

# SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

Creation Date: Aug 12, 2017

Revision Date: Aug 12, 2017

## 1.Identification

### 1.1GHS Product identifier

Product name	Butyl methacrylate
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### 1.2Other means of identification

Product number	–
Other names	BUTYLMETHACRYLATE

### 1.3Recommended use of the chemical and restrictions on use

Identified uses	For industry use only. Intermediates
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Uses advised against	no data available
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## 2.Hazard identification

### 2.1Classification of the substance or mixture

Flammable liquids, Category 3


Skin irritation, Category 2

Eye irritation, Category 2

Skin sensitization, Category 1

Specific target organ toxicity – single exposure, Category 3

### 2.2GHS label elements, including precautionary statements

Pictogram(s)	
Signal word	Warning
Hazard	H226 Flammable liquid and vapour

statement(s)	<p>H315 Causes skin irritation</p> <p>H319 Causes serious eye irritation</p> <p>H317 May cause an allergic skin reaction</p> <p>H335 May cause respiratory irritation</p>
Precautionary statement(s)	
Prevention	<p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P233 Keep container tightly closed.</p> <p>P240 Ground and bond container and receiving equipment.</p> <p>P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.</p> <p>P242 Use non-sparking tools.</p> <p>P243 Take action to prevent static discharges.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P264 Wash ... thoroughly after handling.</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P272 Contaminated work clothing should not be allowed out of the</p>

	<p>workplace.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p>
<b>Response</b>	<p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].</p> <p>P370+P378 In case of fire: Use ... to extinguish.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water/...</p> <p>P321 Specific treatment (see ... on this label).</p> <p>P332+P313 If skin irritation occurs: Get medical advice/attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P337+P313 If eye irritation persists: Get medical advice/attention.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/attention.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p>

	P312 Call a POISON CENTER/doctor/...if you feel unwell.
Storage	P403+P235 Store in a well-ventilated place. Keep cool. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.
Disposal	P501 Dispose of contents/container to ...

### 2.3 Other hazards which do not result in classification

none

## 3. Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Butyl methacrylate	Butyl methacrylate	97-88-1	none	100%

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## **4.First-aid measures**

### **4.1Description of necessary first-aid measures**

#### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### **If inhaled**

Fresh air, rest. Half-upright position. Refer for medical attention.

#### **In case of skin contact**

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

#### **In case of eye contact**

Rinse with plenty of water (remove contact lenses if easily possible).

#### **If swallowed**

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

### **4.2Most important symptoms/effects, acute and delayed**

Inhalation may cause nausea because of offensive odor. Contact with liquid causes irritation of eyes and mild irritation of skin. Ingestion causes irritation of mouth and stomach. (USCG, 1999)

### **4.3Indication of immediate medical attention and special treatment needed, if necessary**

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Esters and related compounds/

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## **5.Fire-fighting measures**

### **5.1Extinguishing media**

#### **Suitable extinguishing media**

Foam, dry chemical, carbon dioxide.

### **5.2Specific hazards arising from the chemical**

Behavior in Fire: Containers may explode due to polymerization. (USCG, 1999)

### **5.3Special protective actions for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

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## **6.Accidental release measures**

### **6.1Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### **6.2Environmental precautions**

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### **6.3Methods and materials for containment and cleaning up**

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker

exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

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## **7. Handling and storage**

### **7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

### **7.2 Conditions for safe storage, including any incompatibilities**

Fireproof. Separated from oxidants. Cool. Dry. Keep in the dark. Store only if stabilized. Store in an area without drain or sewer access. Temp during storage must be kept low to minimize formation of peroxides and other oxidation products ... Storage temp below 30°C are recommended for the polyfunctional methacrylates ... The methacrylate monomers should not be stored for longer than one year. Shorter storage times are recommended for the aminomethacrylates, ie, three months, and the polyfunctional methacrylates, ie, six months. Many of these compd are sensitive to UV light and should, therefore, be stored in the dark. The methacrylic esters may be stored in mild steel, stainless steel, or aluminum. /Methacrylic acid & derivatives/

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## **8. Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Occupational Exposure limit values**

no data available

#### **Biological limit values**

no data available

### **8.2 Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.



### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Respiratory protection

Wear dust mask when handling large quantities.

