Ethylene Glycol Monobutyl ether Acetate

200090

EASTMAN

MATERIAL SAFETY DATA SHEET

100000075/F/USA
Revision Date: 11/19/1996
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: "EASTMAN" EB Acetate

Product Identification Number(s): SPC 17129

Manufacturer/Supplier: Eastman Chemical Company, Kingsport, Tennessee 37662

MSDS Prepared by: Eastman Product Safety and Regulatory Programs, Eastman Chemical Company, Kingsport, TN 37662

For Emergency Health, Safety & Environmental Information, call 800-EASTMAN

For Emergency Transportation Information, call CHEMTREC at 800-424-9300 or call 800-EASTMAN

For Other Information, call your Eastman representative or the Eastman operator at 423-229-2000 (USA)

Chemical Name: 2-butoxyethyl acetate

Synonym(s): EAN 069660, PM 01802-00, ethylene glycol monobutyl ether acetate

Molecular Formula: C8H16O3

Molecular Weight: 160.21

Product Use: solvent

Distributed by
WORUM CHEMICAL COMPANY
St. Paul, MN
Germantown, WI
(612) 645-9452 - FAX
(414) 253-6023 - FAX

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

100 2-butoxyethyl acetate (000112-07-2)

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3. HAZARDS IDENTIFICATION

WARNING!
MAY CAUSE BLOOD DISORDERS BASED ON ANIMAL DATA
MAY CAUSE KIDNEY DAMAGE BASED ON ANIMAL DATA
HARMFUL IF INHALED OR ABSORBED THROUGH SKIN
PEROXIDE FORMER
COMBUSTIBLE LIQUID AND VAPOR

HMIS Hazard Ratings: Health - 2, Flammability - 2, Chemical Reactivity - 0

NFPA Hazard Ratings: Health - 1, Flammability - 2, Chemical Reactivity - 0

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NOTE: HMIS and NFPA ratings involve data and interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

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4. FIRST-AID MEASURES

Inhalation: Move to fresh air. Treat symptomatically. Get medical attention.

Eyes: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Skin: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Ingestion: Seek medical advice.

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5. FIRE FIGHTING MEASURES

Extinguishing Media: water spray, dry chemical, carbon dioxide (CO2), foam

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. USE WATER WITH CAUTION. Material will float and may ignite on surface of water. Use water spray to keep fire-exposed containers cool.

Hazardous Combustion Products: carbon dioxide, carbon monoxide

Unusual Fire and Explosion Hazards: Forms peroxides of unknown stability. Classified as combustible.

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6. ACCIDENTAL RELEASE MEASURES

Eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams.

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7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling.

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Prevention of Fire and Explosion: Keep away from heat and flame. Keep from contact with oxidizing materials. Minimize exposure to air. After opening, purge container with nitrogen before reclosing. If peroxide formation is suspected, do not open or move container. Do not allow to evaporate to near dryness. Distill with caution. Addition of water or appropriate reducing materials will lessen peroxide formation.

Storage: Keep container closed. Store away from heat and light.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

ACGIH Threshold Limit Value (TLV): not established

Eastman Chemical Company industrial hygiene guideline: 2-butoxyethyl acetate: 25 ppm TWA

OSHA (USA) Permissible Exposure Limit (PEL, 1989 Table Z-1-A values or section-specific standards): not established

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: organic vapor If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134.

Eye Protection: Wear safety glasses with side shields (or goggles) and a face shield.

Skin Protection: Wear chemical-resistant gloves, boots, and protective clothing appropriate for the risk of exposure.

Recommended Decontamination Facilities: eye bath, washing facilities, safety shower

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9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical Form: liquid
- Color: colorless
- Odor: mild
- Odor Threshold: not available
- Specific Gravity at 20°C (68°F) (water = 1): 0.94
- Vapor Pressure at 20°C (68°F): 0.39 mbar (0.29 mm Hg)
- Vapor Density (Air = 1): 5.5

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- Evaporation Rate (n-butyl acetate = 1): 0.03
- Boiling Point: 186°C (367°F)
- Melting Point: -64.6°C (-84.3°F)
- Viscosity at 20°C (68°F): 1.8 mPa.s or cP
- Solubility in Water: 1.1 %
- pH: not available
- Octanol/Water Partition Coefficient: not available
- Flash Point (Tag closed cup): 71°C (160°F)
- Lower Explosive Limit at 93°C (200°F): 0.88 volume %
- Upper Explosive Limit at 135°C (275°F): 8.5 volume %
- Autoignition Temperature (ASTM D2155): 340°C (645°F)
- Sensitivity to Mechanical Impact: insensitive at 100 kg-cm
- Sensitivity to Static Discharge: not available

10. STABILITY AND REACTIVITY

Stability: Stable; however, forms peroxides of unknown stability.

