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SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 03/09/2005
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Version 1.30

Section 1 - Product and Company Information

Product Name	Butyl formate, 97%
Product Number	261521
Brand	Aldrich Chemical
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS, MO 63103 US
Technical Phone:	314 771 5765
Fax:	800 325 5052
Emergency Phone:	414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
BUTYL FORMATE	592-84-7	No	209-772-5	607-017-00-8

Formula C5H10O2
Synonyms Butylester kyseliny mravenci (Czech), Butyl formate, Butyl methanoate

Section 3 - Hazards Identification

Emergency Overview
 Flammable (USA) Highly Flammable (EU). Irritant.
 Irritating to eyes, respiratory system and skin.

HMIS Rating
 Health: 2 Flammability: 3 Reactivity: 0

NFPA Rating
 Health: 2 Flammability: 3 Reactivity: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Inhalation Exposure
 If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
 In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure
 In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Explosion Hazards
 Vapor may travel considerable distance to source of ignition and flash back.

Flash Point: 64.4 °F 18 °C

Autoignition Temp: N/A

Extinguishing Media
Suitable
 Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting Protective Equipment
 Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)
 Flammable liquid. Emits toxic fumes under fire conditions. Vapor may travel considerable distance to source of ignition and flash back.

Exposure Hazard(s)
Material
 Irritant.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s)
 Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
 Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal.

Section 7 - Handling and Storage

Handling
User Exposure
 Avoid contact and inhalation. Do not get in eyes, on skin, on clothing.

Storage
Suitable
 Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

Engineering Controls
 Safety shower and eye bath.

Personal Protective Equipment
Hand
 Rubber gloves.
Eye
 Chemical safety goggles.

General Hygiene Measures

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance	Color
Physical State Clear liquid	Very faintly yellow

Molecular Weight: 102.13 AMU

pH	N/A
BP/BP Range	105 - 107 °C
MP/MP Range	N/A
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	0.89 g/cm ³
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	64.4 °F
Flash Point °C	18 °C
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	1.39
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability

Materials to Avoid

Strong oxidizing agents, Strong acids, Strong bases.

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

Causes eye irritation.

Inhalation

May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion

May be harmful if swallowed.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RECS Number: LQ5500000

Toxicity Data

Oral - Rabbit: 2656 mg/kg (LD50)

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: n-Butyl formate

UN#: 1128

Class: 3

Packing Group: Packing Group II

Hazard Label: Flammable liquid

PIH: Not PIH

IATA

Proper Shipping Name: n-Butyl formate

IATA UN Number: 1128

Hazard Class: 3

Packing Group: II

Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: F+ Xi

Indication of Danger

Highly Flammable, Irritant.

Risk Statements R: 11 36/37

Highly flammable. Irritating to eyes and respiratory system.

Safety Statements S: 9 16 24 33

Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Avoid contact with skin. Take precautionary measures against static discharges.

US Classification and Label Text

Indication of Danger

Flammable (USA) Highly Flammable (EU), Irritant.

Risk Statements

Irritating to eyes, respiratory system and skin.

Safety Statements

Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

