

1 Identification

Product identifier

Trade name: 84P1 - Acrymed Mono

Recommended use and restrictions on use

General use: Acrylic monomer for orthopedic procedures.
Reserved for industrial and professional use.

Initial supplier identifier

Company name: Otto Bock HealthCare Canada Ltd.

Street/POB-No.: 5470 Harvester Road

Postal code, city: Burlington, ON L7L 5N5, CA
Canada

WWW: www.ottobock.ca

Email: info.canada@ottobock.com

Telephone: (800) 665-3327

Telefax: (800) 463-3659

Department responsible for information:

Mark Agro, Telephone: (800) 665-3327 (9 am - 5 pm)

Additional information:

Corporate headquarters:
Ottobock SE & Co. KGaA
Max-Näder-Straße 15
Duderstadt
Germany

Emergency telephone number

COLLECT, Telephone: (613) 996-6666

Transport:

CONSULTANK Lutz Harder GmbH (Contract QUALI003)

Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)

2 Hazard identification

Classification

Flammable Liquid 2

Highly flammable liquid and vapour.

Skin Irritation 2

Causes skin irritation.

Sensitization - skin 1

May cause an allergic skin reaction.

Specific Target Organ Toxicity (Single Exposure) 3

May cause respiratory irritation.

Information elements

Symbols:



Signal word:

Danger

Hazard statements:

- Highly flammable liquid and vapour.
- Causes skin irritation.
- May cause an allergic skin reaction.
- May cause respiratory irritation.

Precautionary statements:

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Keep container tightly closed.
- Avoid breathing vapours.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Call a POISON CENTER/doctor/.../if you feel unwell.
- Store in a well-ventilated place. Keep cool.
- Dispose of contents/container to hazardous or special waste collection point.

Other hazards known to the supplier with respect to the product

vapours irritate eyes and respiratory system. Pulmonary edema is possible.
High concentrations of vapour or inhalation for an extended period may lead to paralysis of the central nervous system.
Potentially explosive mixtures may form if adequate ventilation is not provided.
Special danger of slipping by leaking/spilling product.

3 Composition/Information on ingredients

Mixture

Hazardous ingredients:

CAS No.	Designation	Content	Classification
CAS 80-62-6	Methyl methacrylate	>= 90 %	Flammable Liquid 2. Skin Irritation 2. Sensitization - skin 1. Specific Target Organ Toxicity (Single Exposure) 3.
CAS 97-90-5	Ethylene dimethacrylate	< 10 %	Sensitization - skin 1. Specific Target Organ Toxicity (Single Exposure) 3.
CAS 3077-12-1	2,2'-(4-Methylphenyl) imino]bisethanol	< 1 %	Acute Toxicity 4 (oral). Skin Irritation 2. Eye Damage 1.

The actual concentration or concentration range is withheld as a trade secret.

4 First-aid measures

Description of necessary first-aid measures

General information:

- Do not allow victim to become chilled. Keep victim warm. In case of vomiting, lay at least head on side. If victim is at risk of losing consciousness, position and transport on their side.
- Always seek medical assistance if symptoms develop that are possibly due to exposure through skin or eye contact or through inhalation of fumes.

In case of inhalation:	Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Seek medical attention.
In case of swallowing:	Rinse mouth thoroughly with water. Immediately get medical attention.
In case of skin contact:	Take off immediately all contaminated clothing. Immediately clean with water and soap and, if available, apply a generous amount of polyethylene glycol 400. Seek medical attention if irritation persists.
In case of eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult physician.

Most important symptoms and effects, whether acute or delayed

May cause respiratory irritation. Causes skin irritation.

May cause an allergic skin reaction.

The following symptoms may occur: Mucous membrane irritation, Cough and shortage of breath.

High concentrations of vapour or inhalation for an extended period may lead to paralysis of the central nervous system. Pulmonary edema is possible.

In case of prolonged or frequent exposure eye irritation may occur.

Indication of immediate medical attention and special treatment needed, if necessary

Monitor breathing. Treat symptomatically.

On irritation of the respiratory system use an aerosol dispenser and treat with 5 doses of dexamethasone aerosol (e.g. Auxiloson, Thomae) every 10 minutes until symptoms cease.

Estimated lethal dose: 30g

5 Fire-fighting measures

Suitable and unsuitable extinguishing media

Suitable extinguishing media:

Extinguishing powder, foam, water spray jet, carbon dioxide.