#### Thermal hazards

no data available

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### 9. Physical and chemical properties

Physical state	clear colourless liquid with an ester-like odour
Colour	Colorless liquid
Odour	Faint characteristic odor of esters

Melting point/ freezing point	-25° C(lit.)
Boiling point or initial boiling point and boiling range	162-165° C(lit.)
Flammability	Flammable.
Lower and upper explosion limit / flammability limit	Lower flammable limit: 2% in air; Upper flammable limit: 8% in air (estimates)
Flash point	54° C
Auto-ignition temperature	294.44° C
Decomposition temperature	no data available

pH	no data available
Kinematic viscosity	3.116 cP at 70 deg F
Solubility	In water:3 g/L (20 °C)
Partition coefficient n-octanol/water (log value)	log Kow = 2.88
Vapour pressure	2 mm Hg ( 20 ° C)
Density and/or relative density	0.894g/mL at 25° C(lit.)
Relative vapour density	4.91 (15 ° C, vs air)
Particle characteristics	no data available

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## 10.Stability and reactivity

### 10.1Reactivity

no data available

### 10.2Chemical stability

Stable under recommended storage conditions.

### 10.3Possibility of hazardous reactions

FlammableAs a result of flow, agitation, etc., electrostatic charges can be generated.N-BUTYL METHACRYLATE reacts exothermically with acids. Reacts with oxidizing agents. Strong oxidizing acids may cause a reaction that is sufficiently exothermic to ignite the reaction products. Heat is generated with caustic solutions. Generates flammable hydrogen with alkali metals and hydrides. Polymerizes easily .

### 10.4Conditions to avoid

no data available

### 10.5Incompatible materials

May accumulate static electrical charges and cause ignition of its vapors.

### 10.6Hazardous decomposition products

When heated to decomp it emits acrid smoke and irritating fumes.

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## 11.Toxicological information

### Acute toxicity

- Oral: LD50 Mouse oral 15,800 mg/kg

- Inhalation: LC50 Rat inhalation 19.7 mg/L (approx 3388 ppm) (hypercolemia of organs, emphysematous swelling and point hemorrhages of lungs; circulation disturbances in the organs persisted for 2 weeks, emphysema and lung hemorrhages for one month)
- Dermal: no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

no data available

**Reproductive toxicity**

no data available

**STOT-single exposure**

no data available

**STOT-repeated exposure**

no data available

#### Aspiration hazard

no data available

## 12. Ecological information

### 12.1 Toxicity

- Toxicity to fish: LC50; Species: Pimephales promelas (Fathead minnow); Conditions: flow-through; Concentration: 11 mg/L for 96 hr
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (water flea); Conditions: static, closed vessels; Concentration: 32 mg/L for 48 hr; Effect: immobilization
- Toxicity to algae: EC50; Species: Pseudokirchneriella subcapitata (algae); Conditions: static; Concentration: 130 mg/L for 72 hr; Effect: growth rate
- Toxicity to microorganisms: no data available

### 12.2 Persistence and degradability

AEROBIC: n-Butyl methacrylate reached 38% of its theoretical BOD after 28 days(1). n-butyl methacrylate, present at 100 mg/L, reached 88% of its Theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(2).

### 12.3 Bioaccumulative potential

An estimated BCF of 37 was calculated in fish for n-butyl methacrylate(SRC), using a log Kow of 2.88(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is moderate(SRC).

### 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of n-butyl methacrylate can be estimated to be 55(SRC). According to a classification scheme(2), this estimated Koc value suggests that n-butyl acrylate is expected to have high mobility in soil.

### 12.5 Other adverse effects

no data available

### 13. Disposal considerations

#### 13.1 Disposal methods

##### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

##### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

### 14. Transport information

#### 14.1 UN Number

ADR/RID: UN2227	IMDG: UN2227	IATA: UN2227
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#### 14.2 UN Proper Shipping Name

ADR/RID: n-BUTYL METHACRYLATE, STABILIZED
IMDG: n-BUTYL METHACRYLATE, STABILIZED
IATA: n-BUTYL METHACRYLATE, STABILIZED

#### 14.3Transport hazard class(es)

ADR/RID: 3	IMDG: 3	IATA: 3
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#### 14.4Packing group, if applicable

ADR/RID: III	IMDG: III	IATA: III
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#### 14.5Environmental hazards

ADR/RID: no	IMDG: no	IATA: no
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#### 14.6Special precautions for user

no data available

#### 14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

### 15.Regulatory information

#### 15.1Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
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Butyl methacrylate	Butyl methacrylate	97-88-1	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

## 16. Other information

### Information on revision

Creation Date	Aug 12, 2017
Revision Date	Aug 12, 2017

### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

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