

## 1. Product and company identification

**Product identifier**

Trade name: 617P15 - Quick Hardener (HY 2958)

**Relevant identified uses of the substance or mixture and uses advised against**

General use: Adhesive for orthopedic procedures.  
Reserved for industrial and professional use.

**Details of the supplier of the safety data sheet**

Company name: Otto Bock Health Care  
 Street/POB-No.: 3820 W. Great Lakes Drive  
 Postal Code, city: Salt Lake City, UT 84120  
 USA  
 WWW: www.ottobockus.com  
 Telephone: +1 (801) 956-2400  
 Telefax: +1 (801) 956-2401  
 Dept. responsible for information:  
 Quality Department,  
 Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),  
 Email: USRegulatory@ottobock.com

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

**Emergency phone number**

**CHEMTREC, Telephone: +1 (800) 424-9300**  
**Transport:**  
**CONSULTANK Lutz Harder GmbH (Contract QUALI003)**  
**Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)**

## 2. Hazards identification

**Emergency overview**

Appearance: Physical state at 68 °F and 101.3 kPa: liquid  
 Color: yellow, clear  
 Odor: amine odor  
 Classification: Acute Toxicity - inhalative - Category 2; Acute Toxicity - dermal - Category 4;  
 Skin Corrosion - Category 1B; Eye Damage - Category 1; Sensitization - skin -  
 Category 1; Reproductive toxicant - Category 1B;  
 Specific Target Organ Toxicity (Single Exposure) - Category 3;  
 Aquatic toxicity - chronic - Category 2;

Hazard symbols:



Signal word: **Danger**

**617P15 - Quick Hardener (HY 2958)**

Material number 617P15

Hazard statements: Harmful in contact with skin.  
 Causes severe skin burns and eye damage.  
 May cause an allergic skin reaction.  
 Fatal if inhaled.  
 May cause respiratory irritation.  
 May damage fertility.  
 Toxic to aquatic life with long lasting effects.

Precautionary statements: Obtain special instructions before use.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 In case of inadequate ventilation wear respiratory protection.  
 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.  
 Take off contaminated clothing and wash it before reuse.

**Regulatory status**

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

**Hazards not otherwise classified**

May be harmful if swallowed. Vapors may form explosive mixtures with air.  
 see section 11: Toxicological information

**3. Composition / Information on ingredients**

Chemical characterization: Preparation with aliphatic amines

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 111-40-0	Diethylenetriamine	60 - 100 %	Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 4. Acute Toxicity - inhalative - Category 2. Skin Corrosion - Category 1B. Eye Damage - Category 1. Sensitization - skin - Category 1. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 80-05-7	4,4'-Isopropylidenediphenol	30 - 60 %	Eye Damage - Category 1. Sensitization - skin - Category 1. Reproductive toxicant - Category 1B. Specific Target Organ Toxicity (Single Exposure) - Category 3. Aquatic toxicity - chronic - Category 2.

## 4. First aid measures

General information:	First aider: Pay attention to self-protection! If medical advice is needed, have product container or label at hand. Take off immediately all contaminated clothing and wash it before reuse.
In case of inhalation:	Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Immediately get medical attention.
Following skin contact:	Take off immediately all contaminated clothing. After contact with skin, wash immediately with soap and plenty of water. Immediately get medical attention.
After 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. Afterwards, consult an ophthalmologist immediately.
After swallowing:	Rinse mouth with water. Have victim drink large quantities of water, with active charcoal if possible. Do not induce vomiting. In case of vomiting, position victim on their side. In case of irregular breathing or respiratory arrest provide artificial respiration. Never give anything by mouth to an unconscious person. Immediately get medical attention.

**Most important symptoms/effects, acute and delayed**

Fatal if inhaled. Causes severe skin burns and eye damage. May cause respiratory irritation. May cause an allergic skin reaction. Harmful in contact with skin. May be harmful if swallowed.

**Information to physician**

Treat symptomatically.  
Medical surveillance necessary for at least 48 hours.

