

**BUTYL FORMATE****0402**

March 1996

**CAS No: 592-84-7**  
 RTECS No: LQ5500000  
 UN No: 1128  
 EC No: 607-017-00-8

Formic acid, butyl ester  
 n-Butyl formate  
 $C_5H_{10}O_2$  /  $HCOO(CH_2)_3CH_3$   
 Molecular mass: 102.1

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
<b>FIRE</b>	Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Foam, alcohol-resistant foam, powder, carbon dioxide.
<b>EXPLOSION</b>	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Do NOT use compressed air for filling, discharging, or handling.	In case of fire: keep drums, etc., cool by spraying with water.

EXPOSURE		PREVENT GENERATION OF MISTS!	
<b>Inhalation</b>	Burning sensation. Cough. Drowsiness. Sore throat.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Refer for medical attention.
<b>Skin</b>	Redness. Pain.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
<b>Eyes</b>	Redness. Pain. Blurred vision.	Safety goggles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
<b>Ingestion</b>	Abdominal pain. Vomiting. (Further see Inhalation).	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: self-contained breathing apparatus.	F Symbol Xi Symbol R: 11-36/37 S: (2-)9-16-24-33 Note: C UN Hazard Class: 3 UN Pack Group: II

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-30GF1-I+II NFPA Code: H2; F3; R0	Fireproof. Separated from strong oxidants.

### IMPORTANT DATA

**Physical State; Appearance**

COLOURLESS LIQUID, WITH PUNGENT ODOUR.

**Physical dangers**

The vapour mixes well with air, explosive mixtures are easily formed. As a result of flow, agitation, etc., electrostatic charges can be generated.

**Chemical dangers**

The substance decomposes on heating or on burning producing irritating fumes. Reacts violently with strong oxidants.

**Occupational exposure limits**

TLV not established.

**Routes of exposure**

The substance can be absorbed into the body by inhalation and by ingestion.

**Inhalation risk**

No indication can be given about the rate in which a harmful concentration in the air is reached on evaporation of this substance at 20/C.

**Effects of short-term exposure**

The vapour is strongly irritating to the eyes and the respiratory tract. The substance is irritating to the skin. The substance may cause effects on the central nervous system. Exposure at high level may result in unconsciousness.

### PHYSICAL PROPERTIES

Boiling point: 107/C

Melting point: -90/C

Relative density (water = 1): 0.9

Solubility in water: poor

Vapour pressure, kPa at 25/C: 4.0

Relative vapour density (air = 1): 3.5

Relative density of the vapour/air-mixture at 20/C (air = 1): 1.1

Flash point: 18/C c.c.

Auto-ignition temperature: 322/C

Explosive limits, vol% in air: 1.7-8

Octanol/water partition coefficient as log Pow: 1.32

### ENVIRONMENTAL DATA

### NOTES

The relation between odour and the occupational exposure limit cannot be indicated.

Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

### ADDITIONAL INFORMATION

**LEGAL NOTICE**

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible