SAFETY DATA SHEET

1. COMPANY AND PRODUCT IDENTIFICATION

Product Identifier
Product Name: QUAKERCOOL® 2810
Product code: 003482-08 06

Other means of identification
Synonyms No information available.

Application
Recommended Use Metal Removal Fluid
Uses advised against For industrial use only

Supplier/Manufacturer:
Supplier: Quaker Chemical Corporation
Quaker Park One
901 Hector Street
Conshohocken, PA 19428
610-832-4000
E-mail: she@quakerchem.com

2. HAZARDS IDENTIFICATION

Classification
OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>2</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>1</td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>3</td>
</tr>
</tbody>
</table>

Label Elements

WARNING
Hazard Statements
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
Harmful to aquatic life with long lasting effects
Precautionary Statements - Prevention
- Wash face, hands and any exposed skin thoroughly after handling
- Wear protective gloves/protective clothing/eye protection/face protection
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Contaminated work clothing should not be allowed out of the workplace
- Avoid release to the environment

Precautionary Statements - Response
Specific treatment (see First Aid on this label)
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention
- IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation or rash occurs: Get medical advice/attention

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
None known

Other Information
- Harmful to aquatic life.

Unknown acute toxicity
- 0.39% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine salt</td>
<td>Proprietary</td>
<td>5 - 10%</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>141-43-5</td>
<td>1 - 5%</td>
</tr>
<tr>
<td>Corrosion Inhibitor</td>
<td>Proprietary</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

The exact percentage (concentration) of composition has been withheld as a trade secret. If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

General advice:
- Show this safety data sheet to the doctor in attendance. Remove contaminated clothing and shoes. Wash contaminated clothing before re-use. Wash off with soap and water. If symptoms persist, call a physician.
Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.

Skin contact: Rinse immediately with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before re-use. If a person feels unwell or symptoms of skin irritation appear, consult a physician.

Ingestion: If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Inhalation: Move to fresh air in case of accidental inhalation of vapors. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

Note to physician: Treat symptomatically.

Medical condition aggravated by exposure: Dermatitis.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use dry chemical, CO2, water spray or `alcohol` foam.

Specific hazards: Do not allow material to contaminate ground water system.

Special protective equipment for fire-fighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific methods: Water mist may be used to cool closed containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Ensure adequate ventilation. Do not breathe vapour/ dust. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Handling

Technical measures/precautions: Provide sufficient air exchange and/or exhaust in work rooms.

Safe handling advice: In case of insufficient ventilation, wear suitable respiratory equipment. Do not breathe vapors or spray mist. Wear personal protective equipment. Avoid contact with skin and eyes. Keep container tightly closed. Wash thoroughly after handling.
Storage

Technical measures/storage conditions: Store at room temperature in the original container IF FROZEN, THAW AND MIX THOROUGHLY BEFORE USE.

Incompatible products: strong acids and oxidizing agents

Safe storage temperature: 40 - 100 °F

Shelf life: 12 months

8. EXPOSURE CONTROLS/PERSOANL PROTECTION

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH Exposure Limits</th>
<th>OSHA TWA (final)</th>
<th>NIOSH - Pocket Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethanolamine</td>
<td>5 mg/m³ (TWA)</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>3 ppm (TWA)</td>
<td>3ppm</td>
<td>3ppm</td>
</tr>
<tr>
<td></td>
<td>6 ppm (STEL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct blue 199; C.I. 74190</td>
<td>1 mg/m³ (TWA)</td>
<td>None</td>
<td>1 mg/m³ (TWA)</td>
</tr>
</tbody>
</table>

Engineering measures: Ensure adequate ventilation.

Personal Protective Equipment:

General: Eye Wash and Safety Shower

Respiratory protection: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, a NIOSH-certified respirator with organic vapor/P100 filter should be worn.

