1. Chemical Product and Company Identification

ACRIFIX® 1R 0192

Synonyms: Solution of an acrylic polymer in methyl methacrylate

Supplier:

Evonik CYRO LLC
299 Jefferson Road
Parsippany, NJ 07054-0677
+1-973-929-8291

Product Information Number	1-207-490-4242
24 Hour Emergency Number, CHEMTREC	1-800-424-9300

(TM) indicates trademark

Product Use: polymerising adhesive for acrylic

2. Composition/Information on Ingredients

This material is classified as hazardous under OSHA regulations.

Ingredients	CAS Reg. No.	Weight %
acrylic copolymer	trade secret	15 - 40
methyl methacrylate	80-62-6	60 - 100

NJTSR # 56705700001-6830P

See Section 8, Exposure Controls/Personal Protection

3. Hazards Identification

Emergency Overview

Color:	slightly violet
Appearance:	viscous
Odor:	ester-like

Flammable liquid and vapor.
May cause skin irritation.
May cause respiratory tract irritation.
May cause allergic skin reaction.
Danger of bursting of closed systems due to vigorous exothermic polymerization.

Primary Routes of Exposure
Inhalation
Eye contact
Skin contact

Potential Health Effects

Inhalation
Inhalation may cause the following:
- irritation of the mucous membrane and upper respiratory tract
- headache
- nausea

Eye Contact
Direct contact with material can cause the following:
- slight irritation

Skin Contact
Direct contact with material can cause the following:
- irritation
- sensitization

Prolonged or repeated skin contact can cause the following:
- defatting
- dermatitis

May be absorbed through the skin.

Ingestion
This product has a low order of acute oral toxicity based on animal test data.

Potential Environmental Effects
See SECTION 12, Ecological Information

4. First Aid Measures

First Aid Procedures

Inhalation
Remove to fresh air. If breathing is difficult, get medical attention.

Eye Contact
In case of contact, immediately flush eyes with plenty of water. Get immediate medical attention.

Skin Contact
Immediately wash skin with soap and plenty of water. Remove contaminated clothing and shoes. Obtain medical attention if irritation develops or persists. Wash clothing before reuse.

Ingestion
Get immediate medical attention. Only induce vomiting if directed by a physician. Never give anything by mouth to an unconscious person.

Note to Physician
Headache , confusion, Causes skin and eye irritation., Skin Sensitisation
no

5. Fire-Fighting Measures

Flash point	10 °C (DIN 51755 / Abel Pensky Closed Cup) (methyl methacrylate)

	50 °F (DIN 51755 / Abel Pensky Closed Cup) (methyl methacrylate)
Ignition temperature	430 °C (DIN 51794) (methyl methacrylate) 806 °F (DIN 51794) (methyl methacrylate)
Lower explosion limit	2.1 %(V) at 10,5°C / 33,8°F (methyl methacrylate)
Upper explosion limit	12.5 %(V) (methyl methacrylate)
OSHA Flammability Classification	Flammable liquid

Other Flammable Properties
Flammable liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint.

Unusual Hazards
May be released in case of fire: carbon monoxide, carbon dioxide, organic products of decomposition. -

Extinguishing Media
Use the following extinguishing media when fighting fires involving this material:
foam - dry chemical - carbon dioxide

Fire Fighting Procedures
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Containers can build up pressure if exposed to heat (fire). Cool with water spray.

6. Accidental Release Measures

Procedures
Remove sources of ignition and ventilate area. Absorb spill with inert material and place in a chemical waste container. Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil. Use personal protective equipment. See Material Safety Data Sheet section 8, Exposure Controls/Personal Protection.

7. Handling and Storage

Handling
Keep away from heat. Keep away from sparks, flames and other sources of ignition. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapor or mist. Use only with adequate ventilation. The need for grounding and bonding of containers in accordance with OSHA 29 CFR 1910.106 and NFPA 77 should be assessed for all product transfers. Container hazardous when empty. Follow all MSDS/label precautions even after the container is emptied. Emptied container retains vapor and product residue. Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.

Storage
Keep in the original container at a temperature not exceeding 30 °C (86 °F). Fill the container by approximately 90 % as oxygen (air) is required for stabilisation. With large storage containers make sure the oxygen (air) supply is sufficient to ensure stability. Store in a cool, dry place. Keep container closed. Protect from light.

Other
Improper disposal or re-use of this container may be dangerous and illegal.

