

SPI Supplies Division

Structure Probe, Inc.

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Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: February 19, 2019

SPI Catalog #'s 02825-CA, 02825-AB

SPI-Chem™ n-Butyl Methacrylate

Component of 02630-AA, 02630-AB

SPI-Chem Low Acid GMA TEM Kit,

Section 1.1: Identification

Chemical Name/Synonyms n-Butyl Methacrylate; 2-Methyl-butylacrylate; 2-Methylacrylic acid, butyl ester

Product or Trade Name SPI-Chem™ n-Butyl Methacrylate

CAS #'s 97-88-1

Chemical Formula..... C₈H₁₄O₄

Section 1.2: Relevant Uses/Restrictions

Laboratory chemical for use in embedding resins.

Section 1.3: Supplier of the Safety Data Sheet

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Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

Section 2: Hazard Identification

2.1 Classification of the substance

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS):

2.2 Label elements

Flammable liquids: Category 3

Skin irritation: Category 2

Eye irritation: Category 2A

Skin sensitization: Category 1

Specific target organ toxicity - single exposure: Category 3

Pictogram



Signal Word: Warning

Hazard statements:

H226: Flammable liquid and vapor.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

Precautionary statements:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. – No smoking.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P240 Ground/ bond container and receiving equipment.

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P362 Take off contaminated clothing and wash before reuse.

P405 Store locked up.

P501 Dispose of contents/ container in accordance with local/ regional/ national/ international regulations.

WHMIS classification:

B3 – Combustible liquid.

D2B – Toxic material causing other toxic effects.

2.3 Other Hazards:

Results of PBT and vPvB assessment:

PBT: Not applicable.

vPvB: Not applicable

Hazardous Material Information System USA

Health 1
Fire Hazard 2
Reactivity 1
Personal Protection

NFPA Rating (estimated)

Health 1
Flammability..... 2
Reactivity 1

Section 3: Composition

3.1 Substances:

n-Butyl methacrylate CAS # 97-88-1 EC # 202-615-1 >99%

Stabilized with: 4-Methoxyphenol (CAS # 150-76-5).

Section 4: First Aid Measures

4.1 Description of first aid measures:

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Skin: Immediately wash off with soap and plenty of water. Immediately consult a physician.

Eye: Rinse opened eye thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed:

- Causes skin irritation.
- Causes serious eye irritation.
- May cause respiratory irritation.
- May cause an allergic skin reaction.

4.3 Indication of any immediate medical attention and special treatment needed:

No further relevant information available.

Section 5: Fire Fighting Measures

5.1 Extinguishing media:

Suitable extinguishing agents: Carbon dioxide, Extinguishing powder, or water spray.
Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture:

Danger of containers bursting upon heating.

5.3 Hazardous combustion products:

Under fire conditions, carbon monoxide and carbon dioxide may be released.

5.4 Advice for firefighters:

Special protective equipment and precautions for firefighters:

Wear a self-contained respirator.

Wear fully protective impervious suit.

Section 6: Accidental Release Measures

6.1 Personal precautions:

Wear protective equipment.

Keep unprotected persons away.

Ensure adequate ventilation.

Keep away from ignition sources.

6.2 Environmental precautions:

Do not allow product to reach sewage system or any water course.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

Keep away from ignition sources.

6.4 Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Protective measures:

Keep container tightly sealed.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Keep ignition sources away.

7.2 Conditions for safe storage, including any incompatibilities:

Refrigerate. Store at °2 to 8 °C.

Store in the dark.

Protect from heat.

Keep container tightly closed.

Protect from exposure to light.

7.3 Specific end uses:

Laboratory chemical for use in embedding resins.

This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or

animal consumption.

Section 8: Exposure Controls and Personal Protection

8.1 Control parameter and Personal Protection:

Workplace exposure limits:

EL (Canada): Long-term value: 50 ppm

Biological limit values: No data available.

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

8.2.2 Individual protection measures:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages, and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.

Recommended filter device for short term use: Use a respirator with multi-purpose combination (US) or type ABEK (EN 14387) as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards such as NIOSH (USA) or CEN (EU).

Protection of hands:

Impervious gloves.

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Material of gloves: Nitrile rubber, NBR.

Penetration time of glove material (in minutes): 162

Glove thickness: 0.4 mm

Eye protection: Safety glasses with side shields.

Body Protection: Protective work clothing.

8.2.3 Environmental exposure controls:

Do not allow product to reach sewage system or any water course.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Appearance:

Form: Liquid

Odor: Ester-like

Odor threshold: Not determined

pH: Not determined

Melting point/Freezing point: -75 °C (-103 °F)

Boiling point/Boiling point range: 160-163 °C (320-325 °F)

Flash Point: 49 °C (120 °F)

Evaporation rate: Not determined

Flammability (solid, gas): Not determined

Upper/lower flammability or explosive limits:

Lower: 2 Vol %

Higher: 8 Vol %

Vapor Pressure: 3 hPa (2 mm Hg) at 20 °C (68 °F)

Vapor density: Not determined

Relative density: Not determined

Solubility in / Miscibility with Water at 20 °C (68 °F): 3 g/l

Partition coefficient (n-octanol/water): Not determined

Auto-ignition temperature: Not determined

Decomposition temperature: Not determined

Viscosity: Not determined

Explosive properties: Product is not explosive. However, formation of explosive air/vapor mixtures is possible.

