1 Product and Company Identification

Product name: CC-300.40S
Other product names: None
Product use: Positive Photoresist Developer
Manufacturer: OM GROUP – ULTRA PURE CHEMICALS
            CYANTEK CORPORATION
            3055 Osgood Court
            Fremont, CA 94538
            (510) 651-3341

24 Hour Emergency Telephone Number:
CHEMTREC: (800) 424-9300 (North America): (703) 527-3887 (Int’l.)

2 Hazards Identification

GHS classification:

Acute toxicity (oral): Category 4
Acute toxicity (dermal): Category 3
Skin corrosion/irritation: Category 1
Serious eye damage/eye irritation: Category 1

Signal word: Danger

Hazard statements: Toxic in contact with skin. Harmful if swallowed or inhaled. Causes severe skin burns and eye damage. Harmful to aquatic life.

Precautionary statements:
Absorb spillage to prevent material damage. Store in plastic containers.
Wash thoroughly after handling. Do not eat, drink or smoke when using this product.
Wear gloves/protective clothing/face and eye protection.
If swallowed: Call a POISON CENTER or doctor/physician. Do not induce vomiting.
If on skin: Remove all contaminated clothing. Wash with plenty of water. Dispose of contaminated clothing.
Avoid breathing vapors. Use only in a well-ventilated area.
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician.
Dispose of contents/container in accordance with local/national regulations.
2 Hazards Identification Con’t.

Pictograms:

![Pictogram 1]

![Pictogram 2]

3 Composition/Information on Ingredients

- **Chemical formula:** (CH3)4NOH + Surfactant + H2O
- **Hazardous components:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percent by wt.</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetramethylammonium Hydroxide</td>
<td>2%</td>
<td>75-59-2</td>
</tr>
<tr>
<td>Surfactant</td>
<td>&lt;1%</td>
<td>N/A</td>
</tr>
<tr>
<td>Water</td>
<td>98%</td>
<td>7732-18-5</td>
</tr>
</tbody>
</table>

4 First Aid Measures

**Inhalation:** Supply fresh air; consult doctor in case of complaint.
**Skin contact:** Flush affected areas with plenty of water, remove contaminated clothing, get medical attention if irritation persists.
**Eye contact:** Rinse opened eyes for several minutes under running water. Immediately consult a doctor.
**Ingestion:** Give large amounts of water. Do NOT induce vomiting or aspiration into the lungs may occur and may cause permanent injury. Do NOT give water to an unconscious patient. Consult a doctor immediately.

5 Fire Fighting Measures

**Suitable extinguishing agents:** CO2, or water spray. Fight larger fires with water spray. Use water spray to cool exposed containers.
**Specific hazards:** Avoid contact with acids.
**Protective equipment:** Wear goggles, rubber gloves and boots, self contained breathing apparatus, and caustic protective clothing.
6 Accidental Release Measures

**Personal precautions:** Wear goggles, rubber boots and gloves, and caustic protective clothing.

**Environmental precautions:** Do not allow substance to enter sewage system, surface or ground water.

**Methods for cleaning up:** Contain the spill by diking/absorbing with liquid-binding material (sand, diatomite, caustic binders, universal binders). Ensure adequate ventilation. Dispose of material in accordance with local, regional, or national regulations.

7 Handling and Storage

Ensure good ventilation/exhaustion at the workplace.
Store between 50 and 77 Degrees F.
Keep containers upright and tightly sealed.
Store away from strong acids.

8 Exposure Controls and Personal Protection

**Engineering controls and Ventilation:** Use with adequate ventilation. Keep air below product exposure limits.

**General protective and hygienic measures:** Keep away from foodstuffs and beverages. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

**Respiratory equipment:** In case of brief exposure or low pollution use caustic mist respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

**Protection of hands:** Caustic resistant gloves.

**Eye protection:** Tightly sealed goggles or face shield.

**Body protection:** Caustic resistant protective work clothing.

**Exposure guidelines and limits:**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetramethylammonium Hydroxide</td>
<td>None listed</td>
<td>None listed</td>
<td>None listed</td>
</tr>
<tr>
<td>Surfactant</td>
<td>None listed</td>
<td>None listed</td>
<td>None listed</td>
</tr>
</tbody>
</table>

TLV: Threshold limit value
PEL: Permissible exposure limit
TWA: Time weighted average (8 hours) IDLH: Immediately dangerous to life and health
## 9 Physical and Chemical Properties

