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## **Material Safety Data Sheet**

**Transportation Emergency: 1-800-451-8346**

Date last revised: July 31, 2013

Date printed: July 31, 2013

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

CATALOG #: 2116-5-09  
NAME: BUTYRYL CHLORIDE  
SYNONYM: BUTANOYL CHLORIDE

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

CAS NUMBER: 141-75-3  
MOLECULAR FORMULA: C<sub>4</sub>H<sub>7</sub>ClO  
MOLECULAR WEIGHT: 106.55

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

#### **LABEL PRECAUTIONARY STATEMENTS**

FLAMMABLE LIQUID.  
TOXIC.  
TOXIC BY INHALATION.  
CORROSIVE.  
CAUSES SKIN BURNS AND EYE DAMAGE. DESTRUCTIVE TO RESPIRATORY TRACT.  
LACHRYMATOR.  
REACTS VIOLENTLY WITH WATER.  
DANGEROUS FOR THE ENVIRONMENT.

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

EYE EXPOSURE: IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. CONTINUE RISING EYES DURING TRANSPORT TO HOSPITAL. SEEK MEDICAL ATTENTION.  
DERMAL EXPOSURE: IF THE CHEMICAL GOT ONTO THE CLOTHED PORTION OF THE BODY, REMOVE THE CONTAMINATED CLOTHES AS QUICKLY AS POSSIBLE, PROTECTING YOUR OWN HANDS AND BODY. PLACE THE VICTIM UNDER A DELUGE SHOWER. IF THE CHEMICAL GOT ON THE VICTIM'S EXPOSED SKIN, SUCH AS THE HANDS : GENTLY AND THOROUGHLY WASH THE CONTAMINATED SKIN WITH RUNNING WATER AND NON-ABRASIVE SOAP. SEEK MEDICAL ATTENTION. WASH CONTAMINATED CLOTHING BEFORE REUSING.  
INHALATION EXPOSURE: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK MEDICAL ATTENTION.  
INGESTION: IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. SEEK MEDICAL ATTENTION.

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

**FLASH POINT:**

18 °C – CLOSED CUP.

**EXTINGUISHING MEDIA**

SUITABLE: FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.

UNSUITABLE: DO NOT USE WATER.

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): EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

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

**PERSONAL PRECAUTIONS**

WEAR RESPIRATORY PROTECTION. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION. REMOVE ALL SOURCES OF IGNITION. EVACUATE PERSONNEL TO SAFE AREAS. BEWARE OF VAPOURS ACCUMULATING TO FORM EXPLOSIVE CONCENTRATIONS. VAPOURS CAN ACCUMULATE IN LOW AREAS.

**ENVIRONMENTAL PRECAUTIONS**

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS. RELEASE INTO THE ENVIRONMENT MUST BE AVOIDED.

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP**

CONTAIN SPILLAGE, AND THEN COLLECT WITH AN ELECTRICALLY PROTECTED VACUUM CLEANER OR BY WET-BRUSHING AND PLACE IN CONTAINER FOR DISPOSAL ACCORDING TO LOCAL REGULATIONS. DO NOT FLUSH WITH WATER.

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

**HANDLING**

USER EXPOSURE: AVOID INHALATION. AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. AVOID PROLONGED OR REPEATED EXPOSURE. KEEP AWAY FROM SOURCES OF IGNITION. TAKE MEASURES TO PREVENT THE BUILD UP OF ELECTROSTATIC CHARGE. USE EXPLOSIONPROOFEQUIPMENT.

**STORAGE**

SUITABLE: TIGHTLY CLOSED CONTAINERS IN A DRY AND WELL-VENTILATED PLACE.

CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE. MOISTURE SENSITIVE. STORE UNDER INERT GAS. NEVER ALLOW PRODUCT TO GET IN CONTACT WITH WATER DURING STORAGE.

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

### **ENGINEERING CONTROLS**

SAFETY SHOWER AND EYE BATH. MECHANICAL EXHAUST REQUIRED.

### **PERSONAL PROTECTIVE EQUIPMENT**

RESPIRATORY: USE A FULL-FACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE ABEK (EN 14387) 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. GLOVES MUST BE INSPECTED PRIOR TO USE.

EYE: TIGHTLY FITTING CHEMICAL SAFETY GOGGLES.

### **GENERAL HYGIENE MEASURES**

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

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

### **APPEARANCE AND ODOR**

LIQUID

### **PHYSICAL PROPERTIES**

MELTING POINT: -89 °C  
BOILING POINT: 102 °C  
DENSITY: 1.0263 g/mL @ 20.6 °C  
REFRACTIVE INDEX: 1.4098 @ 25 °C

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

### **STABILITY**

STABLE: STABLE UNDER RECOMMENDED CONDITIONS.

VAPORS MAY FORM EXPLOSIVE MIXTURE WITH AIR.

MATERIALS TO AVOID: WATER, MOISTURE. REACTS VIOLENTLY WITH WATER.

STRONG OXIDIZING AGENTS. STRONG ACIDS, STRONG BASES, ALCOHOLS.

CONDITIONS TO AVOID: MOISTURE, HEAT, FLAME, SPARKS.

### **HAZARDOUS DECOMPOSITION PRODUCTS**

HAZARDOUS DECOMPOSITION PRODUCTS: CARBON OXIDES, HYDROGEN CHLORIDE GAS.

### **HAZARDOUS POLYMERIZATION**

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

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

### **ROUTE OF EXPOSURE**

SKIN ABSORPTION: MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN. CAUSES SKIN BURNS.

INHALATION: TOXIC IF INHALED. MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

INGESTION: MAY BE HARMFUL IF SWALLOWED.

EYES: CAUSES SEVERE EYE BURNS. LACHRYMATOR.

### **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 -----**

TOXIC TO AQUATIC ORGANISMS.

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

BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS MATERIAL IS HIGHLY FLAMMABLE. OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO A LICENSED DISPOSAL COMPANY. CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.

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

DOT

UN2353 - HC 3 (8) - PG II

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

EU ADDITIONAL CLASSIFICATION

SYMBOL OF DANGER: F, C, N

INDICATION OF DANGER: FLAMMABLE. CORROSIVE. DANGEROUS FOR THE ENVIRONMENT.

RISK STATEMENTS: 11-18-20-29-34-41-51

SAFETY STATEMENTS: 16-23-24/25-26-27-30-33-36/37/39-45-61

US CLASSIFICATION AND LABEL TEXT

TSCA: 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.