



NORSOCRYL® BUTYL ACRYLATE

1. PRODUCT AND COMPANY IDENTIFICATION

Company

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Acrylic Monomers

Customer Service Telephone Number: 1-800-338-1015
(Monday through Friday, 8:30 AM to 5:30 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: NORSOCRYL® BUTYL ACRYLATE
Synonyms: BUTYL ACRYLATE
Molecular formula: C7H12O2
Chemical family: acrylates
Molecular weight: 128 g/mol
Product use: Intermediate

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: colourless
Physical state: liquid
Odor: like fruit

DANGER!
FLAMMABLE LIQUID AND VAPOR.
HARMFUL OR FATAL IF SWALLOWED.
CAN ENTER LUNGS AND CAUSE DAMAGE.
CAUSES SKIN IRRITATION.
MAY CAUSE EYE AND RESPIRATORY TRACT IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.

Potential Health Effects

Primary routes of exposure:
Inhalation and skin contact.

Signs and symptoms of acute exposure:

Causes skin irritation. May cause eye irritation. May cause irritation of respiratory tract. Aspiration hazard if swallowed - can enter lungs and cause damage. Symptoms of aspiration may include increased breathing and heart rate, coughing and related signs of respiratory distress. If swallowed, may cause gastrointestinal irritation, nausea,

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vomiting and diarrhea. Prolonged or repeated exposure may cause: Allergic skin reaction: redness, rash. May cause: cough, runny nose, breathing difficulties, eye irritation, excessive tearing, eye pain, dermatitis, itching, rash, (severity of effects depends on extent of exposure).

Skin:

Slightly toxic. Moderately to severely irritating. (based on animal studies)

Inhalation:

Practically nontoxic. Irritating. (based on animal studies)

Eyes:

Moderately irritating. (based on animal studies)

Ingestion:

Slightly toxic to practically nontoxic. (based on animal studies)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	OSHA Hazardous
2-Propenoic acid, butyl ester	141-32-2	99 %	Y
Phenol, 4-methoxy-	150-76-5	10 - 220 PPM	Y

This material is classified as hazardous under Federal OSHA regulation.

The substance(s) marked with a "Y" in the Hazard column above, are those identified as hazardous chemicals under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

4. FIRST AID MEASURES**Inhalation:**

If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin:

In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

Immediately flush eye(s) with plenty of water. Get medical attention if symptoms occur.

Ingestion:

If swallowed, DO NOT induce vomiting. Call a physician or Poison Control Center immediately. If vomiting occurs, have person lean forward. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Flash point 102 °F (39 °C) (closed cup)

Auto-ignition temperature: 559 °F (293 °C) (Method: Literature)



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Lower flammable limit (LFL): 1.5 %(V) (Method: Literature)

Upper flammable limit (UFL): 9.9 %(V) (Method: Literature)

Extinguishing media (suitable):

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media (unsuitable):

Do not use a solid water stream as it may scatter and spread fire.

Protective equipment:

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:

Fight fire from a protected location.

Explosion hazard

Fire fighting equipment should be thoroughly decontaminated after use.

Vapours are heavier than air and may spread along floors.

Fire and explosion hazards:

When burned, the following hazardous products of combustion can occur:

Carbon oxides

A large amount of heat can be generated when monomers are exposed to a fire.

Heated sealed containers can explode.

6. ACCIDENTAL RELEASE MEASURES

In case of spill or leak:

Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel.

Ventilate the area. Eliminate all ignition sources. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as sodium bicarbonate, sodium carbonate, calcium carbonate, clean sand or non-acidic clay and then wet down (dampen) the mixture with water. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal. The sweepings should be wetted down further with water. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.



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7. HANDLING AND STORAGE

Handling

General information on handling:

Keep away from heat, sparks and flames.
Do not taste or swallow.
Do not take internally.
Avoid breathing vapor or mist.
Avoid contact with the skin, eyes and clothing.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Container hazardous when empty.
Vapours are heavier than air and may spread along floors.
Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.
Emptied container retains vapor and product residue.
Follow label warnings even after container is emptied.
RESIDUAL VAPORS MAY EXPLODE ON IGNITION.
DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.
Improper disposal or reuse of this container may be dangerous and/or illegal.

Storage

General information on storage conditions:

This product should be stored in a closed container, away from direct sunlight, at ambient temperatures. An air space is required above the liquid in all containers; avoid storage under an oxygen-free atmosphere. Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. Ensure that all storage and handling equipment is properly grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate when transferring material. All metal and groundable storage containers, including but not limited to drums, cylinders, Returnable Intermodal Bulk Containers (RIBCs) and Class C Flexible Intermodal Bulk Containers (FIBCs) must be bonded and grounded during filling and emptying operations. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497.

