Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

MEGAPOSIT™ MF™ -26A DEVELOPER

Revision Date: 01/06/2012

Supplier

ROHM AND HAAS ELECTRONIC MATERIALS LLC
A Subsidiary of The Dow Chemical Company
455 FOREST STREET
MARLBOROUGH, MA 01752 United States

For non-emergency information contact: 215-592-3000

Emergency telephone number
1 800 424 9300

Local emergency telephone number
989-636-4400

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Water	7732-18-5	96.5 - 99.0 %
Tetramethylammonium hydroxide	75-59-2	2.0 - 2.5 %
Polyglycol		< 1.0 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance

Form	liquid
Colour	Colorless to yellow
Odour	Amines

Hazard Summary	**WARNING!** Alkaline liquid and vapor. Causes skin, eye, and respiratory tract irritation. Onset of symptoms may be delayed. Prolonged, repeated contact, inhalation, ingestion, or absorption through the skin, may cause adverse effects to internal organ systems.

Potential Health Effects
Primary Routes of Entry: Inhalation, ingestion, eye and skin contact, absorption.

Eyes: May cause pain, transient irritation and superficial corneal effects.

Skin: Material may cause irritation.
Prolonged or repeated exposure may have the following effects:
central nervous system depression
drowsiness
defatting of skin leading to irritation and dermatitis

Ingestion: Swallowing may have the following effects:
irritation of mouth, throat and digestive tract
Repeated doses may have the following effects:
central nervous system depression
drowsiness

Inhalation: Inhalation may have the following effects:
irritation of nose, throat and respiratory tract
Higher concentrations may have the following effects:
systemic effects similar to those resulting from ingestion

Target Organs: Eye
Respiratory System
Skin
nervous system

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA

4. FIRST AID MEASURES

Inhalation: Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.

Skin contact: Wash skin with water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.

Eye contact: Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Ingestion: Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Immediate medical attention is required. Never administer anything by mouth if a victim is losing conciousness, is unconcious or is convulsing.

Notes to physician: Treat symptomatically.

5. FIREFIGHTING MEASURES

Flash point	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable

Suitable extinguishing media: Not readily combustible.
Select extinguishing agent appropriate to other materials involved.

Specific hazards during firefighting: No specific measures necessary.

Special protective equipment for firefighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: This product may give rise to hazardous vapors in a fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear suitable protective clothing.

Environmental precautions
Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Methods for cleaning up
Cover with absorbent or contain. Collect and dispose.

7. HANDLING AND STORAGE

Handling
Use only in well-ventilated areas. Avoid breathing vapor. Avoid contact with eyes, skin and clothing.
Keep container tightly closed.

Storage
Storage conditions: Store in original container. Storage area should be: cool dry well ventilated out of direct sunlight away from incompatible materials
Further information on storage conditions: No special precautions necessary.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Exposure controls

Engineering measures: Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

Individual protection measures

Eye/face protection: Goggles

Skin protection

Hand protection: Butyl rubber gloves. Other chemical resistant gloves may be recommended by your safety professional.

Other protection: Normal work wear.

Respiratory protection: Respiratory protection if there is a risk of exposure to high vapor concentrations. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	Colorless to yellow
Odour	Amines
pH	13
Boiling point/boiling range	100 °C (212 °F)
Flash point	not applicable
Evaporation rate	Slower than ether
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure	Similar to water

Component: **Tetramethylammonium hydroxide**

Vapour pressure	17.5 mmHg at 20 °C (68 °F)

Relative vapour density	no data available
Relative density	1.01
Water solubility	completely soluble

VOC's not applicable

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions Stable under normal conditions.

Conditions to avoid contact with incompatible materials

Materials to avoid Strong oxidizing agents Acids

Hazardous decomposition products triethylamine, nitrogen oxides (NOx), oxides of carbon, Methanol,

polymerisation Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Component: **Tetramethylammonium hydroxide**
Acute oral toxicity LD50 rat male 34 - 50 mg/kg

Component: **Tetramethylammonium hydroxide**
Acute dermal toxicity LD50 rabbit > 2,000 mg/kg

Component: **Tetramethylammonium hydroxide**
Acute dermal toxicity LD50 rat 449 mg/kg

Component: **Tetramethylammonium hydroxide**
Acute dermal toxicity 2.1 %(m)
A single 4h semi-occlusive application to intact rabbit skin produced no signs of dermal irritation.
No clinical signs of toxicity were observed.
Testing complied with OECD 404 and EPA TSCA 40 CFR Part 798 standard protocols.
DOT Corrosivity testing conducted on stainless steel and laboratory animals determined that this product is not corrosive.

Component: **Tetramethylammonium hydroxide**

Acute dermal toxicity 3.5 %(m)
A single 4h semi-occlusive application to intact rabbit skin produced minimal signs of irritation (mean scores for erythema or edema less than 2).
No clinical signs of toxicity were observed.
Testing complied with OECD 404 and EPA TSCA 40 CFR Part 798 standard protocols.

Component: **Tetramethylammonium hydroxide**
Acute dermal toxicity 5 %(m)
A single 4h semi-occlusive application to intactrabbit skin produced burns (full thickness destruction of skin).
This material is corrosive.
No clinical signs of toxicity were observed.
Testing complied with OECD 404 and EPA TSCA 40 CFR Part 798 standard protocols.
Corrosive to aluminum per DOT corrosivity testing.

Component: **Tetramethylammonium hydroxide**
Acute dermal toxicity 7 %(m)
A single 4h semi-occlusive application to intactrabbit skin produced burns (full thickness destruction of skin).
This material is corrosive.
No clinical signs of toxicity were observed.
Testing complied with OECD 404 and EPA TSCA 40 CFR Part 798 standard protocols.
Corrosive to aluminum per DOT corrosivity testing.

Component: **Tetramethylammonium hydroxide**
Acute dermal toxicity <5% (w/v):
Repeated application to rat skin for 6 h/d, 5 d/wk for 4 weeks did not produce systemic toxicity.
Test material was applied continuously through a reservoir affixed to shaved animal backs.

Component: **Tetramethylammonium hydroxide**
Acute dermal toxicity >=5% (w/v):
Repeated application to rat skin for 6h/d, 5d/wk for 4 weeks produced rapid toxicity and following effects:
Convulsions
Death
Effects were noted after 2 hours of initial application.
Test material was applied continuously through a reservoir affixed to shaved animal backs.

Component: **Tetramethylammonium hydroxide**
Acute dermal toxicity LD50 guinea pig 25 mg/kg
100% (by weight).

Component: **Tetramethylammonium hydroxide**
Skin irritation This material is corrosive.

Component: **Tetramethylammonium hydroxide**
Eye irritation This material is corrosive.

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

Tetramethylammonium hydroxide

Elimination information (persistence and degradability)

Biodegradability	OECD Test Guideline 301B or Equivalent > 60 % Readily biodegradable 10-day Window: Pass

Ecotoxicity effects

Toxicity to aquatic invertebrates	EC50 Daphnia magna (Water flea) 48 Hour OECD Test Guideline 202 or Equivalent 13.9 mg/l Calculated
Toxicity to aquatic invertebrates	EC50 Daphnia magna (Water flea) 48 Hour OECD Test Guideline 202 or Equivalent 12 mg/l

13. DISPOSAL CONSIDERATIONS

Environmental precautions: Prevent the material from entering drains or water courses.
Do not discharge directly to a water source.
Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

Disposal

Dispose in accordance with all local, state (provincial), and federal regulations. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.
Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.

14. TRANSPORT INFORMATION

DOT

Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Not regulated (Not dangerous for transport)

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations

15. REGULATORY INFORMATION

Workplace Classification
OSHA: Irritant
Target organ effects

WHMIS: This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Immediate health hazard

SARA TITLE III: Section 313 Information (40CFR372)
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

United States TSCA Inventory (US.TSCA): All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

California (Proposition 65)
This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION

NFPA Hazard Rating

Health	Fire	Reactivity
3	0	0

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAc	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
|	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and

may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Version: 1.1
Print Date: 02/19/2014

Layout 101099115