- **Physical state:** Liquid
- **Color:** Colorless
- **Odor:** Faint amine odor
- **Odor threshold:** Unknown
- **pH:** >13
- **Melting point/freezing point:** Not applicable
- **Initial boiling point and boiling range:** Unknown
- **Flash point:** Not applicable
- **Evaporation rate:** Unknown
- **Lower explosion limits (LEL):** Not applicable
- **Upper explosion limits (UEL):** Not applicable
- **Vapor pressure (mm Hg):** Unknown
- **Vapor density (air = 1):** Unknown
- **Relative density at 20 °C (water = 1):** 1.0 g/cm³
- **Solubility in water:** 100%
- **Partition coefficient (n-Octanol/water):** Unknown
- **Auto-ignition temperature:** Not applicable
- **Decomposition temperature:** Not applicable
- **Viscosity:** Unknown

## 10 Stability and Reactivity

- **Dangerous reactions:** Reacts with acids and water reactive materials.
- **Danger of explosion:** No danger.
- **Thermal decomposition:** None known.
- **Dangerous products of decomposition:** Tetramethylammonium Carbonate, Methanol, Trimethylamine, Ammonia, Nitrous Oxides.
- **Hazardous polymerization:** Does not occur

## 11 Toxicological Information

**Toxicological data:**
- Tetramethylammonium Hydroxide: LD₅₀ (oral - rat) 175 mg/kg,
  LD₅₀ (scu - mus) 19 mg/kg, LD₅₀ (ivn - rabbit) 1 mg/kg
- LD₅₀ (dermal - rat) 112 mg/kg
- Surfactant: LD₅₀ (oral - rat) 720 mg/kg, LD₅₀ (skin - rabbit) 3100 mg/kg, LC₅₀ (inh - rabbit) >1060 ppm/6hr

**Potential side effects:**
- **Eyes:** Direct contact with eyes may cause severe burns.
- **Skin:** Direct contact with the skin may cause irritation.
- **Ingestion:** Swallowing may cause severe burns to the esophagus and digestive tract.
- **Inhalation:** Respiratory tract irritation.
- **Acute health hazards:** Repeated or prolonged contact may cause skin and respiratory system irritation.
11 Toxicological Information (con’t.)

**Chronic health hazards:** Chronic inhalation of mist may produce respiratory system irritation.

**Medical conditions generally aggravated by exposure:** Respiratory and skin diseases may predispose one to acute and chronic effects.

**Sensitization:** No sensitizing effects known.

12 Ecological Information

**Eco-toxicity/bioaccumulation data:**

Tetramethylammonium Hydroxide (TMAH): 96 hour LC50 in fish is greater than 100 mg./l. No chronic toxicity data on fish is available. TMAH is considered to be readily biodegradable. TMAH is mainly distributed into water into the forms of tetramethylammonium and hydroxyl ions. Bioaccumulation factor was calculated to be 3.16 indicating accumulation of the substance in aquatic organisms is unlikely.

**Surfactant:** None available

**General notes:** Do not allow product to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground.

13 Disposal Considerations

Dispose of product (including containers) in accordance with applicable regulations.

14 Transportation Information

**Land (CFR 49), Maritime (IMDG), Air (ICAO)**

**Class:** Not regulated

**UN Number:** N/A

**Proper Shipping Name:** N/A

**Packing Group:** N/A

**Marine pollutant:** No
15 Regulatory Information

CERCLA Hazardous Substances (with reportable quantity): None
Extremely Hazardous Substances (with threshold quantity): None
Toxic Chemicals (Section 313): None
TSCA Inventory: All ingredients on TSCA inventory
Proposition 65 List: None
Clean Water Act Hazardous Substance List (with reportable quantity): None
Clean Air Act Synthetic Organic Chemical (CAA SOCMI): None
Clean Air Act Accidental Release Prevention Substance, section 112 r (with threshold quantity): None
PSM Highly Hazardous Chemical List (with threshold quantity): None

16 Other Information

MSDS document number: MSDS 17-269
Current date and revision: 9/21/09, revision F
Supersedes date and revision: 8/24/09, revision E
MSDS author: Gregg Harvey

Note: This Material Safety Data Sheet was created using the Globally Harmonized System (GHS) format for Safety Data Sheets (SDS).

Disclaimer: This information is based upon information and sources available at the time of preparation. This shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. It is the obligation of the user to determine product suitability and comply with the requirements of all applicable laws regarding use and disposal of this product.