Unsuitable extinguishing media:

Full water jet

Specific hazards arising from the product

Highly flammable liquid and vapour.

vapours form potentially explosive mixtures with air, which are heavier than air. Air-vapour mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source.

In case of fire may be liberated: Nitrogen oxides (NOx), carbon monoxide and carbon dioxide.

Special protective equipment and precautions for fire-fighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information:

Heating will lead to pressure increase: danger of bursting and explosion.

Cool endangered containers with water spray and, if possible, remove from danger zone.

Do not allow fire water to penetrate into surface or ground water.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Eliminate all ignition sources if safe to do so.
Provide adequate ventilation. Do not breathe vapours.
Wear appropriate protective equipment. Keep unprotected people away.
Avoid contact with skin and eyes.

Environmental precautions:

Do not allow to enter into ground-water, surface water or drains.
Danger of explosion!
In case of release, notify competent authorities.

Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).
Use only spark proof tools.
vapours form potentially explosive mixtures with air, which are heavier than air. Air-vapour mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source.

Additional information:

Take precautionary measures against static discharges.
In case of handling larger quantities: Use explosion-proof equipment and non-sparking tools/utensils.
Special danger of slipping by leaking/spilling product.

7 Handling and storage

Precautions for safe handling

Advices on safe handling: Provide good ventilation and/or an exhaust system in the work area.
vapours are heavier than air and will travel at floor level.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharges.
In case of fire, cool endangered containers with water.
Emergency cooling must be provided for in case of a fire in the vicinity. Do not weld.

Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Because oxygen (air) is necessary to stabilize product, fill container only to 90% of capacity.
Keep container tightly closed to prevent evaporation.
Storage temperatures not to exceed 30 °C. Keep away from sources of ignition. Protect from light.
Provide adequate oxygen (air) circulation for large containers to ensure product stability.

Hints on joint storage:

Do not store together with organic peroxides, ammonia or persulphates.
Keep away from food, drink and animal feedingstuffs.

8 Exposure controls/Personal protection

Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
80-62-6	Methyl methacrylate	Canada: Alberta, OEL 15 min	410 mg/m ³ ; 100 ppm
		Canada: Alberta, OEL 8 hour	205 mg/m ³ ; 50 ppm
		Canada: BC, OEL STEL	100 ppm
		Canada: BC, OEL TWA	50 ppm
		Canada: Québec, VECD	100 ppm
		Canada: Québec, VEMP	50 ppm

Appropriate engineering controls

Use only closed, grounded equipment with this product.

Extract vapours by suction at point of emission.

Do not allow containers to stand open.

Individual protection measures, such as personal protective equipment

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Use filter type A (= against vapours of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

Hand protection: Protective gloves according to OSHA Standard - 29 CFR: 1910.138. Glove material: Butyl caoutchouc (butyl rubber)-Layer thickness: 0,7 mm Breakthrough time: 480 min. Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Body protection: Suitable protective clothing.

General hygiene considerations:

Do not breathe vapours.

Avoid contact with skin and eyes.

Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

Eye wash facility must be provided.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

9 Physical and chemical properties

Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa	liquid
Colour:	colourless
	clear
Odour:	ester-like
Odour threshold:	No data available

Melting point and freezing point:	-48 °C
Boiling point or initial boiling point and boiling range:	100.3 °C
Flammability:	Highly flammable liquid and vapour.
Lower and upper explosion limit or lower and upper flammability limit:	LEL (Lower Explosion Limit): 2.10 Vol-% UEL (Upper Explosive Limit): 12.50 Vol-%
Flash point/flash point range:	10 °C (c.c. DIN 51755)
Evaporation rate:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH:	No data available
Dynamic viscosity:	at 20 °C: 0.6 mPa*s (Brookfield)
Solubility:	at 20 °C: soluble in various organic solvents
Water solubility:	at 20 °C: 15.9 g/L
Partition coefficient — n-octanol/water:	0.7 log P(o/w) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.
Vapour pressure:	at 20 °C: 40 hPa
Density and/or relative density	at 20 °C: 0.94 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

Additional information

Explosive properties:	Not explosive. vapours may form explosive mixtures with air.
Ignition temperature:	430 °C (DIN 51794)

10 Stability and reactivity

Reactivity:	Highly flammable liquid and vapour. Liquid evaporates quickly.
Chemical stability:	Product is stable under normal temperatures and pressures. Stable under recommended storage conditions.
Possibility of hazardous reactions:	vapours form potentially explosive mixtures with air, which are heavier than air. Air-vapour mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source. Ignition by hot surfaces, sparks and open flames. Container may explode if polymerization occurs.
Conditions to avoid:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Incompatible materials:	Contact with the following materials leads to a violent catalytic auto-reaction of the product: Organic peroxides (such as benzoyl-, acetyl-, lauroyl- and tertbutylhydro-peroxide), as well as combination such as azobis-iso-butyronitril, anionic liquid of sodium, ammonia and persulfate. Due to reducing substances, peroxides and heavy metal ions, polymerization with heat generation may occur.

