



NORSOCRYL® METHYL 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® METHYL ACRYLATE
Synonyms: Not available
Molecular formula: C4 H6 O2
Chemical family: acrylates
Molecular weight: 86 g/mol
Product use: Synthesis intermediate., polymerisation, Acrylic fibres, Resins and powders for moulding

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: Clear - colourless
Physical state: liquid
Odor: pungent

DANGER!
FLAMMABLE LIQUID AND VAPOR.
CAUSES EYE BURNS.
MAY CAUSE BLINDNESS.
CAUSES SKIN IRRITATION.
CAUSES RESPIRATORY TRACT IRRITATION.
HARMFUL IF INHALED OR SWALLOWED.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
MAY CAUSE ALLERGIC SKIN REACTION.

Potential Health Effects

Primary routes of exposure:
Inhalation and skin contact.

Signs and symptoms of acute exposure:

**NORSOCRYL® METHYL ACRYLATE**

Liquid : Can cause burns of eyes. Causes skin irritation. Prolonged or repeated exposure may cause: Allergic skin reaction: redness, rash. If swallowed, may cause severe irritation and injury to the mouth, throat and digestive tract. Vapor: Irritating to eyes and respiratory system.

Skin:

Slightly toxic. Severely irritating. (based on animal studies)

Inhalation:

Practically nontoxic to toxic. Irritating. (based on animal studies)

Eyes:

Severely irritating to corrosive. (based on animal studies)

Ingestion:

Slightly toxic to moderately toxic. (based on animal studies)

Medical conditions aggravated by overexposure:

Skin disorders.

Remarks:

Possible cross sensitization with other acrylates and methacrylates

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS-No. | Wt/Wt | OSHA Hazardous |
|--------------------------------|----------------|--------------|-----------------------|
| 2-Propenoic acid, methyl ester | 96-33-3 | > 99 % | Y |
| Phenol, 4-methoxy- | 150-76-5 | 10 - 220 PPM | Y |

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).

This material is classified as hazardous under Federal OSHA regulation.

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. Call a Poison Control Center.

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:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Ingestion:

If swallowed, DO NOT induce vomiting. Get medical attention immediately. Call a Poison Control Center. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

**NORSOCRYL® METHYL ACRYLATE****5. FIREFIGHTING MEASURES**

Flash point 27.0 °F (-2.8 °C) (closed cup)(Method: Standard NF M 07 036 (DIN 51755))

Auto-ignition temperature: 874 °F (468 °C)

Lower flammable limit (LFL): 2.8 %(V)

Upper flammable limit (UFL): 25 %(V)

Extinguishing media (suitable):

Water spray, Foam, Carbon dioxide (CO₂), Dry chemical

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:

Fire fighting equipment should be thoroughly decontaminated after use.

Fight fire from a protected location.

Explosion hazard

Cool closed containers exposed to fire with water spray.

Closed containers of this material may explode when subjected to heat from surrounding fire.

Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, and other flames and ignition sources at locations distant from material handling point.

Fire and explosion hazards:

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

Heated sealed containers can explode.

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

Carbon oxides

Hazardous organic compounds

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.



NORSOCRYL® METHYL ACRYLATE

7. HANDLING AND STORAGE

Handling

General information on handling:

Keep away from heat, sparks and flames.
Do not taste or swallow.
Do not get in eyes, on skin, or on clothing.
Avoid breathing vapor or mist.
Use only with adequate ventilation.
Wash thoroughly after handling.
Keep container closed.
Container hazardous when empty.
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:

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. This product should be stored in a closed container, away from direct sunlight, at ambient temperatures. 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 – Temperature:–

< 86 °F (< 30 °C)

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. Control free oxygen level : free oxygen is essential to stabilize the product. Maintain in contact with an atmosphere containing between 5 and 7% of oxygen. Never use a system in contact with inert atmospheres for storage. Inhibitor levels should be maintained.

