MATERIAL SAFETY DATA SHEET

Clariant

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER/SUPPLIER NAME: Clariant Corporation, AZ Electronic Materials
PO Box 3700, 70 Meister Avenue
Somerville, NJ 08876-1258

TELEPHONE NUMBERS:
Emergency-CHEMTREC: (800) 424-9300
Product Safety Information: (908) 429-3593
Customer Service: (800) 515-4164

PRODUCT NAME: AZ(R) 422 MIF DEVELOPER
SYNONYMS: None

MSDS NO. 7074
REVISION DATE: 11/23/1999
DATE PRINTED: 10/11/2000

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name & CAS Number	Weight Percent	Hazardous?	NJ Trade Secret #	Ingredient Synonyms	Other Information:
Tetramethylammonium hydroxide 000075-59-2	2	Yes	No	TMAH	None

Chemical Name & CAS Number	Weight Percent	Hazardous?	NJ Trade Secret #	Ingredient Synonyms	Other Information:
Water 007732-18-5	>95	No	NA	None	NJ/PA RTK listings. Not on any other state RTK list.

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
Clear liquid with slight amine odor. Noncombustible. Water soluble. Causes moderate skin irritation. Causes moderate eye irritation. EMERGENCY OVERVIEW:

POTENTIAL HEALTH EFFECTS:

Eye:

Causes moderate eye irritation.
Skin:
Causes moderate skin irritation.
Ingestion:
May be harmful if swallowed.
Inhalation:
No hazard in normal industrial use.
Systemic Effects:
No hazard in normal industrial use.
Reproductive & birth defects:
No information.
Relevant Routes of Exposure:
Liquid and mist contact with skin and eyes. Inhalation of mist.
Medical Conditions Aggravated:
Preexisting skin and eye conditions may be aggravated.

ENVIRONMENTAL OVERVIEW:
Toxic or highly toxic to fish and daphnids. Resistant to biodegradation.

SECTION 4. FIRST AID MEASURES

FIRST AID PROCEDURES:

Inhalation:
Remove victim to fresh air. Consult physician if irritation occurs.
Eye Contact:
Flush thoroughly with water for 15 minutes. Get immediate medical help.
Skin Contact:
Immediately remove contaminated clothing and wash affected area thoroughly with soap and water. Consult physician if exposure is extensive or if irritation occurs.
Ingestion:
If person is conscious, give water or milk to dilute stomach contents. Never give anything by mouth to an unconscious person. Do not induce vomiting. Consult physician.

SECTION 5. FIRE FIGHTING MEASURES

Noncombustible.Water-based material with low organic content. Compatible with extinguishing agents.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures:
Wearing appropriate personal protective equipment, contain spill, collect onto inert absorbent, and place in a suitable container. Rinse residual with water.

SECTION 7. HANDLING AND STORAGE

Handling:
Use only with adequate ventilation and proper protective eyewear, gloves, and clothing.
Storage:
Store in original container. Store at appropriate temperature. See label for details. Keep from freezing.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:
Where mist is present, provide local exhaust ventilation or a respirator certified for mist by NIOSH.
Personal Protective Equipment (PPE):
Clothing suitable to prevent skin contact. Safety eyewear to protect against splashes. Rubber gloves.

Exposure Guidelines:

Chemical Name & CAS Number	Weight Percent	Manufacturer's TWA TLV*	ACGIH TWA TLV*	OSHA PEL*	NIOSH REL*	AIHA WEEL*
Tetramethylammonium hydroxide 000075-59-2	2					

Chemical Name & CAS Number	Weight Percent	Manufacturer's TWA TLV*	ACGIH TWA TLV*	OSHA PEL*	NIOSH REL*	AIHA WEEL*
Water 007732-18-5	>95					

*TWA TLV = Time Weighted Average Threshold Limit Value
ACGIH = American Conference of Governmental Industrial Hygienists
OSHA PEL = Occupational Safety and Health Administration Permissable Exposure Limit
NIOSH REL = National Institute of Occupational Safety and Health Recommended Exposure Limit
AIHA WEEL = American Industrial Hygiene Association Workplace Environmental Exposure Level
**Skin Notation
***Hoechst Celanese Workplace Exposure Level (HCC WEL); included is a "no contact" recommendation for NMP due to its skin absorption properties.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, colorless liquid.
Odor:	Slight amine odor.
Physical State:	Liquid with dissolved solids.
pH	13.1
Vapor Pressure	aprox the same as water
Boiling Point:	100 deg C.
Solubility in water:	Soluble.
Specific gravity:	1.0
Evaporation rate (butyl acetate=1):	approx same as water
% Volatile:	98

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability:
Stable.
Hazardous Polymerization:

Will not occur.

