

## 1 Identification

### Product identifier

Trade name: 617P5 - EP Hardener for Orthopox

### Recommended use and restrictions on use

General use: Adhesive for orthopedic procedures.  
Curing agent for bisphenol epoxy resins.  
Reserved for industrial and professional use.

Identified uses: Compound material

### 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](http://www.ottobock.ca)

Email: [info.canada@ottobock.com](mailto: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

Acute Toxicity 4 (oral)

Acute Toxicity 4 (dermal)

Skin Corrosion 1B

Eye Damage 1

Sensitization - skin 1

Reproductive toxicity 2

Specific Target Organ Toxicity (Repeated Exposure) 1

Aquatic toxicity - chronic 3

Harmful if swallowed.

Harmful in contact with skin.

Causes severe skin burns and eye damage.

Causes serious eye damage.

May cause an allergic skin reaction.

Suspected of damaging fertility. Suspected of damaging the unborn child.

Causes damage to organs through prolonged or repeated exposure.

Harmful to aquatic life with long lasting effects.

## Information elements

Symbols:



Signal word:

**Danger**

Hazard statements:

Harmful if swallowed.  
Harmful in contact with skin.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
Suspected of damaging fertility. Suspected of damaging the unborn child.  
Causes damage to organs through prolonged or repeated exposure.  
Harmful to aquatic life with long lasting effects.

Precautionary statements:

Obtain special instructions before use.  
Do not breathe mist/spray.  
Wear protective gloves/protective clothing/eye protection/face protection.  
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/or shower.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER/doctor.

## Other hazards known to the supplier with respect to the product

Special danger of slipping by leaking/spilling product.

## 3 Composition/Information on ingredients

### Mixture

Chemical name:

Hardener component based on amines.

Hazardous ingredients:

CAS No.	Designation	Content	Classification
CAS 2855-13-2	3-Aminomethyl-3,5,5-trimethylcyclohexylamine	25 - 50 %	Acute Toxicity 4 (oral). Acute Toxicity 4 (dermal). Skin Corrosion 1B. Eye Damage 1. Sensitization - skin 1. Aquatic toxicity - chronic 3.
CAS 140-31-8	2-Piperazin-1-ylethylamine	25 - 46 %	Acute Toxicity 4 (oral). Acute Toxicity 3 (dermal). Skin Corrosion 1B. Sensitization - skin 1. Reproductive toxicity 2. Specific Target Organ Toxicity (Repeated Exposure) 1. Aquatic toxicity - chronic 3.
CAS 25620-58-0	Trimethylhexane-1,6-diamine	10 - 25 %	Acute Toxicity 4 (oral). Skin Corrosion 1C. Eye Damage 1. Sensitization - skin 1. Aquatic toxicity - chronic 3.
CAS 9046-10-0	Poly-(oxypropylendiamine)	10 - 25 %	Skin Corrosion 1C. Eye Damage 1. Aquatic toxicity - chronic 3.
CAS 1477-55-0	m-Phenylenebis(methylamine)	10 - 25 %	Acute Toxicity 4 (oral). Acute Toxicity 4 (inhalative). Skin Corrosion 1B. Eye Damage 1. Sensitization - skin 1. Aquatic toxicity - chronic 3.

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

## 4 First-aid measures

### Description of necessary first-aid measures

General information:	First aider: Pay attention to self-protection! Immediately call a POISON CENTER/doctor. Do not effect a mouth-to-mouth resuscitation. Take off immediately all contaminated clothing and wash it before reuse.
In case of inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention. If unconscious place in recovery position and seek medical advice.
In case of swallowing:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. In case of vomiting, position victim on their side. Immediately get medical attention.
In case of skin contact:	Immediately clean with water and soap followed by thorough rinsing. In case of skin reactions, consult a physician.
In case of eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist.

### Most important symptoms and effects, whether acute or delayed

Causes severe skin burns and eye damage. May cause an allergic skin reaction. Harmful if swallowed or in contact with skin.