Storage stability – Remarks:

The typical shelf-life for this product is 12 months. The stability of this product should be checked periodically; typically every 90 days for bulk containers. Materials recommended for packaging include: stainless steel, aluminum, glass, HDPE, PP or PTFE. Recommended oxygen level is 5 to 8% by volume. Recommended inhibitor level is 10 to 20 ppm. Uninhibited monomer vapors can polymerize and plug relief devices.

Storage incompatibility – General:

Store away from sources of heat and light. Store separate from:

Free radical generators

Peroxides

Strong oxidizing agents

Amines

Rust

Anhydrides



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Aldehydes

Azides

Strong bases

Mercaptans

Halides

Ethers

Mineral acids

Temperature tolerance – Do not store above:
86 °F (30 °C)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

2-Propenoic acid, butyl ester (141-32-2)

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 2 ppm

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

Engineering controls:

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Respiratory protection:

Avoid breathing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. When handling this material, gloves of the following type(s) should be worn: butyl-rubber Wear chemical

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goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

Eye protection:

Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	colourless
Physical state:	liquid
Odor:	like fruit
pH:	not determined
Density:	not determined
Specific Gravity (Relative density):	0.898 (68 °F (20 °C))
Vapor pressure:	0.40 mmHg (68 °F (20 °C))
Vapor density:	4.4 kg/m3 (Method: Literature)
Boiling point/boiling range:	297 °F (147 °C)
Freezing point:	-83 °F (-64 °C)
Melting point/range:	not determined
Solubility in water:	2 g/l 77 °F (25 °C)
Viscosity, dynamic:	0.9 mPa.s 68 °F (20 °C)
Molecular weight:	128 g/mol
Oil/water partition coefficient:	2.4

NORSOCRYL® BUTYL ACRYLATE**10. STABILITY AND REACTIVITY****Stability:**

This material is chemically stable under normal and anticipated storage, handling and processing conditions. However, this material can undergo hazardous polymerization. See HANDLING AND STORAGE section of this MSDS for specified conditions.

Hazardous reactions:

Hazardous polymerisation may occur.

Avoid freezing.

After freezing and thawing, hazardous polymerization can occur if thawed incorrectly.

Materials to avoid:

Free radical generators, Peroxides, Strong oxidizing agents

Amines

Rust

Anhydrides

Aldehydes

Strong bases.

Mercaptans

Halides

Azides

Ethers

Mineral acids

Conditions / hazards to avoid:

An uncontrolled polymerization may produce a rapid release of energy with the potential for an explosion of unvented closed containers or inadequately vented containers. This material polymerizes exothermically in the presence of heat, contamination, oxygen free atmosphere, free radicals, peroxides and inhibitor depletion liberating heat.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products

Carbon oxides

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for NORSOCRYL® BUTYL ACRYLATE**Acute toxicity****Oral:**

Practically nontoxic to slightly toxic. (rat) LD50 between 3,143 - 9,100 mg/kg.

Dermal:

Slightly toxic. (rabbit) LD50 between 1,800 - 3,400 mg/kg.

Inhalation:

Practically nontoxic. (rat) 4 h LC50 between 10.2 - 14.0 mg/l. signs: breathing difficulties, irritation (At high vapour/mist concentrations)

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Practically nontoxic. (rat) 1 h LC50 = 22.9 mg/l.

Skin Irritation:

Moderately to severely irritating. (rabbit)

Eye Irritation:

Moderately irritating. (rabbit)

Skin Sensitization:

Repeated skin exposure. (guinea pig) Skin allergy was observed.

Repeated dose toxicity

Inhalation administration to rat / affected organ(s): eye, nose, liver, upper respiratory tract / signs: irritation, changes in organ weights / (extent of injury depends on severity of exposure)

Drinking water administration to rat / signs: changes in body weight, changes in food or water consumption

Oral administration to rat / affected organ(s): liver / signs: increased organ weight

Chronic inhalation administration to rat / affected organ(s): upper respiratory tract, heart, liver, eye / signs: changes in organ structure or function, changes in organ weights

Carcinogenicity

Chronic inhalation administration to rat / No increase in tumor incidence was reported.

Chronic dermal administration to mouse / affected organ(s): skin / No increase in tumor incidence was reported.

Classified by the International Agency for Research on Cancer as: Group 3: Unclassifiable as to carcinogenicity in humans.

Genotoxicity

Assessment in Vitro:

No genetic changes were observed in laboratory tests using: bacteria, animal cells

Assessment in Vivo:

Both positive and negative responses for genetic changes were observed in laboratory tests using: animals

Developmental toxicity

Exposure during pregnancy. (rat) / No birth defects were observed. (at doses that produce effects in mothers, increased mortality in the offspring)

Exposure during pregnancy. oral (mouse) / Birth defects were observed. (at doses that produce effects in mothers)

Other information

Aspiration hazard

Human experience

Skin contact:

Skin: Skin allergy was observed.

