

MATERIAL SAFETY DATA SHEET

NAME OF PRODUCT
May 30, 2007

FILE NO.:
MSDS DATE:07/08/2007

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 2-BUTOXYETHANOL
SYNONYMS: ETHYLENE GLYCOL MONOBUTYL ETHER
PRODUCT CODES: 11820

MANUFACTURER: ELECTRON MICROSCOPY SCIENCES
1560 INDUSTRY ROAD/PO BOX 550
HATFIELD PA 19440
DIVISION:
ADDRESS:

EMERGENCY PHONE: 215-412-8400
CHEMTREC PHONE: 800-424-9300

FAX PHONE: 215-412-8450

CHEMICAL NAME: 2-BUTOXYETHANOL
CHEMICAL FAMILY: NOT AVAILABLE
CHEMICAL FORMULA: C₆H₁₄O₂

SECTION 1 NOTES:

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT:
2-BUTOXYETHANOL

<u>CAS NO.</u>	<u>% WT</u>	<u>% VOL</u>	<u>SARA 313 REPORTABLE</u>
111-76-2	100		
	<u>ppm</u>	<u>mg/m3</u>	
OSHA PEL-TWA:		24	
OSHA PEL STEL :			
OSHA PEL CEILING:			
ACGIH TLV-TWA:			
ACGIH TLV STEL:			
ACGIH TLV CEILING:			

SECTION 2 NOTES:

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: HAZARDOUS IN CASE OF SKIN CONTACT (PERMEATOR), OF EYE CONTACT (IRRITANT), OF INGESTION, OF INHALATION. SLIGHTLY HAZARDOUS IN CASE OF SKIN CONTACT (IRRITANT). SEVERE OVER-EXPOSURE CAN RESULT IN DEATH.

ROUTES OF ENTRY:

POTENTIAL HEALTH EFFECTS
EYES:

SKIN:

INGESTION:

INHALATION:

ACUTE HEALTH HAZARDS:

CHRONIC HEALTH HAZARDS:

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

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CARCINOGENICITY

OSHA:
OTHER:

ACGIH:

NTP:

IARC:

SECTION 3 NOTES:

SECTION 4: FIRST AID MEASURES

EYES: IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, COLD WATER MAY BE USED. GET MEDICAL ATTENTION.

SKIN: IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. COVER IRRITATED SKIN WITH EMOLLIENT. COLD WATER MAY BE USED. WASH CLOTHING, THOROUGHLY CLEAN SHOES BEFORE REUSE. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION: DO NOT INDUCE VOMITING UNLESS DIRECTED TO DO SO BY MEDICAL PERSONNEL. IF LARGE QUANTITIES OF THIS MATERIAL ARE SWALLOWED, CALL PHYSICIAN IMMEDIATELY.

INHALATION: IF INHALED, MOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL PHYSICIAN IMMEDIATELY.

SECTION 4 NOTES:

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABILITY OF THE PRODUCT : COMBUSTIBLE

FLAMMAABLE LIMITS: LOWER: 1.1% UPPER: 12.7%

FLASH POINT:

CLOSED CUP: 61°C (141.8°F) (SETAFLASH) OPEN CUP: 69.4°C(156.9°F) (TAG)

PRODUCTS OF COMBUSTION: THESE PRODUCTS ARE CARBON OXIDES (CO, CO2).

AUTOIGNITION TEMPERATURE:

F: 471.2°F

C: 244° C

NFPA HAZARD CLASSIFICATION

HEALTH:
OTHER:

FLAMMABILITY:

REACTIVITY:

HMIS HAZARD CLASSIFICATION

HEALTH: 2
PROTECTION: H

FLAMMABILITY: 2

REACTIVITY: 0

EXTINGUISHING MEDIA: SMALL FIRE: USE DRY CHEMICAL POWDER
LARGE FIRE: USE WATER SPRAY, FOG, OR FOAM. DO NOT USE WATER JET.

SPECIAL FIRE FIGHTING PROCEDURES: NOT AVAILABLE

UNUSUAL FIRE AND EXPLOSION HAZARDS: RISKS OF EXPLOSION OF PRODUCT IN PRESENCE OF MECHANICAL IMPACT: NOT AVAILABLE

RISKS OF EXPLOSION OF THE PRODUCT IN PRESENCE OF STATIC DISCHARGE: NOT AVAILABLE

HAZARDOUS DECOMPOSITION PRODUCTS: NOT AVAILABLE

SECTION 5 NOTES:

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SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: DILUTE WITH WATER AND MOP UP, OR ABSORB WITH AN INERT DRY MATERIAL AND PLACE IN AN APPROPRIATE WASTE DISPOSAL CONTAINER.

LARGE SPILL: COMBUSTIBLE MATERIAL. POISONOUS LIQUID. KEEP AWAY FROM HEAT. KEEP AWAY FROM SOURCES OF IGNITION. STOP LEAK, DO NOT GET WATER INSIDE CONTAINER, DO NOT TOUCH SPILLED MATERIAL. USE WATER SPRAY TO REDUCE VAPORS. PREVENT ENTRY INTO SEWERS, BASEMENTS OR CONFINED AREAS, DIKE IF NEEDED. CALL FOR ASSISTANCE. BE CAREFUL THAT THE PRODUCT IS NOT PRESENT AT A CONCENTRATION LEVEL ABOVE TLV. CHECK TLV ON THE MSDS AND WITH LOCAL AUTHORITIES.