Oxidizing Properties: No data available.

9.2 Other information: No further relevant information available.

Section 10: Stability and Reactivity

10.1 Reactivity: No information available.

10.2 Chemical Stability: Stable under recommended storage conditions.

10.3 Possibility of Hazardous Reactions: Danger of polymerization.

10.4 Conditions to avoid: No further relevant information available.

10.5 Incompatible materials: Heat, Light, Ultraviolet radiation, Free radical initiators

10.6 Hazardous decomposition products: Carbon monoxide and carbon dioxide.

Additional information:

Avoid loss of stabilizer.

Unless inhibited, the product can polymerize resulting in a temperature and pressure increase that may rupture the container.

Section 11: Toxicological Information

Information on toxicological effects:

11.1 Information on toxicological effects:

A. Acute toxicity: No effects known.

TEST	ROUTE OF EXPOSURE	SPECIES	DOSE/DURATION
LD50	Oral	Rat	16 mg/kg
LC50	Inhalation	Rat	4910 ppm / 4H
LD50	Intraperitoneal	Rat	2304 mg/kg
LD50	Oral	Rabbit	25 gm/kg
LD50	Administration on skin	Rabbit	11300 µL/kg

B. Skin corrosion/irritation:

Causes skin irritation.

C. Serious eye damage/irritation:

Causes serious eye irritation.

D. Respiratory or skin sensitization:

May cause an allergic skin reaction.

E. Germ cell mutagenicity:

No effects known.

F. Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA, or ACGIH.

OSHA-CA) Occupational Safety & Health Administration): Substance is not listed.

G. Reproductive toxicity:

No effects known.

H. STOT-single exposure:

May cause respiratory irritation.

I.. STOT-repeated exposure:

No effects known.

J. Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

No effects known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Section 12: Ecological Information

12.1 Ecotoxicity:

Toxicity to fish: LC50 - Pimephales promelas (fathead minnow) - 11 mg/l - 96 h

Toxicity to daphnia: EC50 - Daphnia magna (Water flea) - 32 mg/l - 48 h

Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (green algae) - 57 mg/l - 96 h

12.2 Persistence and degradability: No further relevant information available.

12.3 Bio-accumulative potential: No further relevant information available.

12.4 Mobility in soil: No further relevant information available.

Additional ecological information:

General notes:

Do not allow undiluted product or large quantities to reach ground water, water course, or sewage system.

Avoid transfer into the environment.

12.5 Results of PBT and vPvB assessment:

PBT: Not applicable.

vPvB: Not applicable

12.6 Other adverse effects: No further relevant information available.

Section 13: Disposal Considerations

13.1 Waste treatment methods:

Recommendation: Consult local, state, and national regulations to ensure proper disposal.

Uncleaned packaging recommendations: Disposal must be made according to official regulations.

Section 14: Transport Information

DOT



UN number: 2227

Class: 3

Packing group: III

Proper shipping name: n-Butyl methacrylate, stabilized

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG



UN number: 2227

Class: 3

Packing group: III

EMS-No: F-E, S-D

Proper shipping name: n-BUTYL METHACRYLATE, STABILIZED

Marine pollutant: No

IATA



UN number: 2227

Class: 3

Packing group: III

Proper shipping name: n-BUTYL METHACRYLATE, STABILIZED

Special precautions for user: Warning: Flammable liquids.

EMS Number: F-E, S-D

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture:

U.S. Government Regulations:

OSHA Hazards:

Flammable liquids: Category 3

Skin irritation: Category 2

Eye irritation: Category 2A

Skin sensitization: Category 1

Specific target organ toxicity - single exposure: Category 3 (respiratory)

TSCA Inventory: CAS # 97-88-1 is listed on the TSCA Active Inventory List.

SARA 302: This substance is not listed.

SARA 313: This substance is not listed.

State Right to Know Lists:

Massachusetts: CAS # 97-88-1, Butyl methacrylate, is listed.

Pennsylvania: CAS # 97-88-1, Butyl methacrylate, is listed.

New Jersey: CAS # 97-88-1 is listed.

California Prop. 65: No component of this substance is listed.

CANADA:

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations:

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 REACH) for the manufacturing, placing on market and use must be observed. The substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use). Substance is not listed.

15.2 Chemical Safety Assessment: A chemical safety assessment has not been carried out.

Date of Preparation: 19 February 2019.

Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
CMRG: Chemical Manufacturer's Recommended Guidelines
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bio-accumulative and Toxicological
vPvB: very Persistent and very Bio-accumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety Health
ATE: Acute Toxicity Estimates
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
STEL: Short Term Exposure Limit
CEIL: Ceiling
TSCA: Toxic Substances Control Act (USA)
DSL: Domestic Substances List (Canada)
PICCS: Philippine Inventory of Chemicals and Chemical Substances
ENCS: Existing and New Chemical Substances (Japan)
AICS: Australian Inventory of Chemical Substances
IECSC: Inventory of Existing Chemical Substances in China
KECL: Korea Existing Chemicals List

Section 16: Other Information

Disclaimer of Liability:

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