

# Material Safety Data Sheet

## 1. PRODUCT AND COMPANY IDENTIFICATION

### CLEANER CONDITIONER(TM) 231

Revision date: 08/11/2008

**Supplier** Rohm and Haas Electronic Materials LLC  
455 Forest Street  
Marlborough, MA 01752 United States of America

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

#### Emergency telephone

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

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Component           | CAS-No.   | Concentration |
|---------------------|-----------|---------------|
| Water               | 7732-18-5 | 78.0 - 79.0 % |
| Triethanolamine     | 102-71-6  | 2.0 - 3.0 %   |
| Copper sulfate      | 7758-98-7 | 0.01 - 0.02 % |
| Nonionic surfactant |           | 1.0 - 10.0 %  |
| Monoethanolamine    | 141-43-5  | 10.0 - 11.0 % |

## 3. HAZARDS IDENTIFICATION

### Emergency Overview

#### Appearance

**Form** liquid  
**Colour** light blue  
**Odour** slight

#### Hazard Summary

#### **DANGER!**

Corrosive alkaline liquid and vapor.  
Causes severe burns.  
Onset of symptoms may be delayed.  
May cause allergic respiratory reaction and/or skin reaction.  
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.

**Eyes:** Will cause severe conjunctival irritation, corneal damage, and may result in loss of vision.

**Skin:** Material will cause chemical burns.

Prolonged or repeated contact may cause itching and soreness and possible sensitization. Absorption through burns or open wounds may have the following effects:

liver damage

kidney damage

**Ingestion:**Swallowing may have the following effects:

corrosion of mouth, throat and digestive tract

Abdominal pain

Aspiration hazard if swallowed - can enter lungs and cause damage.

Repeated doses may have the following effects:

liver damage

kidney damage

**Inhalation:**Inhalation may have the following effects:

severe irritation of nose, throat and respiratory tract

Higher concentrations may have the following effects:

severe irritation to nose, throat and respiratory tract and possibly lung damage

systemic effects similar to those resulting from ingestion

allergic sensitization

**Target Organs:**Eye

Respiratory System

Skin

kidney

Liver

**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. Immediate medical attention is required.

**Skin contact:**Immediately flush the skin with large quantities of water, preferably under a shower. If skin contact occurs, remove contaminated clothing and wash skin thoroughly. Continue washing for at least 20 minutes. Contaminated clothing should be washed or dry-cleaned before re-use. Immediate medical attention is required.

**Eye contact:**Immediately flush the eye with plenty of water for at least 20 minutes, holding the eye open. Immediate medical attention is required.

**Ingestion:**Do NOT induce vomiting. 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. Treat skin burns conventionally.

#### 5. FIRE-FIGHTING MEASURES

**Flash point** Nonflammable

**Lower explosion limit** not applicable

**Upper explosion limit** not applicable

**Suitable extinguishing media:**Use water spray, foam, dry chemical or carbon dioxide.

**Specific hazards during fire fighting:**This product may give rise to hazardous vapors in a fire.

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

**Further information:**May emit corrosive vapor or mist.

#### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**

Wear suitable protective clothing.

Wear respiratory protection.

Material can create slippery conditions.

### 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

Spills may be absorbed with appropriate absorbent material for alkaline materials.

Transfer into suitable containers for recovery or disposal.

## 7. HANDLING AND STORAGE

### Handling

Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Avoid breathing vapor. Keep container tightly closed.

**Further information on storage conditions:** Practice good personal hygiene to prevent accidental exposure.

### Storage

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure limit(s)

Exposure limits are listed below, if they exist.

| Component       | Regulation    | Type of listing | Value               |
|-----------------|---------------|-----------------|---------------------|
| Triethanolamine | Rohm and Haas | TWA             | 0.5 ppm             |
|                 | Rohm and Haas | STEL            | 1.5 ppm             |
|                 | ACGIH         | TWA             | 5 mg/m <sup>3</sup> |

| Component      | Regulation  | Type of listing    | Value               |
|----------------|-------------|--------------------|---------------------|
| Copper sulfate | NIOSH/GUIDE | REL Dust and mist. | 1 mg/m <sup>3</sup> |

| Component        | Regulation    | Type of listing      | Value                |       |
|------------------|---------------|----------------------|----------------------|-------|
| Monoethanolamine | Rohm and Haas | TWA                  | 3 ppm                |       |
|                  | Rohm and Haas | STEL                 | 6 ppm                |       |
|                  | ACGIH         | TWA                  | 3 ppm                |       |
|                  | ACGIH         | STEL                 | 6 ppm                |       |
|                  | NIOSH/GUIDE   | REL                  | 8 mg/m <sup>3</sup>  | 3 ppm |
|                  | NIOSH/GUIDE   | STEL                 | 15 mg/m <sup>3</sup> | 6 ppm |
|                  | OSHA_TRANS    | PEL                  | 6 mg/m <sup>3</sup>  | 3 ppm |
|                  | Z1A           | TWA                  | 8 mg/m <sup>3</sup>  | 3 ppm |
| Z1A              | STEL          | 15 mg/m <sup>3</sup> | 6 ppm                |       |

**Eye protection:** Chemical goggles and face shield.

**Hand protection:** Neoprene gloves. Other chemical resistant gloves may be recommended by your safety professional. Gauntlet sleeves.

