

MATERIAL SAFETY DATA SHEET

**VIVANTIS TECHNOLOGIES SDN BHD
REVONGEN CORPORATION CENTER**

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SECTION 1: CHEMICAL IDENTIFICATION

Catalogue Number: PR0616-25ml; PR0616-50ml; PR0616-100ml

Product Name: N,N,N',N'-Tetramethylethylene-Diamine (TEMED)

Intended Use:

For research use only. Not for use in diagnostic procedures.

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SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	EC No.	%
1,2-Bis(dimethylamino)ethane	110-18-9	203-744-6	95-100

Synonyms: 1,2-bis-(dimethylamino)ethane; 1,2-di-(dimethylamino)ethane (DOT); 1,2-ethanediamine; N,N,N',N'-tetramethyl-(9Cl); 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

SECTION 3: HAZARDS IDENTIFICATION

GHS Classification

Flammable liquid-	Category 2
Acute toxicity (oral)-	Category 4
Acute toxicity (inhalation)-	Category 4
Skin corrosion/irritation-	Category 1B

GHS labels elements, including precautionary statements



Signal word: Danger

Hazard statements

H225	Highly flammable liquid and vapor
H301	Toxic if swallowed
H314	Causes severe skin burns and eye damage
H331	Toxic if inhaled

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Precautionary statements

P210	Stay away from heat/ sparks/ open flames/ hot surfaces. No smoking
P261	Avoid breathing dust/ fume/ gas/ mist/ vapor/ spray
P280	Wear protective gloves/protective clothing/ eye protection/ face protection
P305+P351+P338	Rinse cautiously with water for several minutes if contact with eyes. Remove contact lenses, if present and easy to do, and continue rinsing.
P310	Call a poison center immediately or attend to doctor/physician.

SECTION 4: FIRST-AID MEASURES

In case of eye contact, wash copiously with water for at least 15 minutes. Consult a physician afterwards.

In case of skin contact, wash with soap and plenty running water and remove all contaminated clothing and shoes.

In case of inhalation, remove to fresh air. If not breathing give artificial respiration. Seek medical assistance if there are problems.

In case of ingestion, wash out mouth with water provided the person is conscious. Never give anything by mouth to an unconscious person. Drink plenty of water afterwards.

SECTION 5: FIRE FIGHTING MEASURES

Flammable liquid.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Media which are not suitable for extinguishing purpose include vapor may travel considerable distance to source of ignition and flash back.

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH and full protective gear.

Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides

Flash point: 20°C / 68°F

Explosion data – sensitivity to mechanical impact: Not sensitive.

Explosion data – sensitivity to static discharge: Not sensitive.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

For personal protection, use personal protective equipment. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

For environmental precautions, prevent further leakage or spillage if safe to do so for containment.

For cleaning up, cover with dry lime or soda ash. Only use non-sparking tools and equipment for removal of spill residue. Pick up and transfer to properly labeled containers. Wash spill site after material pick up is done and ventilate area.

SECTION 7: HANDLING AND STORAGE

Handle in accordance with good industrial hygiene and safety practice.

Keep containers tightly closed in a dry, cool and well-ventilated place.

Hygroscopic and protect from moisture.

Incompatible with acids, acid chlorides, anhydrides, strong oxidizing agents, carbon dioxide copper, and copper alloys.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection Where exposure limits are exceeded, wear respiratory protection. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Positive pressure-supplied air respirators may be required for high airborne contamination concentrations.

Eye protection Use safety glasses with side-shields.

Skin and body protection Impervious clothing. Wear protection gloves/clothing.

Use engineering measures such as showers, eyewash stations and ventilation systems.

Handle in accordance with good industrial hygiene and safety practice.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear
Physical state:	Liquid
Odor:	Amine-like
Odor threshold:	No information available
Density:	4.0
pH:	No data available
Freezing Point:	No information available
Melting Point:	-55°C
Initial Boiling Point:	No information available
Boiling Point:	120-122°C
Flash Point:	20°C / 68°F
Auto-ignition temperature:	No data available
Decomposition temperature:	No information available
Upper flammability limits in air:	9.08%
Lower flammability limits in air:	0.98%
Explosive Properties:	No information available
Oxidizing properties:	No information available
Solubility:	No information available
Water solubility:	Soluble in water
Partition coefficient (n-octanol/water):	No data available
MMHG@37.8°C:	No data available
Vapor density:	No data available
Evaporation rate:	No data available
Specific gravity:	0.770
Viscosity:	No information available

SECTION 10: STABILITY AND REACTIVITY

Stable under recommended storage conditions.

Materials to avoid:	Acids, acid chlorides, anhydrides, strong oxidizing agents, carbon dioxide copper, copper alloys
Hazardous decomposition products:	Carbon oxides, nitrogen oxides
Hazardous polymerization:	Do not occur
Condition to avoid:	Hygroscopic and protect from moisture

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SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity

This product is toxic when swallowed or inhaled. This product is corrosive to eye, skin and respiratory system.

Oral LD50: Rat – 268 mg/kg
Dermal LD50: Rabbit – 5390 mg/kg
Inhalation LC50: Rat – 1318 ppm – 4hrs

Chronic toxicity

This product has no known chronic effect, and no known target organ effects based on information supplied.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

The environmental effect of this product has not been fully investigated.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose waste material in accordance with all federal, state and local environmental regulation. Observe all federal, state and local environmental regulations.

SECTION 14: TRANSPORT INFORMATION

DOT (US)

UN no.: 2372 Class: 3 Packing group: II
Proper shipping name: 1,2-Di-(Dimethylamino)ethane

IATA

UN no.: 2372 Class: 3 Packing group: II
Proper shipping name: 1,2-Di-(Dimethylamino)ethane

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SECTION 15: REGULATORY INFORMATION

International inventories

TSCA	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Do not comply
PICCS	Complies
AICS	Complies

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulation, Part 372.

SARA 311/312 Hazards Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following substances which are regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

Chemical name:	1,2-Bis(dimethylamino)ethane
CAS No.:	110-18-9
Weight%:	95-100
VOC Chemicals:	Group V

U.S. State Regulations

California Prop. 65 Components

This product does not contain any Proposition 65 chemicals.

International Regulations

Mexico – Grade

No information available

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WHMIS Hazard Class

B2 Flammable liquid

D2B Toxic materials

E Corrosive material



SECTION 16: OTHER INFORMATION

The information contained in this MSDS relates only to the material(s) designed and does not relate to use(s) in combination with any other material, process(es) and /or chemical reaction(s). Vivantis Technologies Sdn. Bhd. provides this information in good faith, from sources believed to be accurate; however, Vivantis assumes no liability for its accuracy or completeness, and thus shall not be held liable for any damage resulting from handling or from contact with the above product.

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