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

Treat symptomatically.  
Symptoms of poisoning may develop several hours following exposure. Victim should be under medical observation for at least 48 hours after exposure.

## 5 Fire-fighting measures

### Suitable and unsuitable extinguishing media

Suitable extinguishing media:

Water spray jet, foam, extinguishing powder, carbon dioxide.

Unsuitable extinguishing media:

Full water jet

### Specific hazards arising from the product

May form dangerous gases and vapours in case of fire.

Furthermore, there may develop: nitrogen oxides (NOx), Carbon monoxide and carbon dioxide.

### Special protective equipment and precautions for fire-fighters

Use a breathing apparatus independent of the ambient air (isolated apparatus) and a full protection outfit (suit) against chemicals.

Additional information:

Heating will lead to pressure increase: danger of bursting and explosion. Keep containers cool with water spray.

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

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

Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Ensure self-protection. Avoid exposure. Do not breathe mist/vapours/spray. Avoid contact with the substance.

If possible, eliminate leakage. Provide adequate ventilation.

Wear appropriate protective equipment. Take off immediately all contaminated clothing and wash it before reuse. Keep unprotected people away.

Environmental precautions:

Do not allow to enter into ground-water, surface water or drains.

If necessary, notify appropriate authorities.

### Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).

In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

Never return spills in original containers for re-use.

Additional information:

Special danger of slipping by leaking/spilling product.

## 7 Handling and storage

### Precautions for safe handling

Advices on safe handling: Obtain special instructions before use.  
Provide adequate ventilation, and local exhaust as needed. Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment.  
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off immediately all contaminated clothing and wash it before reuse.  
Work place should be equipped with a shower and an eye rinsing apparatus.

Precautions against fire and explosion:  
Keep away from heat.  
When handling larger quantities, take precautionary measures against electrostatic charging.

### Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:  
Keep container tightly closed and in a well-ventilated place.  
Keep container dry. Keep only in the original container.  
Protect from heat and direct sunlight.  
Store containers in upright position.

Hints on joint storage: Keep away from food, drink and animal feedingstuffs.  
Do not store together with: Strong oxidizing agents

## 8 Exposure controls/Personal protection

### Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
1477-55-0	m-Phenylenebis (methylamine)	Canada: Alberta, OEL Ceiling	0.1 mg/m <sup>3</sup>
		Canada: BC, OEL Ceiling	0.1 mg/m <sup>3</sup> (may be absorbed through the skin)
		Canada: Québec, Plafond	0.1 mg/m <sup>3</sup> (may be absorbed through the skin)

### Appropriate engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment.

### Individual protection measures, such as personal protective equipment

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. In case of inadequate ventilation wear respiratory protection.  
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.  
Recommendation: 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: nitrile rubber-Layer thickness: 0,35 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:	Wear suitable protective clothing and shoes.
General hygiene considerations:	Obtain special instructions before use. Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Take off immediately all contaminated clothing and wash it before reuse. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Work place should be equipped with a shower and an eye rinsing apparatus.

### Consumer exposure controls

Do not allow to enter into ground-water, surface water or drains.

### 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 up to light yellow
Odour:	Amine odour
Odour threshold:	No data available
Melting point and freezing point:	No data available
Boiling point or initial boiling point and boiling range:	No data available
Flammability:	No data available
Lower and upper explosion limit or lower and upper flammability limit:	No data available
Flash point/flash point range:	No data available
Evaporation rate:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH:	No data available
Solubility:	No data available
Partition coefficient — n-octanol/water:	-1.48 log P(o/w) (2-Piperazin-1-ylethylamine) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected. 0.18 - 0.43 log P(o/w) (m-Phenylenebis(methylamine)) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected. 1.34 log P(o/w) (Polyoxypropylene diamine) Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.

Vapour pressure: No data available

Density and/or relative density: No data available

Vapour density: No data available

Particle characteristics: Not applicable

### Additional information

Additional information: No data available

## 10 Stability and reactivity

Reactivity: Refer to subsection "Possibility of hazardous reactions".

