

## Material Safety Data Sheet

Printing date 01/17/2008

Reviewed on 01/16/2008

**1 Identification of substance:**

- **Product details:**
- **Trade name:** TEMED
- **Catalog or product number:** 1610801, 1610800, 9700106, 1610800EDU, 1610801EDU
- **Application of the substance / the preparation** Laboratory chemicals
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547 (510)741-1000
- **Information department:** Technical services, customer support.
- **Emergency information:**  
1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT.  
510-741-1000  
1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization:**
- **CAS No. Description:**  
110-18-9 N,N,N',N'-tetramethylethylenediamine
- **Identification number(s):**
- **EINECS Number:** 203-744-6
- **EU Number:** 612-103-00-3
- **Additional information:** For the wording of the listed risk phrases refer to section 16.

**3 Hazards identification**

- **Emergency overview:**  
Corrosive.  
Flammable.  
May cause irreversible eye damage.  
C Corrosive  
F Highly flammable
- **Routes of exposure:**  
Ingestion  
Inhalation
- **Information pertaining to particular dangers for man and environment**  
R 11 Highly flammable.  
R 20/22 Harmful by inhalation and if swallowed.  
R 34 Causes burns.
- **Classification system**  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.

**4 First aid measures**

- **General information**  
Immediately remove any clothing soiled by the product.  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

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- **After inhalation**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing**  
Immediately call a doctor.  
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Information for doctor**
- **The following symptoms may occur:** Breathing difficulty

**5 Fire fighting measures**

- **Suitable extinguishing agents** CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** Mount respiratory protective device.

**6 Accidental release measures**

- **Person-related safety precautions:** Wear protective equipment (See section 8). Keep unprotected persons away.
- **Measures for environmental protection:**  
Prevent seepage into sewage system, workpits and cellars.  
Dilute with plenty of water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
Ensure good ventilation/exhaustion at the workplace.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:** Not required.

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- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**  
 Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes and skin.
- **Breathing equipment:**  
 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:** Protective gloves.
- **Material of gloves:** Synthetic gloves
- **Penetration time of glove material**  
 The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**  
 Safety glasses  
 Tightly sealed goggles.

**9 Physical and chemical properties:**

· **General Information**

**Form:** liquid  
**Color:** Light yellow  
**Odor:** Amine-like

· **Change in condition**

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** 118°C

· **Flash point:** ≤ 21°C

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

**Lower:** 0.98 Vol %  
**Upper:** 9.08 Vol %

· **Density at 20°C:** 0.78 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

**Water:** Fully miscible  
**Organic solvents:** 100.0 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** No dangerous decomposition products known

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**11 Toxicological information**

· **Acute toxicity:**

· **LD/LC50 values for hazardous components per OSHA criteria:**

**110-18-9 N,N,N',N'-tetramethylethylenediamine**

Oral	LD50	1580 mg/kg (rat)
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Dermal	LD50	5390 mg/kg (rbt)
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· **Primary irritant effect:**

· **on the skin:** Caustic effect on skin and mucous membranes.

· **on the eye:** Strong caustic effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Target organs:**

Skin.

Respiratory tract.

**12 Ecological information:**

· **General notes:** Must not reach bodies of water or drainage ditch undiluted or unneutralized.

**13 Disposal considerations**

· **Product:**

· **Recommendation**

Hand over to hazardous waste disposers.

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

· **DOT regulations:**

· **Hazard class:** 3

· **Identification number:** UN2372

· **Packing group:** II

· **Proper shipping name (technical name):** 1,2-DI-(DIMETHYLAMINO ETHANE)

· **Label** 3

· **Land transport ADR/RID (cross-border)**

· **ADR/RID class:** 3 Flammable liquids

· **Danger code (Kemler):** 33

· **UN-Number:** 2372

· **Packing group:** II

· **Label** 3

· **Description of goods:** 2372 1,2-DI-(DIMETHYLAMINO) ETHANE

· **Maritime transport IMDG:**

· **IMDG Class:** 3

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· **UN Number:** 2372  
 · **Label** 3  
 · **Packing group:** II  
 · **EMS Number:** F-E,S-D  
 · **Marine pollutant:** No  
 · **Proper shipping name:** 1,2-DI-(DIMETHYLAMINO) ETHANE

· **Air transport ICAO-TI and IATA-DGR:**  
 · **ICAO/IATA Class:** 3  
 · **UN/ID Number:** 2372  
 · **Label** 3  
 · **Packing group:** II  
 · **Proper shipping name:** 1,2-DI-(DIMETHYLAMINO ETHANE)

**15 Regulations**

· **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

Substance not listed.

· **Section 313 (40CFR372.65):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

· **MAK (German Maximum Workplace Concentration)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

· **Markings according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

· **Code letter and hazard designation of product:**

C Corrosive

F Highly flammable

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· **Risk phrases:**

- 11 Highly flammable.
- 20/22 Harmful by inhalation and if swallowed.
- 34 Causes burns.

· **Safety phrases:**

- 16 Keep away from sources of ignition - No smoking.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- 45 In case of accident or if you feel unwell, seek medical advice immediately.
- 60 This material and its container must be disposed of as hazardous waste.

· **National regulations**

Class	Share in %
NK	50-100

**16 Other information:**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing MSDS:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· **\* Data compared to the previous version altered.**