Hazardous decomposition products:

In case of fire may be liberated: Nitrogen oxides (NO_x), carbon monoxide and carbon dioxide.

11 Toxicological information

Information on the likely routes of exposure

No data available

Health hazard information

Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Skin Irritation 2 = Causes skin irritation.

Serious eye damage/irritation: Lack of data.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Sensitization - skin 1 = May cause an allergic skin reaction.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Specific Target Organ Toxicity (Single Exposure) 3 = May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

Acute toxicity:

LD50 Rat, oral: 7,872 mg/kg

LC50 Rat, inhalative: 7,093 ppm/4h

LD50 Rabbit, dermal: > 5,000 mg/kg

Other information:

Following information applies to the component Methyl methacrylate:

LD50 Rat, oral: >5000 mg/kg

LC50 Rat, inhalative: 29,8 mg/l/4h

LD50 Rabbit, dermal: >5000 mg/kg

Skin irritation, Rabbit, 24h: Not an irritant (FDA, Draize).

Irritant effect on the eye: Rabbit: Not an irritant (Draize)

sensitization:

Sensitivity testing among guinea pigs with and without adjuvants afforded both positive and negative results.

May cause sensitization by skin contact. Varying incidences of allergic reactions have been observed in humans. (Symptoms: Headache, eye irritations, skin problems)

Mutagenicity:

not a mutagen (Dose 10000 µg/plate (Salmonella typhimurium, Ames-Test)

Mouse, Lymphoma L 5178 Y TK+/-Cells: mutagenic

CHO-Cells: Slight increase of the SCE (SCE-test)

No increase of the number of micronucleides under the following test conditions: OECD 474:

4520 mg/kg/Dose 1

1130 mg/kg/Dose 4

CD-1 Mouse, male, 6h/d, 5d: not a mutagen (Dominant letal Test)

Product did not show any carcinogenous, mutagenous or teratogenic effects in animal experiments. (Teratogenicity: Rat, inhalative: 2028 ppm, 6 - 15 d)

Chronic toxicity:

Rat, inhalative 250 - 1000 ppm (6h/d, 5d/w) exceeding 2a). Symptoms: Damage of the mucous membranes in nose, throat and lungs. Degeneration of olfactory epithelia.

Mouse, inhalative 500 - 1000 ppm (6h/d, 5d/w) exceeding 2a). Symptoms: Damage of the mucous membranes in nose, throat and lungs. Degeneration of olfactory epithelia.

Following information applies to the component ethyl triglycol methacrylate:

LD50 Rat, oral: >5000 mg/kg Stable under recommended storage conditions.

Symptoms

In case of inhalation: Cough and shortage of breath.

In case of ingestion:

Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

After resorption of toxic quantities: CNS disorders, drowsiness, amyosthenia, coma, liver and kidney damage.

After eye contact: Irritation and redness may occur.

12 Ecological information

Ecotoxicity

Aquatic toxicity:

Following information applies to the component Methyl methacrylate:

Algae toxicity:

EC3 Scenedesmus quadricauda: 37mg/L, 8d (DIN 38412 T.9)

Bacterial toxicity:

EC0 Pseudomonas putida: 100 mg/L

Daphnia toxicity:

EC50 Daphnia magna: 69mg/L, 48h (OECD 202/ISO 6341/EEC 84/449/V, C2)

Fish toxicity:

LC50 Oncorhynchus mykiss: >79 mg/L/96h (OECD 203/ISO 7346/EEC 84/449/V, C1)

NOEC Oncorhynchus mykiss: >40 mg/L/96h (OECD 203/ISO 7346/EEC 84/449/V, C1)

Persistence and degradability

Further details: Following information applies to the component Methyl methacrylate:
 Product is readily biodegradable. (OECD 301 C, 14d: 94%)
 Abiotic degradation:
 Hydrolysis (25 °C, pH 7): half-life time (DT50): 53 months.
 Hydrolysis (25 °C, pH 11): half-life time (DT50): 2.4 h.
 Air (Photo-oxidation, OH-) half-life time (DT50): 6.99 h.

Bioaccumulative potential

Partition coefficient — n-octanol/water:
 0.7 log P(o/w)
 Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

Mobility in soil

No data available

Other adverse effects

General information: Do not allow to penetrate into soil, waterbodies or drains.

13 Disposal considerations

Waste treatment methods

Product

Recommendation: Incinerate as hazardous waste according to applicable local, state, and federal regulations.

Package

Recommendation: Waste key number:
 150102 Plastic container
 150104 Packages of metal
 Dispose of waste according to applicable legislation.
 Handle contaminated packages in the same way as the substance itself.

14 Transport information

UN number

TDG: UN1247
 IMDG, IATA-DGR: UN 1247

UN proper shipping name

TDG, IMDG, IATA-DGR: UN 1247, METHYL METHACRYLATE MONOMER, STABILIZED

Transport hazard class

TDG: 3
IMDG: Class 3, Subrisk -
IATA-DGR: Class 3



Packing group

TDG, IMDG, IATA-DGR: II

Environmental hazards

Marine pollutant: no

Special precautions in connection with transport or conveyance either within or outside the premises

Canada: Transportation of Dangerous Goods (TDG)

Special Provisions: 155
Explosive limit and limited quantity index: 1L
Passenger carrying road or rail index: 5L

Sea transport (IMDG)

EmS: F-E, S-D
Special Provisions: 386
Limited quantities: 1 L
Excepted quantities: E2
Package - Instructions: P001
Package - Provisions: -
IBC - Instructions: IBC02
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: T4
Tank instructions - Provisions: TP1
Stowage and handling: Category C. SW1 SW2
Properties and observations: Colourless, volatile liquid. Flashpoint: 8°C c.c. Eplosive limits: 1.5% to 11.6%. Immiscible with water, Irritating to skin, eyes and mucous membranes.
Marine pollutant: no
Segregation group: none

Air transport (IATA)

Proper shipping name: UN 1247, METHYL METHACRYLATE MONOMER, STABILIZED
Hazard label: Flamm. liquid
Excepted Quantity Code: E2
Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L
Passenger and Cargo Aircraft: Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L
Cargo Aircraft only: Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L
Special Provisions: A209
Emergency Response Guide-Code (ERG): 3L

15 Regulatory information

National regulations - Canada

Methyl methacrylate: DSL: listed
Priority Substances List: listed (PSL 1)

Ethylene dimethacrylate: DSL: listed

2,2'-[(4-Methylphenyl)imino]bisethanol: DSL: listed

Further regulations, limitations and legal requirements

No data available

16 Other information

Text for labelling: Contains Methyl methacrylate and Ethylene dimethacrylate.

Revision date: 17/12/2025

Date of first version: 6/5/1999

Reason of change: General revision: Safety Data Sheet according to Hazardous Products Regulations (HPR) 2022

Abbreviations and acronyms:

Acute Toxicity: Acute toxicity

AS/NZS: Australian Standards/New Zealand Standards

CAS: Chemical Abstracts Service

CFR: Code of Federal Regulations

CLP: Classification, Labelling and Packaging

CNS: Central Nervous System

DMEL: Derived minimal effect level

DNEL: Derived no-effect level

DSL: Domestic Substances List

EC: European Community

EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods

EN: European Standard

EQ: Excepted quantities

Eye Damage: Eye damage

Flammable Liquid: Flammable liquid

IATA: International Air Transport Association

IATA-DGR: International Air Transport Association – Dangerous Goods Regulations

IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

IMDG Code: International Maritime Dangerous Goods Code

IMO: International Maritime Organization

LC50: Median lethal concentration

LD50: Lethal dose 50%

LEL: Lower Explosion Limit

log P(o/w): Partition coefficient: octanol/water

MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships

OEL: Occupational Exposure Limit Value

OSHA: Occupational Safety and Health Administration

PBT: Persistent, bioaccumulative and toxic

PNEC: Predicted no-effect concentration

PSL: Priority Substances List

Sensitization - skin: Skin sensitisation

Skin Irritation: Skin irritation

STOT SE: Specific target organ toxicity - single exposure

TDG: Transportation of Dangerous Goods Regulation in Canada

TLV: Threshold Limit Value

TRGS: Technical Rules for Hazardous Substances

UN: United Nations

vPvB: Very persistent and very bioaccumulative

WEL: Workplace Exposure Limit

Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.