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions:  
No dangerous reactions with proper and specified storage and handling

Conditions to avoid: Keep away from heat sources, sparks and open flames.  
Protect from direct sunlight.

Incompatible materials: Strong oxidizing agents.

Hazardous decomposition products:  
No decomposition when used properly.

## 11 Toxicological information

### Information on the likely routes of exposure

No data available

### Health hazard information

Acute toxicity (oral): Acute Toxicity 4 (oral) = Harmful if swallowed.

ATEmix (calculated): 863.1 mg/kg

Acute toxicity (dermal): Acute Toxicity 4 (dermal) = Harmful in contact with skin.

ATEmix (calculated): 1710.8 mg/kg

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

ATEmix (calculated): 77 mg/L

Skin corrosion/irritation: Skin Corrosion 1B = Causes severe skin burns and eye damage.

Serious eye damage/irritation: Eye Damage 1 = Causes serious eye damage.

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: Reproductive toxicity 2 = Suspected of damaging fertility.

Suspected of damaging the unborn child.

Effects on or via lactation: Lack of data.

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

Specific target organ toxicity (repeated exposure): Specific Target Organ Toxicity (Repeated Exposure) 1 = Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: Lack of data.

#### Other information:

Information about 3-Aminomethyl-3,5,5-trimethylcyclohexylamine (CAS No. 2855-13-2):  
LD50 oral, Rat: 1,030 mg/kg/bw

Information about 2-Piperazin-1-ylethylamine (CAS No. 140-31-8):  
LD50 oral, Rat: > 1,000 mg/kg/bw

LD50 dermal, Rabbit: 866 mg/kg/bw

Information about Trimethylhexane-1,6-diamine (CAS No. 25620-58-0):  
LD50 oral, Rat: 910 mg/kg/bw

Information about Polyoxypipeline diamine (CAS No. 9046-10-0):  
LD50 oral, Rat: 2,885 mg/kg  
LD50 dermal, Rabbit: 2,980 mg/kg

Information about m-Phenylenebis(methylamine) (CAS No. 1477-55-0):  
LD50 oral, Rat: 930 mg/kg/bw

LC50 inhalative (vapours), Rat: 3.89 mg/L/1h

LC50 inhalative (vapours), Rat: 2.4 mg/L/4h

LC50 inhalative (vapours), Rat: (female) 0.8 mg/L/4h

LD50 dermal, Rabbit: 2,000 mg/kg/bw

### Symptoms

Reduced fetal weight, increase in skeletal deformities

In case of inhalation:

Has a strong irritation effect on respiratory tract and lungs. Symptoms may occur with delay.

In case of ingestion: Burns in the mouth, pharynx, oesophagus, and gastrointestinal tract. stomachache.

After contact with skin:

Prolonged or repeated contact with skin or mucous membrane result in irritation symptoms such as redness, blistering, dermatitis, etc.

Pain.

After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

## 12 Ecological information

### Ecotoxicity

Aquatic toxicity: Harmful to aquatic life with long lasting effects.

Information about 3-Aminomethyl-3,5,5-trimethylcyclohexylamine (CAS No. 2855-13-2):

Daphnia toxicity: EC50 17.4 mg/L/48h

Information about 2-Piperazin-1-ylethylamine (CAS No. 140-31-8):

Fish toxicity: LC50 2,190 mg/L/96h

### Persistence and degradability

Further details: No data available

### Bioaccumulative potential

Partition coefficient — n-octanol/water:

-1.48 log P(o/w) (2-Piperazin-1-ylethylamine)

Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

0.18 - 0.43 log P(o/w) (m-Phenylenebis(methylamine))

Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

1.34 log P(o/w) (Polyoxypropylene diamine)

Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.

### Mobility in soil

No data available

### Other adverse effects

AOX reference: Product does not contain organically bound halogen (AOX).

General information: Do not allow to enter into ground-water, surface water or drains.

