1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	M-Bond Curing Agent – Type 15
Chemical Name	3-Diethylaminopropylamine
CAS No.	104-78-9
EINECS No.	203-236-4
REACH Registration No.	None assigned.

1.2 Recommended use of the chemical and restrictions on use

Identified Use(s)	Adhesives.
Uses Advised Against	None known.

1.3 Supplier's details

Company Identification	VISHAY MEASUREMENTS GROUP, INC. Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	919-365-3800
Fax	919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com

1.4 Emergency Phone No. 1-800-424-9300
CHEMTREC

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 GHS Classification

Flam. Liq. 3; H226
Acute Tox. 4; H302
Acute Tox. 4; H312
Skin Corr. 1B; H314
Skin Sens. 1; H317
STOT SE 3; H335

2.2 Label elements

Product Name: M-Bond Curing Agent – Type 15

Hazard Pictogram(s)

Signal Word(s): Danger

Hazard Statement(s)

H226: Flammable liquid and vapour.
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H335: May cause respiratory irritation.

Precautionary Statement(s)

P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical identity of the substance	CAS No.	EC No.	REACH Registration No.
3-Diethylaminopropylamine	104-78-9	203-236-4	None assigned

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. IF INHALED: Do not use mouth-to-mouth resuscitation.

Skin Contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER/doctor.

Eye Contact: 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. Treatment by an ophthalmologist due to possible caustic burn of the eyes may be required.

Ingestion: IF SWALLOWED: Rinse mouth. Do not induce vomiting unless instructed to do so by medical personnel. Immediately call a POISON CENTER/doctor.

4.2 Most important symptoms and effects, both acute and delayed Harmful if swallowed or in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause respiratory irritation. (Respiratory tract, Exposure route: Inhalation)

4.3 Indication of any immediate medical attention and special treatment needed Treat symptomatically. IF IN EYES: Obtain prompt consultation, preferably from an ophthalmologist. Chemical eye burns may require extended irrigation.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media: As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or waterspray.

Unsuitable extinguishing media: Do not use water jet. Direct water jet may spread the fire.

5.2 Special hazards arising from the substance or mixture Flammable liquid and vapour. May decompose in a fire giving off toxic fumes. Decomposes in a fire giving off toxic fumes: Ammonia, Nitrogen oxides, Carbon monoxide and Carbon dioxide. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback.

5.3 Advice for fire-fighters Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures Avoid contact with skin, eyes or clothing. Avoid breathing vapours. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

		Ensure adequate ventilation. Use personal protective equipment as required. See Section: 8.
6.2	**Environmental precautions**	Avoid release to the environment. Do not allow to enter drains, sewers or watercourses.
6.3	**Methods and material for containment and cleaning up**	Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. This material and its container must be disposed of as hazardous waste.
6.4	**Reference to other sections**	See Section: 8, 13

7. SECTION 7: HANDLING AND STORAGE

7.1	**Precautions for safe handling**	Avoid contact with skin, eyes or clothing. Do not breathe vapour. Ensure adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use personal protective equipment as required. See Section: 8. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.
7.2	**Conditions for safe storage, including any incompatibilities**	Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
	Storage temperature	Ambient.
	Storage life	Stable under normal conditions.
	Incompatible materials	Keep away from: Strong oxidising agents, Acids, Nitrates, Nitrites, Halogens, Carbon dioxide, Nitric oxide and Water. May react violently with: Alkalis.
7.3	**Specific end use(s)**	Adhesives. See Section: 1.2

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1	**Control parameters**	
8.1.1	**Occupational Exposure Limits**	Not established.
8.1.2	**Biological limit value**	Not established.
8.1.3	**PNECs and DNELs**	Not established.
8.2	**Exposure controls**	
8.2.1	**Appropriate engineering controls**	Ensure adequate ventilation. or Use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Guarantee that the eye flushing systems and safety showers are located close to the working place.
8.2.2	**Individual protection measures, such as personal protective equipment (PPE)**	General hygiene measures for the handling of chemicals are applicable. Avoid contact with skin, eyes or clothing. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Do not eat, drink or smoke at the work place.
	Eye/ face protection 	Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection (EN166).
	Skin protection 	Hand protection: Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Body protection: Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
	Respiratory protection 	In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment.

	Thermal hazards	Not applicable.
8.2.3	**Environmental Exposure Controls**	Avoid release to the environment.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Almost colourless to pale yellow Liquid
Odour	Amine-like Odour
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	Not established.
Initial boiling point and boiling range	168-171℃
Flash point	53℃
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Flammable Limits (Lower) (%v/v) 1, Flammable Limits (Upper) (%v/v) 7.5
Vapour pressure	2.2 mbar @ 20℃
Vapour density	Not available.
Relative density	0.82 (H2O = 1)
Solubility(ies)	Miscible with: Water
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2 Other information VOC: 0%

10. SECTION 10: STABILITY AND REACTIVITY

10.1	**Stability and reactivity**	Stable under normal conditions.
10.2	**Chemical stability**	Stable under normal conditions.
10.3	**Possibility of hazardous reactions**	May react violently with: Alkalis.
10.4	**Conditions to avoid**	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
10.5	**Incompatible materials**	Keep away from: Strong oxidising agents, Acids, Nitrates, Nitrites, Halogens, Carbon dioxide, Nitric oxide and Water.
10.6	**Hazardous decomposition product(s)**	Decomposes in a fire giving off toxic fumes: Ammonia, Nitrogen oxides, Carbon monoxide and Carbon dioxide.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects (Substances in preparations / mixtures)

Acute toxicity

Ingestion	Acute Tox. 4: Harmful if swallowed. (Harmonised Classification(s) for 3-Diethylaminopropylamine)
Inhalation	Acute Tox. 4: May be harmful in contact with skin. (Harmonised Classification(s) for 3-Diethylaminopropylamine)
Skin Contact	Based upon the available data, the classification criteria are not met.
Skin corrosion/irritation	Skin Corr. 1B: Causes severe skin burns. (Harmonised Classification(s) for 3-Diethylaminopropylamine)
Serious eye damage/irritation	Skin Corr. 1B: Causes serious eye damage. (Harmonised Classification(s) for 3-Diethylaminopropylamine)
Respiratory or skin sensitization	Skin Sens. 1: May cause an allergic skin reaction. (Harmonised Classification(s) for 3-Diethylaminopropylamine)
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.

	Carcinogenicity	Based upon the available data, the classification criteria are not met.
	Reproductive toxicity	Based upon the available data, the classification criteria are not met.
	STOT - single exposure	STOT SE 3: May cause respiratory irritation. (Respiratory tract, Exposure route: Inhalation). (Existing ECHA registration(s) for 3-Diethylaminopropylamine)
	STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
	Aspiration hazard	Based upon the available data, the classification criteria are not met.
11.2	**Other information**	None.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1	**Toxicity**	Based upon the available data, the classification criteria are not met. Estimated Mixture LC50 >100 mg/l (Fish)
12.2	**Persistence and degradability**	This product is readily biodegradable in water.
12.3	**Bioaccumulative potential**	The product has low potential for bioaccumulation.
12.4	**Mobility in soil**	The product is predicted to have high mobility in soil.
12.5	**Results of PBT and vPvB assessment**	Not classified as PBT or vPvB.
12.6	**Other adverse effects**	None known.

13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1	**Waste treatment methods**	This material and its container must be disposed of as hazardous waste. Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.
13.2	**Additional Information**	Dispose of contents in accordance with local, state or national legislation.

14. SECTION 14: TRANSPORT INFORMATION

		ADR/RID / IMDG / IATA
14.1	**UN number**	UN 2684
14.2	**Proper Shipping Name**	3-DIETHYLAMINOPROPYL-AMINE
14.3	**Transport hazard class(es)**	3 + 8
14.4	**Packing group**	III
14.5	**Environmental hazards**	Not classified as a Marine Pollutant.
14.6	**Special precautions for user**	See Section: 2
14.7	**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**	Not applicable
14.8	**Additional Information**	None

15. SECTION 15: REGULATORY INFORMATION

15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture**	
15.1.1	**EU regulations**	
	SVHCs	None
	Germany	Water hazard class: 1
15.1.2	**National regulations**	NTP: Not listed IARC Monographs: Not listed OSHA Regulated: Not listed
15.2	**Chemical Safety Assessment**	Not available.

16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

References: Existing Safety Data Sheet (SDS), Existing ECHA registration(s) for 3-Diethylaminopropylamine (CAS# 104-78-9) and Harmonised Classification(s) for 3-Diethylaminopropylamine (CAS# 104-78-9).

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
PBT	PBT: Persistent, Bioaccumulative and Toxic
vPvB	very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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Annex to the extended Safety Data Sheet (eSDS)

No information available.

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