Eye protection: Safety glasses with side-shields

Hand protection: Neoprene gloves

Skin and body protection: Long sleeved clothing

Hygiene measures: Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Appearance: Clear Blue

Odor: Characteristic

Odor Threshold: No information available.
pH concentrate: 9.75
pH Dilution No information available
Melting/freezing point No information available
Boiling Point/Range > 100 °C / 212 °F
Flash Point None to boiling.
Method No information available
Evaporation rate No information available
Flammability Limits in Air
   upper flammability limit No information available.
   lower flammability limit No information available.
VOC Content No information available
VOC Content Product (lb/gal) 1.89
Vapor pressure No information available.
Vapor density No information available.
Specific Gravity (g/cc, 15 C) 1.063
Bulk Density (lb/gal, 15 C) 8.87
Water Solubility Completely soluble
Solubility in other solvents No information available.
Partition coefficient: n-octanol/water No information available
Autoignition temperature No information available
Decomposition Temperature No information available
Kinematic viscosity No information available
Dynamic viscosity No information available
Molecular Weight No information available

### 10. STABILITY AND REACTIVITY

**Stability:** Stable under recommended storage conditions.

**Conditions to avoid:** None known.

**Materials to avoid:** Strong acids and oxidising agents.

**Hazardous decomposition products:** None under normal use.

**Hazardous Polymerization:** Not applicable.
11. TOXICOLOGICAL INFORMATION

No toxicological information is available on the product. Data obtained on components are summarized below.

Information on likely routes of exposure

**Inhalation**
May cause irritation of respiratory tract.

**Eye Contact**
Irritating to eyes.

**Skin Contact**
Irritating to skin. May cause sensitization by skin contact.

**Ingestion**
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

<table>
<thead>
<tr>
<th>Components</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine salt</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>1720 mg/kg (Rat)</td>
<td>1 mL/kg (Rabbit)</td>
<td>1025 mg/kg (Rabbit)</td>
</tr>
<tr>
<td>Corrosion Inhibitor</td>
<td>= 750 mg/kg (Rat)</td>
<td>Oral LD50 Rat 750 mg/kg (Source: IUCLID)</td>
<td>&gt;1250 mg/kg (Rabbit) Dermal LD50 Rabbit &gt;1250 mg/kg (Source: IUCLID)</td>
</tr>
</tbody>
</table>

Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Carcinogenicity**
The table below indicates whether each agency has listed any ingredient as a carcinogen

<table>
<thead>
<tr>
<th>Components</th>
<th>IARC Carcinogens</th>
<th>NTP</th>
<th>OSHA - Select Carcinogens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine salt</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Corrosion Inhibitor</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Sensitization**
Product contains a component that is classified as a skin sensitizer. No studies have been conducted on the product itself.

**Mutagenic effects:**
No information available.

**Reproductive Toxicity**
No information available.

**Developmental Toxicity**
No information available.

**Teratogenic**
No information available.

**Specific target organ systemic toxicity (single exposure)**
No information available.

**Specific target organ systemic toxicity (repeated exposure)**
No information available.

**Aspiration hazard**
No information available.
Additional information on toxicological effects

WARNING! Do not add nitrites to this metalworking fluid under penalty of federal law. Addition of nitrites leads to formation of a substance known to cause cancer. This product is designed to be used without nitrites.

This product contains triethanolamine. Liver and kidney damage has been demonstrated in animals from chronic exposure to triethanolamine. These effects were generally seen in feeding or drinking water studies; however, there was at least one positive finding in studies with dermal absorption. The relevance of animal test data to humans is unknown at this time.

This product contains monoethanolamine (MEA). Inhalation studies in animals have demonstrated the potential for liver and kidney effects. Repeated inhalation of highly irritating concentrations of MEA have been reported to result in possible effects upon the reproductive and nervous systems of animals. No signs or symptoms of chronic exposure to MEA have been reported in humans. The diluted concentration of MEA in this product is expected to mitigate the potential for chronic effects.

### 12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Components</th>
<th>Ecotoxicity - Fish Species Data:</th>
<th>Ecotoxicity - Freshwater Algae Data:</th>
<th>Ecotoxicity - Water Flea Data:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine salt</td>
<td>No data</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>LC50 (Pimephales promelas - 96h) = 227 mg/L LC50 (Brachydanio rerio - 96h) = 3684 mg/L LC50 (Lepomis macrochirus - 96h) = 300-1000 mg/L LC50 (Oncorhynchus mykiss - 96h) = 114-196 mg/L</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>=65mg/L 15</td>
<td></td>
<td>EC50 (Daphnia magna - 48h) = 65 mg/L</td>
</tr>
<tr>
<td>Corrosion Inhibitor</td>
<td>0.3 - 1.1 mg/L LC50 = 3.8 mg/L LC50</td>
<td>1.9 - 5.1 mg/L = 0.3 mg/L EC50</td>
<td>No data</td>
</tr>
</tbody>
</table>

