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**** MATERIAL SAFETY DATA SHEET ****

N-Butyl Acetate
3380

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

SDS Name: N-Butyl Acetate

atalog Numbers:
B395 4, B395-4, B3954, B396 1, B396 4, B396-1, B396-4, B3961, B3964,
B396PB115, B396PB19, B396FB200, B396FB50, B396POP19, B396POP200, B396POP50,
B396POP200, B396POP50, B396RB200, B396RB50, B396RS200, B396RS50,
B396SS115, B396SS19, B396SS200, B396SS28, B396SS50, BP1135 500, BP1135-500,
BP1135500

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

Company Identification: Fisher Scientific
1 Reagent Lane
Fairlawn, NJ 07410

or information, call: 201-796-7100
mergency Number: 201-796-7100
or CHEMTREC assistance, call: 800-424-9300
or International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

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

Hazard Symbols: None Listed.
Risk Phrases: 10 56

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

EMERGENCY OVERVIEW

pearance: clear, colorless liquid. Flash Point: 22.2 deg C.
arning: Flammable liquid and vapor. May cause allergic skin
action. May cause central nervous system depression. May cause
liver damage. May cause kidney damage. May cause fetal effects based
on animal studies. May cause eye and skin irritation. May cause
respiratory and digestive tract irritation. Forms explosive mixture
with air.
arget 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,

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give artificial respiration. If breathing is difficult, give oxygen.
Get medical aid if cough or other symptoms appear.
Notes to Physician:
Treat symptomatically and

**** 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.

Autoignition Temperature: 425 deg C (797.00 deg F)

Flash Point: 22.2 deg C (71.96 deg F)

Explosion Limits, lower: 1.7

Explosion Limits, 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; 200 ppm STEL	150 ppm TWA; 710 mg/m ³ TWA 1700 ppm IDLH	150 ppm TWA; 710 mg/m ³ TWA

OSHA Vacated PELs:

N-butyl acetate:
150 ppm TWA; 710 mg/m³ TWA

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.

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Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 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
Color: clear, colorless
Odor: banana-like
H: Not available.
Boiling Point: 15 mm Hg @ 25C
Vapor Density: 4.0 (air=1)
Evaporation Rate: 5.8 (CCl4=1)
Viscosity: Not available.
Freezing Point: 257 deg F
Freezing/Melting Point: -107 deg F
Decomposition Temperature: Not available.
Solubility in water: Slightly soluble in water.
Specific Gravity/Density: 0.883 @ 200C
Molecular Formula: C5H12O2
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.

Carcinogenicity: N-butyl acetate - 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 Fish: Bluegill/Sunfish: LC50 = 100.0 mg/L; 96 Hr.; Static condition water flea EC50 = 44.0 mg/L; 48 Hr.; 23 degrees C algae: LC50 = 320.0 mg/L; 96 Hr.; Unspecified Bacteria: Phytobacterium phosphoreum: EC50 = 3100.0-130 mg/L; 5, 15 minutes; Microtox test, 15 degrees C

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

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

5 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.

CRA P-Series: None listed.

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RCRA U-Series: None listed.

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

US DOT
Shipping Name: BUTYL ACETATES
Hazard Class: 3
UN Number: UN1123
Packing Group: II
Canadian TDG
Shipping Name: BUTYL ACETATES
Hazard Class: 3
UN Number: UN1123
Other Information: 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

CERCLA Hazardous Substances and corresponding RQs
CAS# 123-86-4: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
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 depleters.
This material does not contain any Class 2 Ozone depleters.

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

N-butyl acetate 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

United Kingdom Occupational Exposure Limits

CAS# 123-86-4: OES-United Kingdom, TWA 150 ppm TWA; 724 mg/m3 TWA

CAS# 123-86-4: OES-United Kingdom, STEL 200 ppm STEL; 966 mg/m3 STEL
United Kingdom Maximum Exposure Limits

Canada

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

This product has a WHMIS classification of E2, D1B, D2B.

CAS# 123-86-4 is listed on Canada's 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)

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OEL-THE NETHERLANDS:TWA 150 ppm (710 mg/m3)
OEL-THE PHILIPPINES:TWA 150 ppm (710 mg/m3)
OEL-POLAND:TWA 200 mg/m3
OEL-RUSSIA:TWA 200 ppm;STEL 200 mg/m3
OEL-SWEDEN:TWA 100 ppm (500 mg/m3);STEL 150 ppm (700 mg/m3)
OEL-SWITZERLAND:TWA 150 ppm (700 mg/m3);STEL 300 ppm
OEL-TURKEY:TWA 150 ppm (710 mg/m3)
OEL-UNITED KINGDOM:TWA 150 ppm (710 mg/m3);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: 8/02/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.
