

MATERIAL SAFETY DATA SHEET

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Version 1.9

Section 1 - Product and Company Information

Product Name ACRYLOSIN

Company Dorn & Hart Microedge, Inc.

Street Address 135 W. Home Ave
City, State, Zip, Country Villa Park, IL 60181 US

Emergency Phone: 630-248-2138

Section 2 - Composition/Information on Ingredient

Substance Name CAS # SARA 313
METHACRYLIC ACID METHYL ESTER 80-62-6 YesFormula C₅H₈O₂Synonyms Acrylic acid, 2-methyl-, methyl ester *
Metakrylan metylu (Polish) * Methacrylate de
methylene (French) * Methacrylsaeuremethyl ester
(German) * 2-(Methoxycarbonyl)-1-propene *
Methylester kyseliny methakrylove (Czech) *
Methylmethacrylaat (Dutch) * Methyl-methacrylat
(German) * Methyl methacrylate (ACGIH:OSHA) *
Methyl methacrylate monomer * Methyl
methacrylate * Methyl alpha-methylacrylate *
Methyl 2-methyl-2-propenoate *
2-Methyl-2-propenoic acid methyl ester * Metil
metacrilato (Italian) * NCI-C50680 * Pegalan *
2-Propenoic acid, 2-methyl-, methyl ester * RCRA
waste number U162

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU). Irritant.
Irritating to eyes, respiratory system and skin. May cause
sensitization by skin contact.
Lachrymator. Target organ(s): Liver. Kidneys.

HMIS RATING

HEALTH: 2*
FLAMMABILITY: 3
REACTIVITY: 2

NFPA RATING

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 2

*additional chronic hazards present.

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

48.2 °F 9 °C Method: closed cup

EXPLOSION LIMITS

Lower: 2.12 % Upper: 12.5 %

AUTOIGNITION TEMP

435 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

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.
Store at 2-8°C

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.
Hand: Wear heavy rubber gloves.
Eye: Chemical safety goggles.
Other: Faceshield (8-inch minimum).

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	100 PPM
USA	MSHA Standard-air	TWA	100 PPM (410 MG/M3)
USA	OSHA.	PEL	8H TWA 100 PPM (410 MG/M3)
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	100 PPM

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	50 MG/M3
Poland		NDSCh	400 MG/M3
Poland		NDSP	-

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Liquid Color: Colorless	
Property	Value	At Temperature or Pressure
Molecular Weight	100.12 AMU	
pH	N/A	
BP/BP Range	98 - 100 °C	
MP/MP Range	-48 °C	
Freezing Point	N/A	
Vapor Pressure	38.5 mmHg	25 °C
Vapor Density	3.5 g/l	

Saturated Vapor Conc.	N/A	
SG/Density	0.943 g/cm ³	
Bulk Density	N/A	
Odor Threshold	0.05 - 0.210 ppm	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	0.63 Pas	20 °C
Surface Tension	28 mN/m	20 °C
Partition Coefficient	Log Kow: 1.38	
Decomposition Temp.	N/A	
Flash Point	48.2 °F 9 °C	Method: closed cup
Explosion Limits	Lower: 2.12 % Upper: 12.5 %	
Flammability	N/A	
Autoignition Temp	435 °C	
Refractive Index	1.414	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water: 15 mg/ml H ₂ O Other Solvents: MEK, THF, ESTERS, AROMATIC AND CHLORINATED HYDRO	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Heat. May polymerize on exposure to light.

Materials to Avoid: Oxidizing agents, Peroxides, Amines, Bases,
Acids, Reducing agents, Halogens.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

STABILIZERS PRESENT

Methyl methacrylate is inhibited with 10 ppm hydroquinone monomethyl ether. Do not store under inert atmosphere. It is advisable to use material within 6 months.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: May undergo autopolymerization

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation. Lachrymator.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

SENSITIZATION

Skin: May cause allergic skin reaction.

TARGET ORGAN(S) OR SYSTEM(S)

Liver. Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE

Exposure can cause CNS depression, drowsiness, light-headedness, and irritability. Ataxia. Narcotic effect.

TOXICITY DATA

Oral

Rat

7872 mg/kg

LD50

Remarks: Behavioral:Muscle weakness. Behavioral:Coma. Lungs, Thorax, or Respiration:Respiratory depression.

Inhalation

Rat

78,000 mg/m³

LC50

Intraperitoneal

Rat

1328 MG/KG

LD50

Subcutaneous

Rat

7088 MG/KG

LD50

Remarks: Behavioral:Somnolence (general depressed activity).

Oral

Mouse

3625 mg/kg

LD50

Inhalation

Mouse

18,500 mg/m³

LC50

Intraperitoneal

Mouse

945 MG/KG

LD50

Remarks: Behavioral:Somnolence (general depressed activity).

Subcutaneous

Mouse

5954 MG/KG

LD50

Remarks: Behavioral:Somnolence (general depressed activity).

Oral

Dog

4725 mg/kg

LD50

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia. Gastrointestinal:Changes in structure or function of salivary glands.

Subcutaneous

Dog

4252 MG/KG

LD50
Remarks: Behavioral:Somnolence (general depressed activity).