**Skin and body protection:** rubber or neoprene apron

**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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

|                                    |                             |
|------------------------------------|-----------------------------|
| Form                               | liquid                      |
| Colour                             | light blue                  |
| Odour                              | slight                      |
| pH                                 | 10.0 - 12.5                 |
| Boiling point/boiling range        | 129 °C ( 264 °F )           |
| Flash point                        | Nonflammable                |
| Lower explosion limit              | not applicable              |
| Upper explosion limit              | not applicable              |
| Vapour pressure                    | not applicable              |
| Component: <u>Monoethanolamine</u> |                             |
| Vapour pressure                    | 0.4 mmHg at 20 °C ( 68 °F ) |

|                         |                    |
|-------------------------|--------------------|
| Relative vapour density | not applicable     |
| Water solubility        | completely soluble |
| Relative density        | 1.05               |
| Evaporation rate        | not applicable     |
| VOC's                   | <41 g/l            |

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               | Acids Oxidizing agents                     |
| Hazardous decomposition products | oxides of sulfur , nitrogen oxides (NOx) , |
| polymerization                   | Will not occur.                            |

## 11. TOXICOLOGICAL INFORMATION

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

|                                       |                         |
|---------------------------------------|-------------------------|
| Component: <u>Triethanolamine</u>     |                         |
| Acute oral toxicity                   | LD50 rat 8,680 mg/kg    |
| Component: <u>Copper sulfate</u>      |                         |
| Acute oral toxicity                   | LD50 rat 300 mg/kg      |
| Component: <u>Nonionic surfactant</u> |                         |
| Acute oral toxicity                   | LD50 rat 1,890 mg/kg    |
| Component: <u>Monoethanolamine</u>    |                         |
| Acute oral toxicity                   | LD50 rat 1,970 mg/kg    |
| Component: <u>Triethanolamine</u>     |                         |
| Acute dermal toxicity                 | LD50 rabbit 2,000 mg/kg |

Component:**Nonionic surfactant**

**Acute dermal toxicity** LD50 rabbit 4,400 mg/kg

Component:**Monoethanolamine**

**Acute dermal toxicity** LD50 rabbit 1,000 mg/kg

Component:**Nonionic surfactant**

**Skin irritation** rabbit slight irritation

Component:**Nonionic surfactant**

**Eye irritation** rabbit Severe eye irritation

Component:**Triethanolamine**

**Carcinogenicity:** Carcinogenicity classification not possible from current data.

Component:**Triethanolamine**

**Mutagenicity**

No mutagenic activity was observed in bacterial cells.

## 12. ECOLOGICAL INFORMATION

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

**Copper sulfate**

**Ecotoxicity effects**

**Toxicity to fish** LC50 Rainbow trout (*Salmo gairdneri*) 96 h  
0.75 - 0.84 mg/l

**Nonionic surfactant**

**Elimination information (persistence and degradability)**

**Biodegradability** Not readily biodegraded.

**Ecotoxicity effects**

**Toxicity to fish** EC50 Bluegill sunfish (*Lepomis macrochirus*) 96 h  
7.9 mg/l

**Toxicity to algae** EC50 *Selenastrum capricornutum* (green algae) 96 h  
12 - 50 mg/l

**Toxicity to aquatic invertebrates** LC50 Mysid shrimp (*Mysidopsis bahia*)  
0.25 mg/l

**Toxicity to aquatic invertebrates** LC50 *Daphnia magna* (Water flea) 48 h  
14 mg/l

**Toxicity to aquatic invertebrates** LC50 Mysid shrimp (*Mysidopsis bahia*) 48 h  
0.9 - 2 mg/l

**Monoethanolamine**

**Ecotoxicity effects**

**Toxicity to fish** LC50 *Oncorhynchus mykiss* (rainbow trout) 96 h  
150 mg/l

**Toxicity to aquatic invertebrates** LC50 *Daphnia magna* 96 h  
140 mg/l

## 13. DISPOSAL CONSIDERATIONS

**Precautions**

Dispose of contents/container in accordance with local regulation.

CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied.

**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

|                             |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| <b>Proper shipping name</b> | Amines, liquid, corrosive,<br>n.o.s. ( Monoethanolamine , Triethanolamine ) |
| <b>UN-Number</b>            | UN 2735                                                                     |
| <b>Class</b>                | 8                                                                           |
| <b>Packing group</b>        | III                                                                         |

### IMO/IMDG

|                             |                                                                             |
|-----------------------------|-----------------------------------------------------------------------------|
| <b>Proper shipping name</b> | Amines, liquid, corrosive,<br>n.o.s. ( Monoethanolamine , Triethanolamine ) |
| <b>UN-Number</b>            | UN 2735                                                                     |
| <b>Class</b>                | 8                                                                           |
| <b>Packing group</b>        | III                                                                         |

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

## 15. REGULATORY INFORMATION

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

Delayed (chronic) 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.

**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 contains a component or components known to the state of California to cause cancer and birth defects or other reproductive harm:

|             |                |           |
|-------------|----------------|-----------|
| Components: | Acetaldehyde   | 75-07-0   |
|             | Dioxane        | 123-91-1  |
|             | Ethylene Oxide | 75-21-8   |
|             | Dichloroethane | 107-06-2  |
|             | Nickel         | 7440-02-0 |

## 16. OTHER INFORMATION

### Hazard Rating

|             | Health | Fire | Reactivity |
|-------------|--------|------|------------|
| <b>NFPA</b> | 3      | 0    | 1          |

## 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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