRODUCT EVAPORATES READILY. PREVENT PRODUCT FROM ENTERING DRAINS.

**METHODS FOR CLEANING UP**

IF IT IS SAFE TO DO SO, LOCATE AND SHUT OFF THE SOURCE OF THE LEAKING GAS.

PROPERLY LABEL THE DEFECTIVE CYLINDER, ISOLATE IT AND PREPARE TO RETURN IT TO THE MANUFACTURER IN ACCORDANCE WITH ALL APPLICABLE SHIPPING REGULATIONS. VENTILATE AREA.

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

**HANDLING**

USER EXPOSURE: AVOID INHALATION. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE.

PRESSURIZED CONTAINER: PROTECT FROM SUNLIGHT AND DO NOT EXPOSE TO TEMPERATURES EXCEEDING 50 °C. DO NOT PIERCE OR BURN, EVEN AFTER USE.

FIRE OR INTENSE HEAT MAY CAUSE VIOLENT RUPTURE.

**STORAGE**

SUITABLE: STORE IN TIGHTLY CLOSED, AIRTIGHT, MOISTURE-PROOF CYLINDERS OR TANKS IN A COOL, DRY, WELL-VENTILATED AREA AWAY FROM HEAT, SOURCES OF IGNITION, AND SPARKS. PROTECT THE PRESSURIZED CONTAINERS FROM PHYSICAL DAMAGE.

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

### **ENGINEERING CONTROLS**

SAFETY SHOWER AND EYE BATH. HIGHLY EFFECTIVE EXHAUST REQUIRED.

### **PERSONAL PROTECTIVE EQUIPMENT**

RESPIRATORY: USE A FULL-FACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE ABEK (EN 166) RESPIRATOR CARTRIDGES AS A BACKUP TO ENGINEERING CONTROLS. IF THE RESPIRATOR IS THE SOLE MEANS OF PROTECTION, USE A FULL-FACE SUPPLIED AIR RESPIRATOR. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

HAND: PROTECTIVE GLOVES.

EYE: CHEMICAL SAFETY GOGGLES.

### **GENERAL HYGIENE MEASURES**

WASH THOROUGHLY AFTER HANDLING.

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

### **APPEARANCE AND ODOR**

GAS @ 25 °C AND 760 mmHg.

### **PHYSICAL PROPERTIES**

BOILING POINT: 16 - 18 °C @ 760 mmHg

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

### **STABILITY**

STABLE: STABLE UNDER RECOMMENDED STORAGE CONDITIONS.

MATERIALS TO AVOID: STRONG OXIDIZING AGENTS.

CONDITIONS TO AVOID: DO NOT PIERCE OR BURN, EVEN AFTER USE. DO NOT SPRAY ON A NAKED FLAME OR ANY INCANDESCENT MATERIAL. HEAT, FLAMES AND SPARKS.

### **HAZARDOUS DECOMPOSITION PRODUCTS**

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON OXIDES, HYDROGEN FLUORIDE.

### **HAZARDOUS POLYMERIZATION**

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

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

### **ROUTE OF EXPOSURE**

INHALATION: MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION.

INGESTION: NOT A NORMAL ROUTE OF ENTRY. MAY BE HARMFUL IF SWALLOWED.

SKIN: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION. MAY CAUSE FROST BITES.

EYES: MAY CAUSE EYE IRRITATION.

### **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  
CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE  
OF THIS MATERIAL. OBSERVE ALL FEDERAL, STATE, AND LOCAL  
ENVIRONMENTAL REGULATIONS.

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

UN3161 - HC 2.1 - PG N/A

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

EU ADDITIONAL CLASSIFICATION  
SYMBOL OF DANGER: N/A  
INDICATION OF DANGER: N/A.  
RISK STATEMENTS: 10-44  
SAFETY STATEMENTS: 9-16-23-24/25-26-33-36/37/39-38-45-47  
UNITED STATES REGULATORY INFORMATION  
TSCA: NOT LISTED ON TSCA INVENTORY; FOR R&D USE ONLY

**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.