

Material Safety Data Sheet

N-Butyl Acetate

EMS Catalog # 11900

Section 1 - Chemical Product and Company Identification

MSDS Name: N-Butyl Acetate

Catalog Numbers: 11900

Synonyms: Acetic Acid Butyl Ester; Butyl Acetate; 1-Butyl Acetate; Butyl Ethanoate.

Company Identification:

Electron Microscopy Sciences

321 Morris Road

Fort Washington, PA 19034

For information, call: 215-646-1566

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
123-86-4	N-butyl acetate	>98.0	204-658-1

Hazard Symbols: None listed.

Risk Phrases: 10 66

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 22.2 deg C. **Warning! Flammable liquid and vapor.** May cause eye and skin irritation. May cause respiratory and digestive tract irritation. May cause central nervous system depression. May cause liver damage. May cause kidney damage. May cause allergic skin reaction. May cause fetal effects based upon animal studies. Forms explosive mixture with air.

Target Organs: Kidneys, central nervous system, liver.

Potential Health Effects

Eye: Vapors may cause eye irritation. May cause chemical conjunctivitis and corneal damage.

Skin: May cause skin irritation. May cause skin sensitization, an allergic reaction,

which becomes evident upon re-exposure to this material. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May cause irritation and dermatitis. May cause cyanosis of the extremities.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Ingestion of large amounts may cause CNS depression.

Inhalation: May cause respiratory tract irritation. May cause effects similar to those described for ingestion. Aspiration may lead to pulmonary edema. Vapors may cause dizziness or suffocation. May cause burning sensation in the chest.

Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. May cause liver and kidney damage. May cause fetal effects.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Combustion generates toxic fumes. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May accumulate static electrical charges, and may cause ignition of its own vapors.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Use foam, dry chemical, or carbon dioxide. Water may be ineffective. Do NOT use straight streams of water.

Flash Point: 22.2 deg C (71.96 deg F)

Autoignition Temperature: 425 deg C (797.00 deg F)

Explosion Limits, Lower: 1.7

Upper: 7.6

NFPA Rating: (estimated) Health: 1; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Use water spray to disperse the gas/vapor. Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as saw dust. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
N-butyl acetate	150 ppm TWA; 200 ppm STEL	150 ppm TWA; 710 mg/m ³ TWA 1700 ppm IDLH (10 percent lower explosive limit)	150 ppm TWA; 710 mg/m ³ TWA

OSHA Vacated PELs: N-butyl acetate: 150 ppm TWA; 710 mg/m³ TWA; 200 ppm STEL; 950 mg/m³ STEL

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: banana-like

pH: Not available.

Vapor Pressure: 15 mm Hg @ 25C

Vapor Density: 4.0 (air=1)

Evaporation Rate:5.8 (CCl₄= 1)

Viscosity: Not available.

Boiling Point: 257 deg F

Freezing/ Melting Point:-107 deg F

Decomposition Temperature:Not available.

Solubility: Slightly soluble in water.

Specific Gravity/ Density:0.883 @ 20°C

Molecular Formula:C₆H₁₂O₂

Molecular Weight:116.0828

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions. Forms explosive mixtures with air (72°F/22°C).

Conditions to Avoid: High temperatures, incompatible materials, ignition sources, excess heat, strong oxidants, plastics, resins, rubber.

Incompatibilities with Other Materials: Water, strong oxidizing agents, strong acids, nitrates, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), potassium-tert-butoxide.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS# :

CAS# 123-86-4: AF7350000

LD50/LC50:

CAS# 123-86-4:

Draize test, rabbit, eye: 100 mg Moderate;

Draize test, rabbit, skin: 500 mg/24H Moderate;

Inhalation, mouse: LC50 = 6 gm/m³/2H;

Inhalation, rat: LC50 = 390 ppm/4H;

Oral, mouse: LD50 = 6 gm/kg;

Oral, rabbit: LD50 = 3200 mg/kg;

Oral, rat: LD50 = 10768 mg/kg;

Skin, rabbit: LD50 = > 17600 mg/kg; < BR.