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway

Data on this material and/or its components are summarized below.

Data for NORSOCRYL® BUTYL ACRYLATE

Stability in water:

Half-life = 4 h (77 °F (25 °C) @pH 11 (Hydrolyses slowly.)

Half-life > 1,000 d (77 °F (25 °C) @pH 3 (Hydrolyses slowly.)

Half-life calculated 1,100 d (77 °F (25 °C) @pH 7 (Hydrolyses slowly.)

Biodegradation:

Readily biodegradable. (28 d) biodegradation 61 %

Biological Oxygen Demand:

14 d BOD = 61% ThOD

28 d BOD = 57.80% ThOD

BOD/COD Ratio:

BOD/COD = 60 % (BOD5)

Bioaccumulation:

Octanol Water Partition Coefficient:

log Pow = 2.4

Ecotoxicology

Data on this material and/or its components are summarized below.

Data for NORSOCRYL® BUTYL ACRYLATE

Aquatic toxicity data:

Moderately toxic. *Cyprinodon variegatus* (sheepshead minnow) 96 h LC50 = 2.1 mg/l

Moderately toxic. *Oncorhynchus mykiss* (rainbow trout) 96 h LC50 = 5.2 mg/l

Aquatic invertebrates:

Moderately toxic. *Daphnia magna* (Water flea) 48 h EC50 = 8.2 mg/l

Algae:

Moderately toxic. *Selenastrum capricornutum* 96 h EbC50 = 2.7 mg/l

Chronic toxicity to aquatic invertebrates:

Daphnia magna (Water flea) 21 d NOEC (reproduction) = 0.14 mg/l

Daphnia magna (Water flea) 21 d NOEC (Immobilization) >= 1.2 mg/l

**NORSOCRYL® BUTYL ACRYLATE****13. DISPOSAL CONSIDERATIONS****Waste disposal:**

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14. TRANSPORT INFORMATION**US Department of Transportation (DOT)**

UN Number : 2348
Proper shipping name : Butyl acrylates, stabilized
Class : 3
Packaging group : III
Marine pollutant : no

International Maritime Dangerous Goods Code (IMDG)

UN Number : 2348
Proper shipping name : BUTYL ACRYLATES, STABILIZED
Class : 3
Packaging group : III
Marine pollutant : no
Flash point : 102 °F (39 °C) closed cup

15. REGULATORY INFORMATION**Chemical Inventory Status**

EU. EINECS	EINECS	Conforms to
US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Australia. Industrial Chemical (Notification and Assessment) Act	AICS	Conforms to
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 144)	DSL	All components of this product are on the Canadian DSL list.
Japan. Kashin-Hou Law List	ENCS (JP)	Conforms to
Korea. Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	Conforms to



Material Safety Data Sheet

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China. Inventory of Existing Chemical Substances IECSC (CN) Conforms to
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand NZIOC Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:

Acute Health Hazard, Fire Hazard, Reactivity Hazard

SARA Title III – Section 313 Toxic Chemicals:

<u>Chemical Name</u>	<u>CAS-No.</u>	<u>De minimis concentration</u>	<u>Reportable threshold:</u>	
2-Propenoic acid, butyl ester	141-32-2		1.0 %	10000 lbs (Otherwise used (non-manufacturing/processing)) 25000 lbs (Manufacturing and processing)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

OSHA Regulated Carcinogens (NTP, IARC, OSHA Listed):

NTP:

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

United States – State Regulations

New Jersey Right to Know

<u>Chemical Name</u>	<u>CAS-No.</u>
2-Propenoic acid, butyl ester	141-32-2



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New Jersey Right to Know – Special Health Hazard Substance(s)

<u>Chemical Name</u>	<u>CAS-No.</u>
2-Propenoic acid, butyl ester	141-32-2

Pennsylvania Right to Know

<u>Chemical Name</u>	<u>CAS-No.</u>
2-Propenoic acid, butyl ester	141-32-2

Pennsylvania Right to Know – Environmentally Hazardous Substance(s)

<u>Chemical Name</u>	<u>CAS-No.</u>
2-Propenoic acid, butyl ester	141-32-2

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

16. OTHER INFORMATION

Miscellaneous:

Other information: Refer to National Fire Protection Association (NFPA) Codes 30, 70, 77, and 497 and OSHA 29 CFR 1910.106, for safe handling.

Latest Revision(s):

Revised Section(s):	Updated Corporate Address Change and Rocky Mountain Poison Center Phone Number
Reference number:	000000043707
Date of Revision:	07/11/2011
Date Printed:	07/11/2011

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