## 5. Fire fighting measures

Flash point/flash point range:	215.6 °F (Pensky-Martens c.c.)
Auto-ignition temperature:	No data available
Suitable extinguishing media:	Water spray jet, carbon dioxide (CO <sub>2</sub> ), foam, dry chemical powder.
Extinguishing media which must not be used for safety reasons:	Full water jet

**Specific hazards arising from the chemical**

Emits toxic fumes under fire conditions.  
Furthermore, there may develop: Nitrous fumes, nitrogen oxides (NO<sub>x</sub>), carbon monoxide and carbon dioxide

Protective equipment and precautions for firefighters:	Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.
--	--

Additional information:	Heating will lead to pressure increase: Danger of bursting and explosion. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
-------------------------	--

## 6. Accidental release measures

**Personal precautions:** Avoid exposure. Plug leak if safely possible. Eliminate all ignition sources if safe to do so. Avoid contact with skin, eyes, and clothing. Do not breathe vapors. Provide adequate ventilation. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.

**Environmental precautions:** Do not allow to penetrate into soil, waterbodies or drains.

**Methods for clean-up:** Collect mechanically using liquid-binding material (sand, diatomaceous earth, universal binding agents). Dispose of waste in accordance with local, state, and federal regulations.

## 7. Handling and storage

### Handling

**Advices on safe handling:** Obtain special instructions before use. Provide good ventilation and/or an exhaust system in the work area. Handle and open container with care. Keep away from sources of ignition - No smoking. Do not breathe vapor or spray. Avoid contact with skin and eyes. Wear appropriate protective equipment. Take off 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:** Vapors may form explosive mixtures with air.

### Storage

**Requirements for storerooms and containers:** Store only in original, tightly closed containers at room temperature. Keep container dry. Protect from heat and direct sunlight.

**Hints on joint storage:** Keep away from food, drink and animal feedingstuffs. Avoid contact with strong oxidizing agents, strong acids, strong bases, copper and copper alloys.

## 8. Exposure controls / personal protection

### Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
111-40-0	Diethylenetriamine	USA: ACGIH: TWA USA: NIOSH: TWA	4.2 mg/m <sup>3</sup> ; 1 ppm 4 mg/m <sup>3</sup> ; 1 ppm

### Engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment.  
See also information in chapter 7, section storage.

### Personal protection equipment (PPE)

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

617P15 - Quick Hardener (HY 2958)

Material number 617P15

Page: 5 of 10

- Skin protection: Wear suitable protective clothing and shoes.  
Protective gloves according to OSHA Standard - 29 CFR: 1910.138.  
Glove material: Butyl caoutchouc (butyl rubber), ethylene vinyl alcohol laminate (EVAL)  
Breakthrough time: >480 min.  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
- Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded.  
Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.
- General hygiene considerations:  
Obtain special instructions before use. Keep away from sources of ignition - No smoking.  
Wash hands before breaks and after work.  
Avoid contact with skin and eyes. Do not breathe gas/fume/vapour/spray.  
Keep away from food, drink and animal feedingstuffs. Take off contaminated clothing and wash it before reuse.  
Work place should be equipped with a shower and an eye rinsing apparatus.

**9. Physical and chemical properties**

Information on basic physical and chemical properties

- Appearance: Physical state at 68 °F and 101.3 kPa: liquid  
Color: yellow, clear
- Odor: amine odor  
Odor threshold: No data available
- pH value: at 68 °F, 50%: 13
- Melting point/freezing point: No data available  
Initial boiling point and boiling range: > 392 °F  
Flash point/flash point range: 215.6 °F (Pensky-Martens c.c.)  
Evaporation rate: No data available  
Flammability: No data available  
Explosion limits: No data available  
Vapor pressure: No data available  
Vapor density: No data available  
Density: at 77 °F: 1.00 - 1.05 g/mL  
Water solubility: at 68 °F: miscible  
Partition coefficient: n-octanol/water: No data available  
Auto-ignition temperature: No data available  
Thermal decomposition: > 392 °F
- Viscosity, dynamic: at 77 °F: 190 - 250 mPa\*s  
Explosive properties: Vapors may form explosive mixtures with air.

**10. Stability and reactivity**

- Reactivity: refer to possibility of hazardous reactions
- Chemical stability: Stable under recommended storage conditions.
- Possibility of hazardous reactions  
Vapors may form explosive mixtures with air.

