



**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 #: 2418-1-X2

NAME: 3,4-DIETHOXYCYCLOBUT-3-ENE-1,2-DIONE

SYNONYMS: DIETHYL SQUARATE; 1,2-DIETHOXY-3,4-DIOXOCYCLOBUT-1-ENE

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

CAS NUMBER: 5231-87-8

MDL NUMBER: MFCD00001333

MOLECULAR FORMULA: C<sub>8</sub>H<sub>10</sub>O<sub>4</sub>

MOLECULAR WEIGHT: 170.16

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

LABEL PRECAUTIONARY STATEMENTS

IRRITANT.

IRRITANT TO RESPIRATORY TRACT, TO SKIN AND EYES.

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

ORAL EXPOSURE

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CONSULT A PHYSICIAN.

INHALATION EXPOSURE

IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CONSULT A PHYSICIAN.

EYE EXPOSURE

ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS. CONSULT A PHYSICIAN.

DERMAL EXPOSURE

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

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

**FLASH POINT**

NOT ESTABLISHED.

**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 METHOD(S) OF FIRE FIGHTING: USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS.

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

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

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

EVACUATE PERSONNEL TO A SAFE PLACE.

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

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS, AND HEAVY RUBBER GLOVES. AVOID DUST FORMATION. AVOID BREATHING DUST, VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION.

**ENVIRONMENTAL PRECAUTIONS**

DO NOT LET PRODUCT ENTER DRAINS. AVOID RELEASE INTO THE ENVIRONMENT.

**METHODS FOR CLEANING UP**

ABSORB ON APPROPRIATE MATERIAL, SWEEP UP MATERIAL AND DISPOSE OF AS HAZARDOUS WASTE. PLACE IN CONTAINER FOR DISPOSAL ACCORDING TO LOCAL REGULATIONS.

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

**HANDLING**

USER EXPOSURE: AVOID CONTACT WITH SKIN, CLOTHING AND EYES. AVOID FORMATION OF DUST AND AEROSOLS. PROVIDE APPROPRIATE EXHAUST VENTILATION AT PLACES WHERE VAPOR IS FORMED. NORMAL MEASURES FOR PREVENTIVE FIRE PROTECTION.

**STORAGE**

SUITABLE: KEEP CONTAINER TIGHTLY CLOSED. STORE IN A COOL DRY PLACE. AVOID DIRECT SUNLIGHT.

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

### **ENGINEERING CONTROLS**

SAFETY SHOWER AND EYE BATH. MECHANICAL EXHAUST REQUIRED.

### **PERSONAL PROTECTIVE EQUIPMENT**

RESPIRATORY: WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE USE A DUST MASK TYPE N95 (US) OR TYPE P1 (EN 143) RESPIRATOR.

USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

HAND: HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE'S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. WASH AND DRY HANDS.

EYE: TIGHTLY FITTING CHEMICAL SAFETY GOGGLES.

### **GENERAL HYGIENE MEASURES**

WASH HANDS THOROUGHLY AFTER HANDLING. AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

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

### **APPEARANCE AND ODOR**

LIQUID

### **PHYSICAL PROPERTIES**

BOILING POINT: 94-95°C @ 0.1 mmHg

DENSITY: 1.15 g/mL @ 20 °C

REFRACTIVE INDEX: 1.509 @ 20 °C

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

### **STABILITY**

STABLE: STABLE UNDER RECOMMENDED CONDITIONS.

CONDITIONS TO AVOID: OPEN FIRE AND FLAMES, EXTREMES OF TEMPERATURE, MOISTURE AND DIRECT SUNLIGHT.

MATERIALS TO AVOID: STRONG OXIDIZING AGENTS, STRONG ACIDS AND BASES, STRONG REDUCING AGENTS.

### **HAZARDOUS DECOMPOSITION PRODUCTS**

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON OXIDES.

### **HAZARDOUS POLYMERIZATION**

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

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

### **ROUTE OF EXPOSURE**

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

INGESTION: MAY BE HARMFUL IF SWALLOWED.

SKIN: MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION.

EYES: CAUSES EYE IRRITATION.

### **SIGNS AND SYMPTOMS OF EXPOSURE**

TO THE BEST OF OUR KNOWLEDGE, THE TOXICOLOGICAL PROPERTIES OF THIS PRODUCT HAVE NOT BEEN FULLY DETERMINED.

## **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. OBSERVE ALL FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

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

UNRESTRICTED

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

EU ADDITIONAL CLASSIFICATION  
SYMBOL OF DANGER: Xi  
INDICATION OF DANGER: IRRITANT.  
RISK STATEMENTS: 36/37/38  
SAFETY STATEMENTS: 13-22-24/25-26-36/37/39-45  
US CLASSIFICATION AND LABEL TEXT  
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.