### 13 Disposal considerations

#### Waste treatment methods

##### Product

Recommendation: Do not dispose of with household waste.  
Special waste. Dispose of waste according to applicable legislation.  
Do not allow to enter into ground-water, surface water or drains.

##### Package

Recommendation: Dispose of waste according to applicable legislation.  
Handle contaminated packages in the same way as the substance itself.

### 14 Transport information

#### UN number

TDG: UN2735  
IMDG, IATA-DGR: UN 2735

#### UN proper shipping name

TDG: UN 2735,  
AMINES, LIQUID, CORROSIVE, N.O.S.; or POLYAMINES, LIQUID, CORROSIVE,  
N.O.S. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine, 2-Piperazin-1-ylethylamine)  
IMDG, IATA-DGR: UN 2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S.  
(3-Aminomethyl-3,5,5-trimethylcyclohexylamine, 2-Piperazin-1-ylethylamine)

#### Transport hazard class

TDG: 8  
IMDG: Class 8, Subrisk -  
IATA-DGR: Class 8



#### 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: 16  
Explosive limit and limited quantity index: 1 L  
Passenger carrying road or rail index: 1 L

### Sea transport (IMDG)

EmS:	F-A, S-B
Special Provisions:	274
Limited quantities:	1 L
Excepted quantities:	E2
Package - Instructions:	P001
Package - Provisions:	-
IBC - Instructions:	IBC02
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T11
Tank instructions - Provisions:	TP1, TP27
Stowage and handling:	Category A.
Segregation:	SG35
Properties and observations:	Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. React violently with acids. Cause burns to skin, eyes and mucous membranes.
Marine pollutant:	no
Segregation group:	18

### Air transport (IATA)

Proper shipping name:	UN 2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine, 2-Piperazin-1-ylethylamine)
Hazard label:	Corrosive
Excepted Quantity Code:	E2
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y840 - Max. Net Qty/Pkg. 0.5 L
Passenger and Cargo Aircraft:	Pack.Instr. 851 - Max. Net Qty/Pkg. 1 L
Cargo Aircraft only:	Pack.Instr. 855 - Max. Net Qty/Pkg. 30 L
Special Provisions:	A3 A803
Emergency Response Guide-Code (ERG):	8L

### Further information

Make sure that persons transporting the product know what to do in case of an accident or leakage.

## 15 Regulatory information

### National regulations - Canada

Product:	DSL/NDSL: All ingredients are listed or exempt from listing.
3-Aminomethyl-3,5,5-trimethylcyclohexylamine:	DSL: listed
2-Piperazin-1-ylethylamine:	DSL: listed
Trimethylhexane-1,6-diamine:	DSL: listed
Poly-(oxypropylendiamine):	DSL: listed
m-Phenylenebis(methylamine):	DSL: listed

### Further regulations, limitations and legal requirements

No data available

### 16 Other information

Text for labelling: Contains: 3-Aminomethyl-3,5,5-trimethylcyclohexylamine, 2-Piperazin-1-ylethylamine, Trimethylhexane-1,6-diamine, Polyoxypropylene diamine.

Revision date: 17/12/2025

Date of first version: 18/1/2018

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

#### Abbreviations and acronyms:

Acute Toxicity: Acute toxicity  
 AOX: Adsorbable Organic Halogens  
 Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic  
 AS/NZS: Australian Standards/New Zealand Standards  
 Bw: Body weight  
 CAS: Chemical Abstracts Service  
 CFR: Code of Federal Regulations  
 CLP: Classification, Labelling and Packaging  
 DMEL: Derived minimal effect level  
 DNEL: Derived no-effect level  
 DSL: Domestic Substances List  
 EC: European Community  
 EC50: Effective Concentration 50%  
 EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods  
 EN: European Standard  
 EQ: Excepted quantities  
 Eye Damage: Eye damage  
 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%  
 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  
 Reproductive toxicity: Reproductive toxicity  
 Sensitization - skin: Skin sensitisation  
 Skin Corrosion: Skin corrosion  
 STOT RE: Specific target organ toxicity - repeated 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.