Oral
Rabbit
8700 mg/kg
LD50

Skin
Rabbit
> 5000 mg/kg
LD50
Remarks: Skin and Appendages:Skin: After systemic exposure:
Dermatitis, other

Oral
Guinea pig
5954 mg/kg
LD50
Remarks: Behavioral:Somnolence (general depressed activity).
Behavioral:Ataxia. Gastrointestinal:Changes in structure or
function of salivary glands.

Intraperitoneal
Guinea pig
1890 MG/KG
LD50
Remarks: Behavioral:Somnolence (general depressed activity).

Subcutaneous
Guinea pig
5954 MG/KG
LD50
Remarks: Behavioral:Somnolence (general depressed activity).

Inhalation
Mammal
20,000 mg/m³
LC50

IRRITATION DATA

Skin
Rabbit
10,000 mg
KG
Remarks: Open irritation test

Eyes
Rabbit
150 mg

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not
classifiable as to its carcinogenicity based on its IARC, ACGIH,
NTP, or EPA classification.

Species: Rat
Route of Application: Implant
Dose: 1620 MG/KG
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS
criteria. Tumorigenic:Tumors at site or application.

IARC CARCINOGEN LIST

Rating: Group 3

NTP CARCINOGEN LIST

Rating: No evidence.

Species: Mouse/rat

Route: Inhalation

ACGIH CARCINOGEN LIST

Rating: A4

CHRONIC EXPOSURE - TERATOGEN

Result: Possible risk of congenital malformation in the fetus.

Species: Rat

Dose: 109 GM/M3/17M

Route of Application: Inhalation

Exposure Time: (6-15D PREG)

Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities:

Musculoskeletal system.

Species: Rat

Dose: 109 GM/M3/54M

Route of Application: Inhalation

Exposure Time: (6-15D PREG)

Result: Effects on Embryo or Fetus: Fetal death. Specific Developmental Abnormalities: Other developmental abnormalities.

Species: Rat

Dose: 405 MG/KG

Route of Application: Intraperitoneal

Exposure Time: (5-15D PREG)

Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities:

Other developmental abnormalities.

Species: Rat

Dose: 801 MG/KG

Route of Application: Intraperitoneal

Exposure Time: (5-15D PREG)

Result: Specific Developmental Abnormalities: Other developmental abnormalities.

CHRONIC EXPOSURE - MUTAGEN

Species: Rat

Route: Inhalation

Dose: 4 MG/M3/16W

Mutation test: Cytogenetic analysis

Species: Mouse

Dose: 2202 MG/L

Cell Type: lymphocyte

Mutation test: Micronucleus test

Species: Mouse

Dose: 500 MG/L (+S9)

Cell Type: lymphocyte
Mutation test: Mutation in microorganisms

Species: Mouse
Dose: 2799 MG/L
Cell Type: lymphocyte
Mutation test: Cytogenetic analysis

Species: Mouse
Dose: 2202 MG/L
Cell Type: lymphocyte
Mutation test: Cytogenetic analysis

Species: Mouse
Dose: 704 MG/L
Cell Type: lymphocyte
Mutation test: Mutation in mammalian somatic cells.

Species: Hamster
Dose: 1600 MG/L
Cell Type: ovary
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 1500 MG/L
Cell Type: ovary
Mutation test: Sister chromatid exchange

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Woman
Dose: 10 MG/M3
Route of Application: Inhalation
Exposure Time: (9Y PREG)
Result: Maternal Effects: Other effects. Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Effects on Newborn: Delayed effects.

Species: Rat
Dose: 54 MG/M3/24H
Route of Application: Inhalation
Exposure Time: (8W PRE)
Result: Maternal Effects: Menstrual cycle changes or disorders.

Species: Rat
Dose: 4480 MG/M3/2H
Route of Application: Inhalation
Exposure Time: (6-18D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mouse
Dose: 116 PPM/6H
Route of Application: Inhalation
Exposure Time: (4-13D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish
Species: Leuciscus idus
Value: 350 mg/l

Test Type: LC50 Fish
Species: Lepomis macrochirus (Bluegill)
Time: 96 h
Value: 250 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Value: 720 mg/l

Test Type: LC50 Fish
Species: Lepomis macrochirus (Bluegill)
Time: 96 h
Value: 154 - 342 mg/l

Test Type: LC50 Fish
Species: Pimephales promelas (Fathead minnow)
Time: 96 h
Value: 125.5 - 275 mg/l

Test Type: EC50 Algae
Species: Selenastrum capricornutum resp.
Time: 96 h
Value: 170 mg/l

Test Type: LC0 Bacteria
Value: 100 mg/l

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: Methyl methacrylate monomer, inhibited
UN#: 1247
Class: 3
Packing Group: Packing Group II
Hazard Label: Flammable liquid
PIH: Not PIH

IATA

Proper Shipping Name: Methyl methacrylate monomer, stabilized
IATA UN Number: 1247
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F Xi

Indication of Danger: Highly Flammable. Irritant.

R: 11 37/38 43

Risk Statements: Highly flammable. Irritating to respiratory system and skin. May cause sensitization by skin contact.

S: 24 37 46

Safety Statements: Avoid contact with skin. Wear suitable gloves. If swallowed, seek medical advice immediately and show this container or label.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU). Irritant.

Risk Statements: Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact.

Safety Statements: Avoid contact with skin. Wear suitable gloves. If swallowed, seek medical advice immediately and show this container or label.

US Statements: Lachrymator. Target organ(s): Liver. Kidneys.

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 guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.