Conditions to avoid: Take precautionary measures against static discharges. Keep away from sources of ignition - No smoking. Protect from heat and direct sunlight.

Incompatible materials: Avoid contact with strong oxidizing agents, strong acids, strong bases, copper and copper alloys.

Hazardous decomposition products: No hazardous decomposition products when regulations for storage and handling are observed.

Thermal decomposition: > 392 °F

**11. Toxicological information**

**Toxicological tests**

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met. ATEmix calculated: 2673.3 mg/kg. May be harmful if swallowed.

Acute toxicity (dermal): Acute Toxicity - dermal - Category 4 = Harmful in contact with skin. ATEmix calculated: 1724.4 mg/kg

Acute toxicity (inhalative): Acute Toxicity - inhalative - Category 2 = Fatal if inhaled. ATEmix calculated (dusts/mist): 0.3053 mg/L

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

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

Sensitisation to the respiratory tract: Lack of data.

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

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Reproductive toxicant - Category 1B = May damage fertility.

Effects on or via lactation: Lack of data.

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

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

Aspiration hazard: Lack of data.

Other information: Information about Diethylenetriamine:  
 LD50 Rat, oral: 1,620 mg/kg  
 LD50 Rabbit, dermal: 1,045 mg/kg  
 LC50 Rat, inhalative (dusts/mist): 0.185 mg/L/4h  
 Information about 4,4'-Isopropylidenediphenol:  
 LD50 Rat, oral: 2,000 - 5,000 mg/kg  
 LD50 Rabbit, dermal: 6,400 mg/kg  
 LC50 Rat, inhalative (dusts/mist): > 170 mg/m<sup>3</sup>/6h

**Symptoms**

In case of inhalation:  
 Irritant effect on the respiratory tract, cough, reduced fetal weight, increase in skeletal deformities  
 In case of ingestion: Stomachache, reduced fetal weight, increase in skeletal deformities  
 After contact with skin:  
 Pain, redness, reduced fetal weight, increase in skeletal deformities  
 After eye contact: Eye contact may cause irritation, redness, tearing or blurry vision.

**12. Ecological information**

**Ecotoxicity**

Aquatic toxicity: Toxic to aquatic life with long lasting effects.  
 Information about Diethylenetriamine:  
 Fish toxicity:  
 LC50: 430 mg/L/96h  
 NOEC: 10 mg/L/28d (OECD 210)  
 Daphnia toxicity:  
 EC50: 32 mg/L/48h  
 NOEC: 5.6 mg/L/21d  
 Algae toxicity:  
 EbC50: 1,164 mg/L/72h (OECD 201)  
 NOEC: 10 mg/L/72h (OECD 201)  
 Information about 4,4'-Isopropylidenediphenol:  
 Fish toxicity:  
 LC50: 7.5 mg/L/96h  
 NOEC: 0.016 mg/L/444d (OECD 210)  
 Daphnia toxicity:  
 EC50: 3.9 - 10.2 mg/L/48h  
 Algae toxicity:  
 EC50: 2.5 - 3.1 mg/L/96h

**Mobility in soil**

No data available

**Persistence and degradability**

Further details: No data available

**Additional ecological information**

Volatile organic compounds (VOC):  
 100 % by weight = 1050 g/L  
 General information: Do not allow to penetrate into soil, waterbodies or drains.

**13. Disposal considerations**

**Product**

Recommendation: Special waste. Dispose of waste according to applicable legislation.

**Contaminated packaging**

Recommendation: Waste key number:  
 150102 Plastic packaging  
 150104 Metallic packaging  
 Dispose of waste according to applicable legislation.

