MATERIAL SAFETY DATA SHEET

IDENTIFICATION

Stratagene Cloning Systems
11011 N. Torrey Pines Rd.
La Jolla, CA 92037

Date of Last Update: 6/16/00
Phone #: 800-894-1304
Fax # : 858-535-0071

Catalog # : 1049-13
CAS # : 110-18-9

Product Name: TEMED

HAZARDOUS COMPONENTS

Chemical Name & Synonyms: TEMED 1,2-bis-(dimethylamino)ethane; 1,2-di-(dimethylamino)ethane(DOT); 1,2-ethanediamine, N,N,N',N'-tetramethyl-(9CI); propamine D; TEMED; TETRAMEEN; N,N,N',N'-tetramethyl-1,2-diaminoethane; N,N,N',N'-tetramethylethanediamine; N,N,N',N'-tetramethyl-1,2-ethanediamine; tetramethyl ethylene diamine; N,N,N',N'-tetramethylethylenediamine; TMEDA; UN2372 (DOT)

OSHA PEL Limits: N/A
ACGIH TLV: N/A
Other Limits Recommended: N/A

KIT	%
300161 TEMED 50 ml	≥99%

TOXICITY DATA

Irritation Data

SKN-RBT	10 mg/24 hr. open	JIHTAB 30,63, 1948
EYE-RBT	750 µg Sev.	AJOPAA 29, 1363, 1946

Toxicity Data

ORL-RAT	LD_{50}: 268 mg/kg	TOXID9 15, 19, 1995
IHL-RAT	LC_{50}: 1318 ppm/4H	TOXID9 8, 249, 1988
ORL-MUS	LD_{50}: 630 mg/kg	GTPZAB 28(6), 55, 1984
SKN-RBT	LD_{50}: 5390 mg/kg	AIHAAP 30, 470, 1969
SCU-RBT	LD_{50}: 1230 mg/kg	TOXID9 15, 19, 1995
ORL-QAL	LD_{50}: >316 mg/kg	EESADV 6, 149, 1982

Reviews, Standards, and Regulations

OEL=MAK
NOHS 1974: HZD A1174: NIS 1: TNF 33: NOS 1: TNE 66
NOES 1983: HZD A1174: NIS 1: TNF 7: NOS 1: TNE 28
EPA TSCA Section 8 (B) Chemical Inventory.
EPA TSCA Test Submission (TSCATS) Data Base, April, 1997.

Target Organ Data:

Brain and coverings (other degenerative changes).
Spinal cord (other degenerative changes).
Sense organs and special senses (other eye effects).
Behavioral (ataxia).
Behavioral (irritability).
Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

RTECS #:

KV7175000
Ethylenediamine, N,N,N',N'-Tetramethyl-

HEALTH HAZARD DATA

Acute Effects:

Harmful if inhaled or swallowed.
May be harmful if absorbed through the skin.
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin.
Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.

Prolonged Contact Can Cause:

Severe irritation or burns.
Exposure to vapor, even in low concentrations, can cause lacrimation, conjunctivitis and corneal edema when vapor is absorbed into the tissue of the eye. The corneal edema may give rise to a perception of a "halo", "blue haze", or "fog" around lights. This effect is usually reversible although it may last a couple of days.

First Aid:

In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.
Assure adequate flushing of the eyes by separating the eyelids with fingers.
If inhaled, remove to fresh air, if not breathing give artificial respiration. If breathing is difficult, give oxygen.
If swallowed, wash out the mouth with water provided person is conscious. Call a physician.
Wash contaminated clothing before reuse.
In all cases, contact a physician immediately.

PHYSICAL DATA

Appearance and Odor:

Colorless liquid.

Physical Properties:

Boiling point:	120^{o} C to 122^{o} C
Melting point:	-55^{o} C
Flashpoint:	50^{o} F
	10^{o} C
Explosion limits in air:	
Upper:	9.08%
Lower:	0.98%
Specific gravity:	0.770
Molecular formula:	$C_6H_{16}N_2$

FIRE AND EXPLOSION HAZARD DATA

Extinguishing Media:

Carbon dioxide, dry chemical powder or appropriate foam.
Water may be effective for cooling, but may not effect extinguishment.

Special Firefighting Procedures:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Flammable.

Unusual Fire and Explosions Hazards:

Vapor may travel considerable distance to source of ignition and flashback.
Container explosion may occur under fire conditions.
Emits toxic fumes under fire conditions.
Forms explosive mixtures in air.

REACTIVITY DATA

Incompatibilities:

Acids.
Acid chlorides.
Acid anhydrides.
Strong oxidizing agents.
Carbon dioxide.
Copper and its alloys.

Hazardous Combustion or Decomposition Products:

Thermal decomposition may produce carbon monoxide, carbon dioxide, and nitrogen oxides.

Stability:

Stable.

Hazardous polymerization

Will not occur.

SPILL OR LEAK PROCEDURES

Steps to be taken if Material is Released or Spilled:

Evacuate area.
Shut off all sources of ignition.
Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.
Cover with dry-lime, sand or soda ash.
Place in covered containers using non-sparking tools and transport outdoors.
Ventilate area and wash spill site after material pickup is complete.

Waste Disposal Method:

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.
Observe all Federal, State and local environmental regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Label Precautionary Statements

Flammable (USA).
Highly flammable (EU).
Corrosive.
Causes burns.
Harmful by inhalation and if swallowed.
Keep away from sources of ignition - no smoking.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Exposure controls/ personal protection:

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, and other protective clothing.
Safety shower and eye bath.
Use only in a chemical fume hood.
Do not breath vapor.
Avoid contact with eyes, skin and clothing.
Avoid prolonged or repeated exposure.
Wash thoroughly after handling.
Keep tightly closed.
Keep away from heat, sparks, and open flame.
Store in a cool, dry place.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Stratagene shall not be held liable for any damage resulting from handling or from contact with the above product.