Conditions to Avoid:
Avoid contact with strong acids. This product is expected, by test or analogy, to slowly attack aluminum and perhaps other nonferrous metals, releasing hydrogen gas.

Hazardous Decomposition Products:
If heated to dryness, TMAH may decompose to trimethylamine and methanol. TMAH reportedly decomposes in boiling water, rate unknown.

SECTION 11. TOXICOLOGICAL INFORMATION

Carcinogen:
IARC: NO NTP: NO OSHA: NO

Ingredient Toxicity Data:

Chemical Name & CAS Number	Weight Percent	oral rat LD50	skin rbt LD50	inh rat LC50
Tetramethylammonium hydroxide 000075-59-2	2	50 mg/kg as TMAH chloride salt	25 mg/kg (g pig)	

Chemical Name & CAS Number	Weight Percent	oral rat LD50	skin rbt LD50	inh rat LC50
Water 007732-18-5	>95			

TOXICITY HAZARD STATEMENTS FOR PRODUCT:

Eye Effects:
Testing in rabbits of a similar product suggests that this material is a moderate eye irritant.

Skin Effects:
Testing in rabbits of a similar product suggests that this material is a moderate skin irritant. D.O.T. four hour rabbit skin test of the highest commercial concentration of this product was negative for skin corrosion.

Acute Oral Effects:
Testing in animals shows that this material is harmful (rat acute oral LD50 between 500 and 5000 mg/kg).

Subchronic Effects:
No information available.

Chronic Effects:
No information available.

Mutagenicity/Genotoxicity:
No information

SECTION 12. ECOLOGICAL INFORMATION

Ingredient Ecological Toxicity Data:

Chemical Name & CAS Number	Weight Percent	Fish LC50	Daphnia EC50	Algae IC50
Tetramethylammonium hydroxide 000075-59-2	2	35.1 mg/l (as chloride)	0.21 mg/l (as chloride)	

Chemical Name & CAS Number	Weight Percent	Fish LC50	Daphnia EC50	Algae IC50
Water 007732-18-5	>95			

Environmental hazard information statements (using EU classification criteria):

Toxicity to fish:
Harmful (LC50 between 10 and 100 mg/L).
Toxicity to daphnids:
Very Toxic (EC50 less than 1 mg/L).
Environmental Fate:
Testing indicates that this material is resistant to biodegradation; however, it should be effectively removed under the conditions encountered in a typical water treatment plant.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal:
Consult local, state, and federal regulations. This product would be considered a hazardous waste under RCRA due to high pH unless neutralized prior to disposal.

SECTION 14. TRANSPORT INFORMATION

DOT/IATA Shipper Entry:
Caustic alkali liquid, n.o.s. (tetramethylammonium hydroxide), 8, UN1719, III.

Other Information:
Classification due to corrosivity of aluminum.

SECTION 15. REGULATORY INFORMATION

TSCA Inventory Status:
All components of this product are listed on the TSCA Inventory.
SARA Title III section 313:
This product is not subject to SARA Title III Section 313 reporting requirements under 40CFR372.

OSHA Physical Hazards:
None
OSHA Health Hazards:
Eye Hazard. Irritant. Skin Hazard.
SARA (311, 312) Hazard Class(es):
Acute health hazard.

SECTION 16. OTHER INFORMATION

HMIS Ratings:
Health = 2; Flammability = 0; Reactivity = 0; PPE=X
NFPA Ratings:
Health = 2; Flammability = 0; Reactivity = 0; Special Hazard = None.

Special Precautions:
The tetramethylammonium ion (TMA), as TMAH, in this developer is toxic at low levels to the water flea ceriodaphnia dubia (CD) used in the whole effluent toxicity (WET) biomonitoring test. Data from the supplier suggests that continuous input of 60-100 ppm TMA to a small POTW should not cause WET toxicity. It is expected that discharges to a sizable POTW will not affect the ability to pass the WET tests. However, discharges to a small POTW or direct discharges to surface waters should be carefully reviewed. Contact AZ Electronic Materials Product Safety for additional information (908-429-3593 or 908-429-3562).