Storage incompatibility – General:

Store separate from:

Combustible materials (e.g., wood, sawdust)

Free radical generators

Peroxides

Strong oxidizing agents

Strong acids



NORSOCRYL® METHYL ACRYLATE

Strong bases

Activated carbons (explosive reaction)

This material polymerizes exothermically in the presence of heat, contamination, oxygen free atmosphere, free radicals, peroxides and inhibitor depletion liberating heat.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

2-Propenoic acid, methyl ester (96-33-3)

US. ACGIH Threshold Limit Values

Time Weighted Average (TWA): 2 ppm
Skin designation
Remarks: Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL: 10 ppm (35 mg/m3)

Skin designation
Remarks: Can be absorbed through the skin.

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

**NORSOCRYL® METHYL ACRYLATE**

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. Consult glove manufacturer to determine appropriate type glove material for given application. Wear chemical 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 there is potential for eye contact, wear a face shield, chemical goggles, and have eye flushing equipment immediately available.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Color: | Clear - colourless |
| Physical state: | liquid |
| Odor: | pungent |
| pH: | not applicable |
| Density: | 950 kg/m ³ (68 °F (20 °C)) |
| Specific Gravity (Relative density): | 0.95 (68 °F (20 °C))Water=1 (liquid) |
| Vapor pressure: | 68 mmHg (68.2 °F (20.1 °C)) 113 mmHg (87.4 °F (30.8 °C)) |
| Relative vapor density: | 3 (Air = 1.0) |
| Vapor density: | 3.58 kg/m ³ (68 °F (20 °C)) |
| Boiling point/boiling range: | 176 °F (80 °C) |
| Melting point: | -105.7 °F (-76.5 °C) |
| Solubility in water: | 60 g/l 68 °F (20 °C) |
| Solubility in other solvents: [qualitative and quantitative] | Soluble in most organic solvents |
| Viscosity, dynamic: | 0.472 mPa.s 77 °F (25 °C) |
| Molecular weight: | 86 g/mol |



NORSOCRYL® METHYL ACRYLATE

Henry's constant: 9.37E+00 Pa.m³/mol (Method: calculated)

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.

Materials to avoid:

Free radical generators, Peroxides, Strong oxidizing agents
Strong acids and strong bases and activated carbons (explosive reaction)

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. Protect from light. Hazardous polymerization may occur upon depletion of inhibitor. Control free oxygen level : free oxygen is essential to stabilize the product.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products
Carbon oxides
Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

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

Data for NORSOCRYL® METHYL ACRYLATE

Acute toxicity

Oral:

Slightly to moderately toxic. (rat) LD50 = 300 - 768 mg/kg.

Slightly toxic. (mouse) LD50 = 826 mg/kg.

Dermal:

Slightly toxic. (rabbit) LD50 = 1,250 mg/kg.

Inhalation:

Practically nontoxic to toxic. (rat) 4 h LC50 3.5 - 6.5 mg/l. (vapor)

Irritating to respiratory system. (rat, mouse) (vapor)

Skin Irritation:

Severely irritating. (rabbit) (4 h)

Eye Irritation:

Severely irritating to corrosive. (rabbit)



NORSOCRYL® METHYL ACRYLATE

Skin Sensitization:

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

Skin sensitizer. LLNA: Local Lymph Node Assay. (mouse) Skin allergy was observed.

Repeated dose toxicity

Subchronic inhalation administration to rat / affected organ(s): Eyes, upper respiratory tract / signs: Irritation / (Repeated exposure at high concentrations, extent of injury depends on severity of exposure)

Chronic inhalation administration to rat / affected organ(s): Upper respiratory tract / signs: Irritation, breathing difficulties, tissue damage / Local irritation of the respiratory system (Repeated exposure at high concentrations, extent of injury depends on severity of exposure)

Subchronic drinking water administration to rat / affected organ(s): Kidney / signs: changes in organ structure or function

Carcinogenicity

Chronic inhalation administration to rat / 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

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

Assessment in Vivo:

No genetic changes were observed in laboratory tests using: fruit flies, mice

Developmental toxicity

Exposure during pregnancy. inhalation (rat) / No birth defects were observed. (levels produced toxic effects in the mothers and offspring)

Reproductive effects

Two generation reproduction study. inhalation (rat) / No toxicity to reproduction

Human experience

Skin contact:

Skin: Skin allergy was observed. Possible cross sensitization with other acrylates and methacrylates

Eye contact:

Eyes: Local irritation. (vapor)

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway

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

Data for NORSOCRYL® METHYL ACRYLATE



NORSOCRYL® METHYL ACRYLATE

Stability in water:

Half-life 1.8 h @pH 11 (Hydrolyses readily.)

Half-life @pH 3 - 7 (28 d) (Not hydrolysable)

Biodegradation:

Readily biodegradable. (28 d) biodegradation 99 - 100 %

Octanol Water Partition Coefficient:

log Pow 0.7 - 0.8 (Slight potential to bioaccumulate.)

Mobility and Distribution in the Environment:

Highly mobile in soils /

Ecotoxicology

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

Data for NORSOCRYL® METHYL ACRYLATE

Aquatic toxicity data:

Moderately toxic. *Oncorhynchus mykiss* (rainbow trout) 96 h LC50 1.81 - 5.2 mg/l

Moderately toxic. *Cyprinodon variegatus* (sheepshead minnow) 96 h LC50 1.1 - 2.1 mg/l

Aquatic invertebrates:

Moderately toxic. *Daphnia magna* (Water flea) 48 h EC(I)50 2.6 mg/l

Algae:

Moderately toxic. *Pseudokirchneriella subcapitata* (green algae) 72 h ErC50 (growth rate) = 3.55 mg/l

Moderately toxic. *Pseudokirchneriella subcapitata* (green algae) 72 h EbC50 (biomass) = 2.02 mg/l

Slightly toxic to moderately toxic. *Desmodesmus subspicatus* (green algae) 72 h EC50 = 1.71 - 38.1 mg/l

Microorganisms:

Activated sludge 72 h Toxicity threshold > 100 mg/l

Pseudomonas putida 17 h EC50 = 260 mg/l

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 : 1919
Proper shipping name : Methyl acrylate, stabilized



Material Safety Data Sheet

NORSOCRYL® METHYL ACRYLATE

Class : 3
Packaging group : II
Marine pollutant : no

International Maritime Dangerous Goods Code (IMDG)

UN Number : 1919
Proper shipping name : METHYL ACRYLATE, STABILIZED
Class : 3
Packaging group : II
Marine pollutant : no
Flash point : 27.0 °F (-2.8 °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 |
| 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



Material Safety Data Sheet

NORSOCRYL® METHYL ACRYLATE

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, methyl ester | 96-33-3 | | 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, methyl ester | 96-33-3 |

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

| <u>Chemical Name</u> | <u>CAS-No.</u> |
|--------------------------------|----------------|
| 2-Propenoic acid, methyl ester | 96-33-3 |

Pennsylvania Right to Know

| <u>Chemical Name</u> | <u>CAS-No.</u> |
|--------------------------------|----------------|
| 2-Propenoic acid, methyl ester | 96-33-3 |

Pennsylvania Right to Know – Environmentally Hazardous Substance(s)

| <u>Chemical Name</u> | <u>CAS-No.</u> |
|--------------------------------|----------------|
| 2-Propenoic acid, methyl ester | 96-33-3 |



Material Safety Data Sheet

NORSOCRYL® METHYL ACRYLATE

California Prop. 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

Chemical Name
2-Propenoic acid, ethyl ester

CAS-No.
140-88-5

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. When used in formulations, contact us for labelling.

Latest Revision(s):

Revised Section(s): Revised all sections.
Reference number: 00000032364
Date of Revision: 11/10/2011
Date Printed: 11/10/2011

NORSOCRYL® is a registered trademark of Arkema Inc.

Arkema Inc. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use are beyond the control of Arkema Inc., Arkema Inc. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.