Incompatibility: Material can react with strong oxidizing agents.

Hazardous Polymerization: will not occur

11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

General: May cause blood disorders based on animal data. May cause kidney damage based on animal data.

Inhalation: Harmful if inhaled.

Eyes: Low hazard for usual industrial handling or commercial handling by trained personnel.

Skin: Harmful if absorbed through skin.

Ingestion: Expected to be a low ingestion hazard.

Acute Toxicity Data:

Oral LD-50 (rat): 7.46 mL/kg
Oral LD-50 (male rat): 3.0 g/kg
Oral LD-50 (female rat): 2.4 g/kg
Oral LD-50 (mouse): 3.2 g/kg
Inhalation LC-50 (rat): >450 ppm/6 hour(s) (highest concentration obtainable)
Dermal LD-50 (rabbit): 1.58 mL/kg
Dermal LD-50 (rabbit): 1.5 g/kg
Skin irritation (guinea pig): slight
Eye irritation (rabbit, unwashed eyes): very slight

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Eye irritation (rabbit, washed eyes): very slight

Definitions for the following section(s): LOEL = lowest-observed-effect level, NOAEL = no observed-adverse-effect level, NOEL = no-observed-effect level.

Subchronic Toxicity Data:

Inhalation study (1 month, male rat): LOEL = 400 ppm (minor target organ effects: blood) (highest concentration tested); NOEL = not established

Inhalation study (1 month, female rat): LOEL = 400 ppm (minor target organ effects: blood) (target organ effects: kidney) (highest concentration tested); NOEL = not established

Inhalation study (1 month, rabbit): LOEL = 400 ppm (target organ effects: blood) (target organ effects: kidney) (highest concentration tested); NOEL = not established

Inhalation study (10 months, rat): NOEL = 100 ppm (highest concentration tested)

Inhalation study (10 months, rabbit): NOEL = 100 ppm (highest concentration tested)

Metabolism data (in vitro): This product is metabolized to another material: 2-butoxyethanol; See MSDS for 2-butoxyethanol for additional data.

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12. ECOLOGICAL INFORMATION

This material has not been tested for environmental effects.

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13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

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14. TRANSPORT INFORMATION

- DOT (USA) Status: quantities of 450 liters (119 gallons) or less are not regulated; the following requirements apply to larger quantities
- Class combustible liquid, packing group III

- Air - International Civil Aviation Organization (ICAO)
- ICAO Status: not regulated

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- Sea - International Maritime Dangerous Goods (IMDG)
- IMDG Status: not regulated

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15. REGULATORY INFORMATION

- This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.
- OSHA hazardous chemical(s): 2-butoxyethyl acetate

- California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): material(s) known to the State to cause cancer: none
- California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): material(s) known to the State to cause adverse reproductive effects: none
- Massachusetts Substance List: none
- New Jersey Workplace Hazardous Substance List: 2-butoxyethyl acetate
- Pennsylvania Hazardous Substance List: 2-butoxyethyl acetate

- This document has been prepared in accordance with the MSDS requirements of the WHMIS Controlled Products Regulation.
- WHMIS (Canada) Ingredient Disclosure List: none
- WHMIS (Canada) Status: controlled
- WHMIS (Canada) controlled material(s): 2-butoxyethyl acetate
- WHMIS (Canada) Hazard Classification: B/3, D/2/A

- Carcinogenicity Classification (components present at 0.1% or more):

  - International Agency for Research on Cancer (IARC): not listed
  - American Conference of Governmental Industrial Hygienists (ACGIH): not listed
  - National Toxicology Program (NTP): not listed
  - Occupational Safety and Health Administration (OSHA): not listed

- Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: 2-butoxyethyl acetate (glycol ether category)
- Comprehensive Environmental Response Compensation and Liability Act (CERCLA) reportable quantity (RQ): 1 lb (.5 kg)
- SARA (U.S.A.) Sections 311 and 312 hazard classification(s): delayed (chronic) health hazard, fire hazard

- US Toxic Substances Control Act (TSCA): This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing

- Canadian Environmental Protection Act (CEPA) and Domestic Substances List (DSL): This product is listed on the DSL. Any impurities present in this product are exempt from listing.