8. Exposure Controls/Personal Protection

Exposure Limit Information

METHYL METHACRYLATE
(CAS Number 80-62-6)
Carcinogen designation(s) USA: EPA-NL; IARC-3; TLV-A4

Occupational Exposure Values :			Remark(s):
ACGIH TLV-TWA	50 ppm	205 mg/m3	Sensitiser
ACGIH TLV-STEL	100 ppm	410 mg/m3	Sensitiser
OSHA PEL-TWA	100 ppm	410 mg/m3	
OSHA PEL-STEL			not established
OEL-TWA (Alberta)	50 ppm	205 mg/m3	
OEL-STEL (Alberta)	100 ppm	410 mg/m3	
OEL-TWA (British Columbia)	50 ppm		Capable of causing respiratory, dermal or conjunctival sensitization.
OEL-STEL (British Columbia)	100 ppm		Capable of causing respiratory, dermal or conjunctival sensitization.
OEL-TWA (Ontario)	50 ppm		
OEL-STEL (Ontario)	100 ppm		
OEL-TWA (Quebec)	50 ppm	205 mg/m3	Sensitiser
OEL-STEL (Quebec)			not established
OEL-TWA (Mexico)	100 ppm	410 mg/m3	Carcinogen Category 4 - not classifiable as a human carcinogen
OEL-STEL (Mexico)	125 ppm	510 mg/m3	Carcinogen Category 4 - not classifiable as a human carcinogen

Engineering Controls (Ventilation)
Use process enclosures, local exhaust ventilation or other engineering controls to control airborne exposure.

Respiratory Protection
A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Eye Protection
Use safety glasses (ANSI Z87.1 or approved equivalent).

Skin Protection
Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

Hand Protection

The glove(s) listed below may provide protection against permeation. Gloves of other chemically resistant materials may not provide adequate protection:
butyl rubber gloves
Chemical-resistant gloves should be worn whenever this material is handled.
Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.
For each work-place a suitable glove type has to be selected.

Other Protective Equipment

A safety shower and eye wash fountain should be readily available. To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

9. Physical and Chemical Properties

Appearance	slightly violet
Physical state	viscous
Odor	ester-like
Flash point	10 °C (DIN 51755 / Abel Pensky Closed Cup) (methyl methacrylate) 50 °F (DIN 51755 / Abel Pensky Closed Cup) (methyl methacrylate)
pH-value	not applicable
Viscosity (dynamic)	1,600 - 2,000 mPa.s at 20 °C / 68 °F (Brookfield)
Specific gravity (water = 1)	ca. 1.02 g/cm3 at 20 °C / 68 °F
Vapor density (air = 1)	> 1 at 20 °C / 68 °F
Vapor pressure	ca. 40 hPa (= mbar) at 20 °C / 68 °F
Melting temperature	not available
Boiling Temperature	ca. 100 °C / 212 °F at 1,013 hPa (= mbar)
Solubility in water	ca. 16 g/l at 20 °C / 68 °F
n-Octanol/water partition coefficient	not available
Evaporation rate	not available
Odor threshold	not available
Further information	none

See Section 5, Fire Fighting Measures

10. Stability and Reactivity

Stability

This product is stable under normal storage conditions.

Conditions To Avoid
See 'Hazardous Polymerization' for conditions to avoid. Polymerization is also induced by light. Keep away from heat.

Incompatibility With Other Materials
Reducing agents. Tertiary amines. Heavy metals. peroxides Free radical initiators. oxidizing agents Mineral acids.

Hazardous Decomposition Products
None when used as directed.

Hazardous Polymerization
The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution. Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions. The same applies to the effect of light or UV-light respectively.

11. Toxicological Information

Acute Oral Toxicity
LD50 rat, OECD 401 > 5,000 mg/kg
Related to substance: methyl methacrylate

Acute Inhalational Toxicity
LC50 rat, 4 h 29.8 mg/l
Related to substance: methyl methacrylate

Acute Dermal Toxicity
LD50 rabbit > 5,000 mg/kg
Related to substance: methyl methacrylate

Irritant Effect on the Skin
Contact with skin may cause irritations.
Related to substance: product

Irritant Effect on the Eyes
Contact with the eyes may cause irritation.
Related to substance: product

Sensitization
In sensitization tests on guinea pigs with and without adjuvant, both positive and negative results were found. In humans various types of allergic reactions have been observed (symptoms: headache, eye irritations, skin affections).
Related to substance: methyl methacrylate

Toxicity on Repeated Administration
rat, inhalation
Findings: Damage to mucous membranes in the nose at 400 ppm
Related to substance: methyl methacrylate

rat, in drinking water
Findings: no toxic effects
Related to substance: methyl methacrylate