SECTION 6 NOTES:

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: KEEP CONTAINER IN A COOL, WELL VENTILATED AREA. KEEP CONTAINER TIGHTLY CLOSED AND SEALED UNTIL READY FOR USE. AVOID ALL POSSIBLE SOURCES OF IGNITION (SPARK OR FLAME).

OTHER PRECAUTIONS: KEEP LOCKED UP, KEEP AWAY FROM HEAT. KEEP AWAY FROM SOURCES OF IGNITION. GROUND ALL EQUIPMENT CONTAINING MATERIAL. DO NOT INGEST, WEAR SUITABLE PROTECTIVE CLOTHING. KEEP AWAY FROM INCOMPATIBLES SUCH AS OXIDIZING AGENTS, ALKALIS.

SECTION 7 NOTES:

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: PROVIDE EXHAUST VENTILATION OR OTHER ENGINEERING CONTROLS TO KEEP THE AIRBORNE CONCENTRATIONS OF VAPORS BELOW THEIR RESPECTIVE THRESHOLD LIMIT VALUE. ENSURE THAT EYEWASH STATIONS AND SAFETY SHOWERS ARE PROXIMAL TO THE WORK STATION LOCATION.

VENTILATION : PROVIDE EXHAUST VENTILATION OR OTHER CONTROLS TO KEEP THE AIRBORNE CONCENTRATIONS OF VAPORS BELOW THEIR RESPECTIVE THRESHOLD LIMIT VALUE.

RESPIRATORY PROTECTION: VAPOR RESPIRATOR, BE SURE TO USE AN APPROVED RESPIRATOR OR EQUIVALENT.

EYE PROTECTION: SPLASH GOGGLES

SKIN PROTECTION: LAB COAT, GLOVES, BOOTS

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

WORK HYGIENIC PRACTICES:

EXPOSURE GUIDELINES: SUGGESTED PROTECTIVE CLOTHING MIGHT NOT BE SUFFICIENT; CONSULT A SPECIALIST BEFORE HANDLING THIS PRODUCT IN A SPILL.

SECTION 8 NOTES:

TWA: 20 (PPM) FROM ACGIH (TLV) [UNITED STATES] SKIN

TWA: 240 (MG/M³) FRP, PSJA (PEL) [UNITED STATES]

TWA: 50 (PPM) FROM OSHA (PEL) [UNITED STATES]

CONSULT LOCAL AUTHORITIES FOR ACCEPTABLE EXPOSURE LIMITS

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: LIQUID, COLORLESS

ODOR: ETHEREAL. PLEASANT. (SLIGHT)

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BOILING POINT:

F: 340.7°F
C: 171.5°C

MELTING POINT:

F: -94°F
C: -70°C

FREEZING POINT:

F: NOT AVAILABLE
C:

VAPOR PRESSURE (mmHg):

F: 0.1 kPa@

C: 20°C

VAPOR DENSITY (AIR = 1):

@

F:
C:

SPECIFIC GRAVITY (H2O = 1):

@

F: 4.07 (AIR=1)
C:

EVAPORATION RATE:

BASIS (=1): NOT AVAILABLE

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (con't)

SOLUBILITY IN WATER: PARTIALLY SOLUBLE IN COLD WATER

PERCENT SOLIDS BY WEIGHT NOT AVAILABLE

PERCENT VOLATILE:

BY WT/ BY VOL @ NOT AVAILABLE

F:
C:

VOLATILE ORGANIC COMPOUNDS (VOC):

WITH WATER: LBS/GAL NOT AVAILABLE
WITHOUT WATER: LBS/GAL

MOLECULAR WEIGHT:

VISCOSITY:

@

118.18 G/MOLE

SECTION 9 NOTES:

SECTION 10: STABILITY AND REACTIVITY

STABLE

UNSTABLE

STABILITY: THE PRODUCT IS STABLE

CONDITIONS TO AVOID (STABILITY): HEAT, IGNITION SOURCES

INCOMPATIBILITY (MATERIAL TO AVOID): REACTIVE WITH OXIDIZING AGENTS, ALKALIS

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: NOT AVAILABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

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CONDITIONS TO AVOID (POLYMERIZATION): WILL NOT OCUR

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SECTION 10 NOTES:

NON-CORROSIVE IN PRESENCE OF GLASS

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: NOT AVAILABLE

SECTION 11 NOTES:

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: THE PRODUCTS OF DEGRADATION ARE LESS TOXIC THAN THE PRODUCT ITSELF.

SECTION 12 NOTES:

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: WASTE MUST BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL ENVIRONMENTAL CONTROL REGULATIONS.

SECTION 13: DISPOSAL CONSIDERATIONS (con't)

SECTION 13 NOTES:

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME: TOXIC LIQUID, ORGANIC, N.O.S. (ETHYLENE GLYCOL MONOBUTYL ETHER)

HAZARD CLASS: 6.1 , POISONOUS MATERIAL

ID NUMBER: UNN 2810

PACKING GROUP: PG III

LABEL STATEMENT: POISON 6

WATER TRANSPORTATION

PROPER SHIPPING NAME:

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENTS:

AIR TRANSPORTATION

PROPER SHIPPING NAME:

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENTS:

OTHER AGENCIES:

SECTION 14 NOTES:

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

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TSCA (TOXIC SUBSTANCE CONTROL ACT): INVENTORY; 2-BUTOXYETHANOL

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): NOT AVAILABLE

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): NOT AVAILABLE

311/312 HAZARD CATEGORIES: R20/21/22, R36/38

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SECTION 15 NOTES:

HMIS- HEALTH 2, FIRE 2, REACTIVITY 0, PERSONAL PROTECTION H

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

PREPARATION INFORMATION:

DISCLAIMER: