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**1. PRODUCT AND COMPANY IDENTIFICATION**

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**MICROPOSIT(TM) MF(TM) -319 Developer****Supplier**Rohm and Haas Electronic Materials LLC  
455 Forest Street  
Marlborough, MA 01752 United States of America

Revision date: 01/01/2004

For non-emergency information contact: 508-481-7950

**Emergency telephone number**Chemtrec 800-424-9300  
Rohm and Haas Emergency 215-592-3000

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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

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Component	CAS-No.	Concentration
Water	7732-18-5	> 95.0 %
Surfactant		< 1.0 %
Tetramethylammonium hydroxide	75-59-2	2.2 %

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**3. HAZARDS IDENTIFICATION**

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**Emergency Overview****Appearance**

Form liquid

Colour colourless

**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 toxic effects to internal organ systems (liver, kidney, central nervous system).**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

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## **4. FIRST AID MEASURES**

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**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 consciousness, is unconscious or is convulsing.

### **Notes to physician**

Treat symptomatically.

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## **5. FIRE-FIGHTING MEASURES**

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**Flash point** Nonflammable

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

**Specific hazards during fire fighting:** No specific measures necessary.

**Special protective equipment for fire-fighters:** Wear full protective clothing and self-contained breathing apparatus.

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

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## 6. ACCIDENTAL RELEASE MEASURES

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### 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.

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## 7. HANDLING AND STORAGE

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### Handling

Use only in well-ventilated areas. Avoid breathing vapor. Avoid contact with eyes, skin and clothing.

Keep container tightly closed.

**Further information on storage conditions:** No special precautions necessary.

### Storage

**Storage conditions:** Store in original container. Storage area should be: cool dry well ventilated out of direct sunlight away from incompatible materials

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### Exposure limit(s)

Exposure limits are listed below, if they exist.

**Eye protection:** goggles

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

**Skin and body 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.

**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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

<b>Form</b>	liquid
<b>Colour</b>	colourless
<b>Odour</b>	amines
<b>pH</b>	13
<b>Boiling point/range</b>	100 °C (212 °F)
<b>Flash point</b>	Nonflammable

Component: **Tetramethylammonium hydroxide**

<b>Vapour pressure</b>	17.5 mmHg at 20 °C
<b>Relative vapour density</b>	no data available
<b>Water solubility</b>	completely soluble
<b>Relative density</b>	1.00
<b>Evaporation rate</b>	Slower than ether
<b>VOC's</b>	not applicable

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

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## 10. STABILITY AND REACTIVITY

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<b>Hazardous reactions</b>	Stable under normal conditions.
<b>Conditions to avoid</b>	contact with incompatible materials
<b>Materials to avoid</b>	Acids. Oxidizers
<b>Hazardous decomposition products</b>	Methanol, oxides of carbon., nitrogen oxides (NOx),
<b>polymerization</b>	Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

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

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 intact rabbit 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 intact rabbit 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).

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## 12. ECOLOGICAL INFORMATION

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

### **Tetramethylammonium hydroxide**

#### **Ecotoxicity effects**

#### **Toxicity to aquatic invertebrates**

LC50 ceriodaphnia dubia (water flea) 96 h

0.07 - 1.2 mg/l

A pH neutralized solution has been shown to be toxic to aquatic organisms.

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## 13. DISPOSAL CONSIDERATIONS

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**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.

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## 14. TRANSPORT INFORMATION

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#### **DOT**

Not regulated for transport

#### **IMO/IMDG**

Not regulated (Not dangerous for transport)

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## 15. REGULATORY INFORMATION

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**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.

**U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D):**

U.S. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)  
This product does not contain any substances subject to Section 12(b) export notification.

**US. Toxic Substances Control Act (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****Hazard Rating**

	<b>Health</b>	<b>Fire</b>	<b>Reactivity</b>
<b>NFPA</b>	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.

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