Section 1 - Product and Company Information

Product Name  BUTYL ACRYLATE, 99+%  
Product Number  234923  
Brand  ALDRICH

Company  Sigma-Aldrich  
Address  3050 Spruce Street  
SAINT LOUIS MO 63103 US

Technical Phone:  800-325-5832  
Fax:  800-325-5052  
Emergency Phone:  314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name  BUTYL ACRYLATE  
CAS #  141-32-2  
SARA 313  Yes

Formula  C7H12O2
Synonyms  Acrylic acid, butyl ester * Acrylic acid n-butyl ester * n-Butyl acrylate (ACGIH) * Butylester kyseliny akrylove (Czech) * Butyl 2-propenoate
RTECS Number:  UD3150000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Toxic (USA) Harmful (EU). Flammable.  
Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.  
Lachrymator.

HMIS RATING
HEALTH: 3  
FLAMMABILITY: 3  
REACTIVITY: 0

NFPA RATING
HEALTH: 3  
FLAMMABILITY: 3  
REACTIVITY: 0

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

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

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

FLAMMABLE HAZARDS
Flammable Hazards: Yes

EXPLOSION HAZARDS
Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT
96.8 °F   36 °C   Method: closed cup

EXPLOSION LIMITS
Lower: 1.3 %   Upper: 9.9 %

AUTOIGNITION TEMP
293 °C

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

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.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage
HANDLING
User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep container closed. Keep away from heat, sparks, and open flame.

SPECIAL REQUIREMENTS
Heat and light sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Hand: Compatible chemical-resistant gloves. Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling. Wash contaminated clothing before reuse.

EXPOSURE LIMITS, RTECS

<table>
<thead>
<tr>
<th>Country</th>
<th>Source</th>
<th>Type</th>
<th>Value</th>
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<td>TWA</td>
<td>2 PPM</td>
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<tr>
<td>New Zealand</td>
<td>OEL</td>
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<td>check ACGIH TLV</td>
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<td>NIOSH</td>
<td>TWA</td>
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EXPOSURE LIMITS

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Section 9 - Physical/Chemical Properties

Appearance
Physical State: Liquid
Color: Colorless
Form: Clear liquid

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<thead>
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<th>Property</th>
<th>Value</th>
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<tr>
<td>pH</td>
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<td>BP/BP Range</td>
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<tr>
<td>MP/MP Range</td>
<td>N/A</td>
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<tr>
<td>Freezing Point</td>
<td>N/A</td>
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<tr>
<td>Vapor Pressure</td>
<td>3.3 mmHg</td>
<td>20 °C</td>
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<td>Vapor Density</td>
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<tr>
<td>Saturated Vapor Conc.</td>
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<tr>
<td>SG/Density</td>
<td>0.898 g/cm3</td>
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</table>
Bulk Density: N/A
Odor Threshold: 0.0001 ppm
Volatile%: N/A
VOC Content: N/A
Water Content: N/A
Solvent Content: N/A
Evaporation Rate: N/A
Viscosity: 0.75 Pas 20 °C
Surface Tension: 20 mN/m 27 °C
Partition Coefficient: Log Kow: 2.38
Decomposition Temp.: N/A
Flash Point: 96.8 °F 36 °C Method: closed cup
Explosion Limits: Lower: 1.3 % Upper: 9.9 %
Flammability: N/A
Autoignition Temp: 293 °C
Refractive Index: 1.418
Optical Rotation: N/A
Miscellaneous Data: N/A
Solubility: Solubility in Water: Slightly. Other Solvents: ACETONE, DIETHYL ETHER, ETHANOL, ETHER

N/A = not available

Section 10 - Stability and Reactivity

STABILITY
Stable: Stable.
Materials to Avoid: Strong oxidizing agents, Strong acids, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE
Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Lachrymator. Causes eye irritation.
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

SENSITIZATION
Skin: May cause allergic skin reaction.

SIGNS AND SYMPTOMS OF EXPOSURE
Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA
Oral
Rat
900 mg/kg
LD50

Inhalation
Rat
2,730 ppm
LC50

Intraperitoneal
Rat
550 MG/KG
LD50

Oral
Mouse
5880 mg/kg
LD50
Remarks: Lungs, Thorax, or Respiration: Other changes.

Inhalation
Mouse
7,800 mg/m3
LC50

Intraperitoneal
Mouse
200 ML/KG
LD50
Remarks: Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Respiratory stimulation.

Skin
Rabbit
2 ML/KG
LD50

Inhalation
Mammal
7,800 mg/m3
LC50

IRRITATION DATA

Skin
Rabbit
10 mg
24H
Remarks: Open irritation test

Skin
Rabbit
500 mg
Remarks: Open irritation test

Eyes
Rabbit
50 mg
Remarks: Mild irritation effect

Eyes
Rabbit
500 mg
24H
Remarks: Mild irritation effect

IARC CARCINOGEN LIST
Rating: Group 3

ACGIH CARCINOGEN LIST
Rating: A4

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 135 PPM/6H
Route of Application: Inhalation
Exposure Time: (6-15D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g.,
death and/or resorbed implants per total number of implants).

Species: Rat
Dose: 135 PPM/6H
Route of Application: Inhalation
Exposure Time: (6-15D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g.,
death and/or resorbed implants per total number of implants).
Maternal Effects: Other effects.

Section 12 - Ecological Information

N/A

ACUTE ECOTOXICITY TESTS
Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 48 h
Value: 8.2 mg/l

Test Type: LC50 Fish
Species: Onchorhynchus mykiss (Rainbow trout)
Time: 96 h
Value: 5.2 mg/l

ADDITIONAL RESULTS/DATA FROM RELEVENT SCIENTIFIC EXPERIMENTS

Avoid contamination of the environment

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose
of this material. 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: Butyl acrylates, inhibited
UN#: 2348
Class: 3
Packing Group: Packing Group III
Hazard Label: Flammable liquid
PIH: Not PIH

IATA
Proper Shipping Name: Butyl acrylates, stabilized
IATA UN Number: 2348
Hazard Class: 3
Packing Group: III

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: Xi
Indication of Danger: Irritant.
R: 10-36/37/38-43
Risk Statements: Flammable. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.
S: 9
Safety Statements: Keep container in a well-ventilated place.

US CLASSIFICATION AND LABEL TEXT
Risk Statements: Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.
Safety Statements: Keep container in a well-ventilated place. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves.
US Statements: Lachrymator.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: Yes
DEMINIMIS: 1 %
NOTES: This product is subject to SARA section 313 reporting requirements.
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
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