5.69% of the mixture consists of components(s) of unknown hazards to the aquatic environment

**Persistence and Degradability**  
No information available.

**Bioaccumulation**  
No information available.

<table>
<thead>
<tr>
<th>Components</th>
<th>Octanol/water partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine salt</td>
<td>-</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>-</td>
</tr>
<tr>
<td>Corrosion Inhibitor</td>
<td>-</td>
</tr>
</tbody>
</table>

**Mobility:**  
No data available

**Ozone:**  
No data available

### 13. DISPOSAL CONSIDERATIONS
Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

Contaminated packaging: Do not re-use empty containers

Methods for cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up and shovel into suitable containers for disposal.

14. TRANSPORT INFORMATION

U. S. DEPARTMENT OF TRANSPORTATION:

Proper shipping name: Not Regulated

TDG (CANADA):

Proper shipping name: Not Regulated

IMDG/IMO:

Proper shipping name: Not Regulated

IATA/ICAO:

Proper shipping name: Not Regulated

15. REGULATORY INFORMATION

Federal Regulations

OSHA Hazard Communication Standard: This product is considered to be hazardous under the OSHA Hazard Communication Standard.

CERCLA/SARA Information:

SARA (311, 312) hazard class: This product possesses the following SARA Hazard Categories:

Immediate Health (Acute): Yes
Delayed Health (Chronic): No
Flammability: No
Pressure: No
Reactivity: No

<table>
<thead>
<tr>
<th>Components</th>
<th>Hazardous Substances and RQs</th>
<th>Extremely Hazardous Substances and TPQs</th>
<th>SARA 313 Emission Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine salt</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Corrosion Inhibitor</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Clean Air and Clean Water Acts:

<table>
<thead>
<tr>
<th>Components</th>
<th>Hazardous Air Pollutants</th>
<th>CWA - Hazardous Substances</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
</tr>
</thead>
</table>

003482-08 06 - QUAKERCOOL® 2810
Revision Date: 05/26/2015
Components | California Proposition 65 | PARTK | MI Critical Materials | NJRTK | MARTK
---|---|---|---|---|---
Amine salt | Not Listed | Not Listed | Not Listed | Not Listed | Not Listed
Monoethanolamine | Not Listed | Present | Not Listed | 0835 | Present
Corrosion Inhibitor | Not Listed | Not Listed | Not Listed | Not Listed | Not Listed

California Proposition 65 Status: May contain trace amounts of listed chemicals: diethanolamine

RCRA Status: Not regulated

CANADIAN REGULATIONS:

Canada - WHMIS Classification Information: This product has been classified according to the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

Canadian Product Classification: Class D2B

Product Classification Graphic(s):

Component Classification Data:

<table>
<thead>
<tr>
<th>Components</th>
<th>WHMIS hazard class</th>
<th>CEPA Schedule I</th>
<th>Challenge Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine salt</td>
<td>None</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Monoethanolamine</td>
<td>B3 E</td>
<td>Not Listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Corrosion Inhibitor</td>
<td>None</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

INVENTORY STATUS:

United States TSCA - Sect. 8(b) Inventory: This product complies with TSCA

Canada DSL/NDSL Inventory List: All components are either on the DSL or the NDSL

16. OTHER INFORMATION

Sources of key data used to compile the data sheet: Material safety data sheets of the ingredients.

Prepared by: Quaker Chemical Corporation - Safety, Health and Environmental Affairs Group - US

Revision Date: 05/26/2015
Reason for revision: New Format.

Personal protection recommendations should be reviewed by purchasers. Workplace conditions are important factors in specifying adequate protection.
Disclaimer
This product's safety information is provided to assist our customers in assessing compliance with safety/health/environmental regulations. The information contained herein is based on data available to us and is believed to be accurate. However, no warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of this data, the results to be obtained from the use thereof, or the hazards connected with the use of the product. Since the use of this product is within the exclusive control of the user, it is the user's obligation to determine the conditions for safe use of the product. Such conditions should comply with all regulations concerning the product. The company referenced in this Safety Data Sheet assumes no liability for any injury or damage, direct or consequential, resulting from the use of this product unless such injury or damage is attributable to the gross negligence of such company.

End of Safety Data Sheet