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# MATERIAL SAFETY DATA SHEET

## COPPER ETCHANT 49-1

| CHEMICAL NAME & SYNONYMS | | DOT CLASS | SARA TITLE 313 |
|---|---|---|---|
| Copper Etchant 49-1 | REV 1 | NR | NO<br>TSCA-YES |

**HAZARDOUS INGREDIENTS**
CITRIC ACID ($C_6H_80_7.H_2O$)
(2.Hydroxyl-1,2,3 Propanetricarboxylic Acid)
HYDROGEN PEROXIDE ($H_2O_2$)

**EXPOSURE LIMITS**
500 MG/$M^3$ (respirable dust)
1.5 MG/$M^3$ (1 PPM)

| FORMULA | % | F.W. | CAS# |
|---|---|---|---|
| CITRIC ACID ($C_6H_80_7.H_2O$ (2.Hydroxyl-1,2,3 Propanetricarboxylic Acid) | <2% | 210.14 | 5949-29-1 |
| HYDROGEN PEROXIDE ($H_2O_2$) | < 1% | -- | 7722-84-1 |
| WATER ($H_20$) | balance | -- | 7732-18-5 |

**PHYSICAL DATA**
Soluble in water complete.

**APPEARANCE & ODOR**
Characteristic odor. Pleasant sour taste. Clear to slightly yellow solution.

**REACTIVITY & CONDITIONS TO AVOID**
Stable. No hazardous reactivity.

**FIRE HAZARDS**
Will be consumed in general fire. Avoid inhalation of smoke. NFPA # 0-1-0

**EXTINGUISHER**
Fight surrounding fire.

**HEALTH HAZARDS**
May cause skin and eye irritation. Toxicity for Citric Acid is very low. $LD_{50}$ (oral-rat) 6730 mg/kg. Eye rabbit 750 mg/24 hr. severe irritation. Poison intravenously $LD_{50}$ (ivn-mouse) 42 mg/kg. TLV/PEL not established. No evidence of carcinogenicity.

**SPECIAL PRECAUTIONS**
Wear goggles while handling.

**FIRST AID:**
Wash skin and eyes thoroughly with water after contact. If eye irritation persists, see a physician.

**SPILLS & LEAKS**
Sweep up. Wash area with water. Disposal to sanitary drain, incinerator or solid waste.

Prepared By: M.Hecht 3-28-00 Revised 9/0-5