>- European Inventory of Existing Commercial Chemical Substances (EINECS): This
> product is not listed on EINECS. EINECS No.: 2039349

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- Australian Inventory of Chemical Substances (AICS) and National Industrial Chemicals Notification and Assessment Scheme (NICNAS): This product is listed on AICS or otherwise complies with NICNAS.

- Japanese Handbook of Existing and New Chemical Substances: This product is listed in the Handbook or has been approved in Japan by new substance notification.

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16. OTHER INFORMATION

Label Statements:

WARNING!
MAY CAUSE BLOOD DISORDERS BASED ON ANIMAL DATA
MAY CAUSE KIDNEY DAMAGE BASED ON ANIMAL DATA
HARMFUL IF INHALED OR ABSORBED THROUGH SKIN
PEROXIDE FORMER
COMBUSTIBLE LIQUID AND VAPOR

Avoid breathing vapor.
Avoid contact with eyes, skin, and clothing.
Do not allow to evaporate to near dryness.
Keep material from heat, light, and flame.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: If inhaled, move to fresh air. Treat symptomatically. Get medical attention. In case of contact, immediately flush eyes and skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If easy to do, remove contact lenses. Get medical attention. Wash clothing before reuse. Destroy or thoroughly clean contaminated shoes.

IN CASE OF FIRE: Use water spray, dry chemical, carbon dioxide (CO2), foam. Use water spray to keep fire-exposed containers cool.

IN CASE OF SPILL: Eliminate all ignition sources. Flush spill area with water spray. Prevent runoff from entering drains, sewers, and streams.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

CAUTION: FOR MANUFACTURING, PROCESSING OR REPACKING BY TRAINED PERSONNEL

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper

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use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

The symbol ">" in the left margin denotes a revision in this section.

EASTMAN

Eastman EB Acetate

Ethylene Glycol Monobutyl Ether Acetate

TYPICAL PROPERTIES*

Evaporation rate, n-BuOAc = 1	0.03
Evaporation rate, ether = 1	403.4
Viscosity, cP, 8% *RS* 1/2-s NC @ 25 C	88
Viscosity, cP, 8% CAB-381-0.5 @ 25 C	65
Neat viscosity, cP @ 20 C	1.80
Dilution ratio, toluene	1.8
Dilution ratio, *VM&P* Naphtha	1.2
Blush resistance, % RH @ 80 F	95
Specific gravity @ 20 /20 C	0.941
Weight/volume @ 20 C, lb/gal	7.84
Weight/volume @ 20 C, kg/L	0.94
Flash point, TCC, F	160
Freezing point, F	-83
Vapor pressure, torr, 20	0.29
Vapor pressure, KPa @ 55 C	0.77
Surface tension, dynes/cm @ 20 C	30.3
Boiling range @ 760 torr C	186-194
Solubility @ 20 C, wt %, in water	1.1
Solubility @ 20 C, wt %, water in	1.6
Azeotrope, BP, C	98.8
Azeotrope, wt % water	71.9
Autoignition temperature, C	340
Refractive index @ 20 C	1.4142
Electrical resistance, megohms	>20
Hansen solubility parameter, total	8.9
Hansen solubility parameter, nonpolar	7.5
Hansen solubility parameter, polar	2.2
Hansen solubility parameter, hydrogen bonding	4.3
Gram molecular weight	160.21

* Notes

- Properties are typical of average lots. Eastman makes no representation that the material in any shipment will conform to the values given. Specifications are available on request.
- Dilution ratio determined with NC.
- KPa vapor pressure values obtained from American Design Institute of Chemical Engineers' Design Institute for Physical Property Data (DIPPR) 801 Database and extrapolated from measured vapor pressure values.
- Azeotrope, weight % water in the vapor phase.
- Electrical resistance was measured by Ransburg paint resistance meter, part no. 7924, model no. 234. Values shown are typical for commercial production. Certain solvents vary in resistivity with age.