**14. Transport information**

**USA: Department of Transportation (DOT)**

Identification number: UN2079  
 Proper shipping name: UN 2079, UN 2079, DIETHYLENETRIAMINE, solution  
 Hazard class or Division: 8  
 Packing Group: II  
 Labels: 8  
 Special provisions: B2, IB2, T7, TP2  
 Packaging – Exceptions: 154  
 Packaging – Non-bulk: 202  
 Packaging – Bulk: 242  
 Quantity limitations – Passenger aircraft / rail:  
     1 L  
 Quantity limitations – Cargo only: 30 L  
 Vessel stowage – Location: A  
 Vessel stowage – Other: 40, 52



**Sea transport (IMDG)**

UN number: UN 2079  
 Proper shipping name: UN 2079, DIETHYLENETRIAMINE, solution  
 Class or division, Subsidiary risk: Class 8, Subrisk -  
 Packing Group: II  
 EmS: F-A, S-B  
 Special provisions: -  
 Limited quantities: 1 L  
 Excepted quantities: E2  
 Contaminated packaging - Instructions: P001  
 Contaminated packaging - Provisions: -  
 IBC - Instructions: IBC02  
 IBC - Provisions: -  
 Tank instructions - IMO: -  
 Tank instructions - UN: T7  
 Tank instructions - Provisions: TP2  
 Stowage and handling: Category A. SW2  
 Segregation: SG35  
 Properties and observations: Yellow hygroscopic liquid with ammoniacal odour. Soluble in water. Strongly alkaline, corrosive. Can form explosive mixtures with nitric acid. Reacts with oxidizing substances. Corrosive to copper and its alloys. Reacts violently with acids. Liquid and vapour can cause severe damage to skin and eyes.  
 Marine pollutant: yes  
 Segregation group: 18



**617P15 - Quick Hardener (HY 2958)**

Material number 617P15

**Air transport (IATA)**

UN/ID number: UN 2079  
 Proper shipping name: UN 2079, DIETHYLENETRIAMINE, solution  
 Class or division, Subsidiary risk: Class 8  
 Packing Group: II  
 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  
 Emergency Response Guide-Code (ERG): 8L

**15. Regulatory information**

**National regulations - U.S. Federal Regulations**

Product: TSCA: All ingredients are listed or need not be listed.  
 Diethylenetriamine: TSCA listed  
 4,4'-Isopropylidenediphenol: Clean Air Act:  
     Hazardous Air Pollutants: yes  
     SOCMI Chemical: yes  
 Other Environmental Laws:  
     SARA Title III Section 313, Toxic Release: Conc. 1.0% / Threshold Standard

**National regulations - U.S. State Regulations**

Diethylenetriamine: California Proposition 65 code: -  
 Idaho Air Pollutant List:  
     Title 585: AAC: 0.2 - EL: 0.267 - OEL: 4 - Title 586: -  
 Massachusetts Haz. Substance codes: 4,5,6  
 Minnesota Haz. Substance:  
     Codes: A - Ratings: -  
 Pennsylvania Haz. Substance code: -  
 Washington Air Contaminant:  
     TWA: 1 ppm - 4 mg  
     Skin: Protective measures should be taken to prevent or reduce skin absorption.  
 4,4'-Isopropylidenediphenol: California Proposition 65 code: -  
 Delaware Air Quality Management List:  
     DRQ: 100 - RQ State: State requirement differs from Federal  
 Massachusetts Haz. Substance codes: F9  
 New Jersey RTK Hazardous Substance:  
     DOT: -- - Sub No.: 2388 - TPQ: -  
 Pennsylvania Haz. Substance code: E  
 California Proposition 65: female  
 Rhode Island HSL: listed

**National regulations - Canada**

DSL: All ingredients are listed or need not be listed.

**National regulations - Great Britain**

Hazchem-Code: 2X

**16. Other information**

Text for labeling: Contains 60 - 100 % Diethylenetriamine, 30 - 60 % 4,4'-Isopropylidenediphenol. Safety data sheet available on request.

Hazard rating systems: NFPA Hazard Rating:



Health: 3 (Serious)  
Fire: 1 (Slight)  
Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 3 (Serious) - Chronic effects  
Flammability: 1 (Slight)  
Physical Hazard: 0 (Minimal)  
Personal Protection: X = Consult your supervisor

HEALTH	*	3
FLAMMABILITY		1
PHYSICAL HAZARD		0
		X

Reason of change: Changes in section 1.3: Corporate headquarters

Date of first version: 10/19/1994

**Department issuing data sheet**

Contact person: see section 1: Dept. 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.