Carcinogenicity:

CAS# 123-86-4: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: Embryo or Fetus: Fetotoxicity; Specific Developmental Abnormalities: Musculoskeletal, Inhalation rat TCLo= 1500ppm/7H.

Neurotoxicity: No information available.

Mutagenicity: No information available.

Other Studies: No data available.

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 18.0 mg/L; 96 Hr.; Unspecified Bluegill/Sunfish: LC50 = 100.0 mg/L; 96 Hr.; Static condition flea EC50 = 44.0 mg/L; 48 Hr.; 23 degrees C : LC50 = 320.0 mg/L; 96 Hr.; Unspecified riac: Phytobacterium phosphoreum: EC50 = 3100.0-130 mg/L; 5, 15 minutes; Microtox test, 15 degrees C No data available.

Environmental: Based on estimated Koc values of 34 and 233, n-butyl acetate may be subject to moderate-to-high leaching. Volatilization from dry soil surfaces is likely to be rapid. n-Butyl acetate may be susceptible to significant biodegradation in natural water.

Physical: n-Butyl acetate will exist almost entirely in the vapor-phase in the ambient atmosphere due to its relatively high vapor pressure. The half-life for the vapor-phase reaction of n-butyl acetate with photochemically produced hydroxyl radicals has been estimated to be about 6 days in an average atmosphere indicating that this reaction will be the dominant removal mechanism.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	BUTYL ACETATES				BUTYL ACETATES
Hazard Class:	3				3(9.2)
UN Number:	UN1123				UN1123
Packing Group:	II				II
Additional Info:					FLASHPOINT 22 C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 123-86-4 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

CAS# 123-86-4: 4/12b

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 123-86-4: final RQ = 5000 pounds (2270 kg)

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 123-86-4: acute, flammable.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 123-86-4 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 123-86-4 can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

Not available.

Risk Phrases:

R 10 Flammable.

R 66 Repeated exposure may cause skin dryness or cracking.

Safety Phrases:

S 25 Avoid contact with eyes.

WGK (Water Danger/Protection)

CAS# 123-86-4: 1

Canada - DSL/NDSL

CAS# 123-86-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D1B, D2B.

Canadian Ingredient Disclosure List

CAS# 123-86-4 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 123-86-4: OEL-AUSTRALIA:TWA 150 ppm (710 mg/m³);STEL 200 ppm (950 mg/m³) OEL-AUSTRIA:TWA 200 ppm (950 mg/m³) OEL-BELGIUM:TWA 150 ppm (713 mg/m³);STEL 200 ppm (950 mg/m³) OEL-CZECHOSLOVAKIA:TWA 400 mg/m³;STEL 1000 mg/m³ OEL-DENMARK:TWA 150 ppm (710 mg/m³) OEL-FINLAND:TWA 150 ppm (710 mg/m³);STEL 200 ppm (950 mg/m³) OEL-FRANCE:TWA 150 ppm (710 mg/m³);STEL 200 ppm (940 mg/m³) OEL-GERMANY:TWA 200 ppm (950 mg/m³) OEL-HUNGARY:TWA 200 mg/m³;STEL 600 mg/m³ OEL-INDIA:TWA 150 ppm (710 mg/m³);STEL 200 ppm (950 mg/m³) OEL-JAPAN:TWA 200 ppm (950 mg/m³) OEL-THE NETHERLANDS:TWA 150 ppm (710 mg/m³) OEL-THE PHILIPPINES:T

WA 150 ppm (710 mg/m³) OEL-POLAND:TWA 200 mg/m³ OEL-RUSSIA:TWA 200 p
pm;STEL 200 mg/m³ OEL-SWEDEN:TWA 100 ppm (500 mg/m³);STEL 150 ppm (70
0 mg/m³) OEL-SWITZERLAND:TWA 150 ppm (700 mg/m³);STEL 300 ppm OEL-TU
RKEY:TWA 150 ppm (710 mg/m³) OEL-UNITED KINGDOM:TWA 150 ppm (710 mg/m
3);STEL 200 ppm OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH
TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 6/16/1999

Revision # 4 Date: 06/15/2006

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