Mutagenicity
Positive as well as negative results in *in vitro* mutagenicity/ genotoxicity tests.
No experimental indication of genotoxicity *in vivo* available.
In summary not mutagenic according to internationally accepted criteria.
Related to substance: methyl methacrylate

Carcinogenicity
Non-carcinogenic in inhalation and feeding studies carried out on rats, mice and dogs.
Related to substance: methyl methacrylate

Reprotoxicity / teratogenicity
No indications of toxic effects were observed in reproduction studies in animals.
Related to substance: methyl methacrylate

Further Information on Toxicology
There are no toxicological data available for the product as such. Avoid contact with the skin and eyes and inhalation of the product vapours.

12. Ecological Information

Information on Elimination (Persistence and Degradability)
Biodegradability

readily degradable, OECD 301 C, 14 d	94 %
Related to substance: methyl methacrylate	

Bioaccumulation

Ecotoxicological Effect

Fish Toxicity

LC50 Oncorhynchus mykiss, rainbow trout, OECD 203, flow through, GLP, 96 h	> 79 mg/l
Related to substance: methyl methacrylate	

Daphnia Toxicity

EC50 Daphnia magna, OECD 202, flow through, 48 h	69 mg/l
Related to substance: methyl methacrylate	
NOEC Daphnia magna, OECD 202 part 2, flow through, 21 d	37 mg/l
Related to substance: methyl methacrylate	

Algae Toxicity

EC3 Scenedesmus quadricauda, DIN 38412 section 9, 8 d	37 mg/l
Related to substance: methyl methacrylate	

Bacteria Toxicity

EC0 Pseudomonas putida	100 mg/l
Related to substance: methyl methacrylate	

Further Information on Ecology
Prevent substance from entering soil, natural bodies of water and sewer systems.

13. Disposal Considerations

Procedures
Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method. CYRO encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH.

14. Transport Information

US DOT Hazard Classification

Proper Shipping Name	ADHESIVES
Hazard Class	3
ID/UN Number	1133
Packing Group	II

Canadian TDG Classification

Refer to the classification US DOT

Shipment by sea IMDG/GGVSee

UN number	1133
Class	3
EmS	F-E, S-D
Marine pollutant	No
Packaging group	II
Proper Shipping Name	ADHESIVES

Air transport ICAO/IATA

UN number	1133
Class	3
Packing Group	II
Proper Shipping Name	ADHESIVES

15. Regulatory Information

INVENTORY INFORMATION

REACH (EU)	preregistered, registered or exempted
TSCA (USA)	listed or exempted
DSL (CDN)	listed or exempted
AICS (AUS)	listed or exempted
METI (J)	listed or exempted

US FEDERAL REGULATORY INFORMATION

Component / CASRN	TPQ [lbs]	CERCLA RQ [lbs] (40CFR302.4)	SARA 302 List of EHS	SARA 313 (40CFR372)	TSCA 12b
methyl methacrylate / 80-62-6	NONE	1000	NO	YES	NO

COMPONENT CLASSIFICATION UNDER CLEAN AIR ACT SECTION 112

Component / CASRN	Weight %	HAP	EHAP
methyl methacrylate / 80-62-6	60 - 100	YES	NO

PRODUCT CLASSIFICATION UNDER SECTION 311/312 OF SARA (40CFR370)

ACUTE, FIRE, REACTIVE,

US STATE REGULATORY INFORMATION

Component / CASRN	New Jersey RTK	Pennsylvania RTK	Massachusetts RTK	California Proposition 65 Cancer	California Proposition 65 Reproductive
acrylic polymer	NO	NO	NO	NO	NO
methyl methacrylate / 80-62-6	YES	YES	YES	NO	NO

CANADIAN REGULATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation and the MSDS contains all information required by the Controlled Products Regulations.

This is a controlled product.
WHMIS: B2, D2B, F

Component / CASRN	NPRI
methyl methacrylate / 80-62-6	YES

16. Other Information

	Health	Flammability	Physical Hazard
HMIS-Ratings	2	3	2
NFPA-Ratings	2	3	2

HMIS Hazard Ratings	NFPA Hazard Ratings
4 = severe	4 = extreme
3 = serious	3 = high
2 = moderate	2 = moderate
1 = slight	1 = slight
0 = minimal	0 = insignificant
N = no rating for powders	N = no rating for powders
* = chronic health hazard	

The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution.

This MSDS was prepared in accordance with ANSI Z400.1-1998.

Places marked by || have been amended from the last version.

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