SAFETY DATA SHEET

Conforms to regulation (EC) no. EU 453/2010

SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name: TEMED **Product Number:** EC-503

1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users

1.3 Details of the Supplier of the Safety Data Sheet

Manufacturer
National Diagnostics
305 Patton Drive
Atlanta, GA 30036
(404) 699-2121
(800) 526-3867
info@nationaldiagnostics.com

1.4 Emergency Telephone Number

Chemtrec
1-800 424-9300 (U.S. & Canada)
01-703-527-3887 (outside U.S. & Canada)

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]
Serious Eye Damage/Eye Irritation (Category 2B)

2.2 Label Elements

GHS LABEL ELEMENTS AND CLASSIFICATION

GHS Label Elements

DANGER
H225 - Highly flammable liquid and vapor.
H314 - Causes severe skin burns and eye damage.
H302 - Harmful if swallowed
H332 - Harmful if inhaled.
P210 - Keep away from heat/sparks/open flames/hot surfaces---no smoking.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER or doctor/physician.

2.3 Other Hazards

None found.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Chemical Names/Description
N, N, N', N' - Tetramethylethylenediamine

Chemical Formula
$C_6H_{16}N_2$

Component List

Component	% Comp.	CAS #	EC #
Tetramethylethylenediamine	100	110-18-9	203-744-6

SECTION 4 - FIRST AID MEASURES

4.1 Description of First Aid Measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion

Do not induce vomiting. If swallowed and the person is conscious, immediately give large amounts of water. Get medical attention.

Skin

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Inhalation

Burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Inhalation may be fatal as a result of spasm inflammation and edema of the larynx and bronchi, chemical pneuomonitis and pulmonary edema.

Ingestion

Can cause sore throat, vomiting, diarrhea.

Skin

Redness, pain, and severe burns.

Eyes

Blurred vision, redness, and pain. Continuous exposure to low levels of vapor can cause a blurring of vision called Blue Haze.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Unknown/not applicable

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

Dry powder, foam, carbon dioxide. (Water may be ineffective.)

5.2 Special Hazards Arising from the Substance/Mixture

Hazardous Combustion Products

Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

Hazardous Decomposition Products

Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

Hazardous Polymeriation

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

5.3 Advice for Firefighters

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

5.4 Further Information

No data available.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions

Wear appropriate protective equipment as specified in Section 8.

6.2 Environmental Precautions

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

6.3 Methods and Materials for Containment and Cleaning Up

Ventilate area. Remove all sources of ignition. Isolate hazard area. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material and place in a chemical waste container.

6.4 References to Other Sections

For disposal information, see Section 13. For Protective clothing and equipment, see Section 8.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. Transfer methods should avoid static sparks. Use explosion proof ventilation.

7.2 Conditions for Safe Storage (including any incompatibles)

Store tightly capped under nitrogen gas at 4C. Isolate from incompatible materials (section 10).

Incompatibles

Acids, acid chlorides, acid anhydrides, strong oxidizing agents, carbon dioxide, copper and copper alloys.

7.3 Specific End Uses

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SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

8.1 Control Parameters

ACGIH Threshold Limit Value (TLV): none established
OSHA Permissable Exposure Limit (PEL): none established

8.2 Exposure Controls

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

Respiratory Protection

For conditions of use where exposure to the substance is apparent, consult an industrial hygienist. For emergencies, or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator.

Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical & Chemical Properties

a. Appearance	Clear, colorless liquid	**b. Odor**	Strong amine odor
c. Odor Threshold	N.A.	**d. pH**	No information found
e. Melting/Freezing Point (^{o}C)	-55	**f. Boiling point (^{o}C)**	120-122
g. Flash Point (^{o}C)	10	**h. Evaporation Rate**	No information found
i. Flammability	Combustible	**j. Upper/Lower Flammability or Explosive Limits**	LEL, 0.98%; UEL, 9.08%
k. Vapor Pressure	16 mm Hg @ 20C	**l. Vapor Density (Air = 1)**	No information found
m. Relative Density	0.78 @ 20 C	**n. Water Solubility**	Soluble in water
o. Partition Coefficient n-octanol/water	N.A.	**p. Autoignition Temperature (^{o}C)**	N.A.
q. Decomposition Temperature (^{o}C)	N.A.	**r. Viscosity**	No data available.
s. Explosive Properties	Flammable vapors may create explosive condition	**t. Oxidizing Properties**	Not an oxidizer

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

Strong amine base- reacts violently with acids and oxidizing agents. Flammable vapors. Corrosive.

10.2 Chemical Stability

Stable under ordinary conditions of use and storage.

10.3 Possibility of Hazardous Reactions

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

10.4 Conditions to Avoid
Heat, flames, ignition sources and incompatibles.

10.5 Incompatible Materials
Acids, acid chlorides, acid anhydrides, strong oxidizing agents, carbon dioxide, copper and copper alloys.

10.6 Hazardous Decomposition Products
Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

SECTION 11 - TOXICOLOGICAL INFORMATION
Product LD50 Values
Oral Rat LD50 (mg/kg)
268

Dermal Rabbit LD50 (mg/kg)
5390

Component Cancer List Status

	NTP Carcinogen		
	Known	Anticipated	IARC Category
Tetramethylethylenediamine	No	No	None

Potential Health Effects
Inhalation
Corrosive. Extremely destructive to tissues of the mucous membranes and upper respiratory tract.

Ingestion
Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach.

Skin
Corrosive. Can cause severe burns of the skin. May be absorbed through the skin with possible systemic effects.

Eyes
Corrosive. Contact can cause severe tissue burns.

Carcinogenicity
Not listed by NTP or IARC as a known or anticipated carcinogen.

Mutagenicity
Negative in the Ames Salmonella/Microsome Assay.

Reproductive Toxicity
No information found.

Teratogenic Effects
No information found.

Routes of Entry
Inhalation, ingestion or skin contact.

Target Organ Statement
Skin and eyes (irritation) are expected to be the primary target organs of this product. Continuous exposure to low levels of vapor can cause a blurring of vision called Blue Haze. This effect is temporary if the affected individual is removed to fresh air. Continuous exposure may have an effect on the nervous system.

SECTION 12 - ECOLOGICAL INFOMATION
12.1 Toxicity

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxcitiy (ppm unless otherwise noted)	No data	No data	No data	No data

	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

12.2 Persistence and Degradability
No data

12.3 Bioaccumulative Potential
No data

12.4 Mobility in Soil
No data

12.5 Results of PBT and vPvB Assessment
No data

12.6 Other Adverse Effects
None

SECTION 13 - DISPOSAL CONSIDERATIONS
13.1 Waste Treatment Methods
Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	2372	2372	2372	2372
14.2 Shipping Name	1,2 - Di - (dimethylamino) ethane	1,2 - Di - (dimethylamino) ethane	1,2 - Di - (dimethylamino) ethane	1,2 - Di - (dimethylamino) ethane
14.3 Hazard Class	3	3	3	3
14.4 Packing Group	II	II	II	II
14.5 Environmental Hazards	N.A.	N.A.	N.A.	N.A.
14.6 Special Precautions	N.A.	N.A.	N.A.	N.A.

SECTION 15 - REGULATORY INFORMATION
15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture
United States
TSCA Regulatory Statement
All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
Tetramethylethylenediamine	Yes	No	No	Yes	No

Europe
EEC Regulatory
All intentional ingredients are listed on the European EINECS Inventory.

SECTION 16 - OTHER INFORMATION
Revisional Updates
5/29/2015 - Updated Sections 2.1 and 3.1
7/23/2013 - Released Version 1.0

NFPA Codes
Health 3 **Flammability** 3 **Reactivity** 1