Safety Data Sheet

Material Name: Quilon H - Chromium Complex

*** Section 1 - Identification of the Substance/Preparation and the Company/Undertaking ***

Manufacturer Information
Zaclon LLC
2981 Independence Road
Cleveland, OH 44115
Phone: 216-271-1569 or 800-356-7327
Fax: 216-271-1792
Emergency # 800-424-9300 CHEMTREC

*** Section 2 - Composition / Information on Ingredients ***

<table>
<thead>
<tr>
<th>EC #</th>
<th>Component</th>
<th>Percent</th>
<th>Symbols</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-661-7</td>
<td>Isopropyl alcohol 67-63-0</td>
<td>30-61</td>
<td>Xi</td>
<td>R:11-36-67</td>
</tr>
<tr>
<td>200-662-2</td>
<td>Acetone 67-64-1</td>
<td>10-16</td>
<td>Xi</td>
<td>R:11-36-66-67</td>
</tr>
<tr>
<td>231-791-2</td>
<td>Water 7732-18-5</td>
<td>3.7-13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>239-286-9</td>
<td>Chromium, tetrachloro-µ-hydroxy[µ-(octadecanoato-O:O')]di-15242-96-3</td>
<td>2.85-4.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>239-730-1</td>
<td>Chromium, tetrachloro-µ-hydroxy[µ-(tetradecanoato-O:O')]di-15659-56-0</td>
<td>2.85-4.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>201-161-1</td>
<td>Chloroacetone 78-95-5</td>
<td>0.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** Section 3 - Hazards Identification ***

Human and Environmental Hazards
Causes eye burns. May cause irritation of the skin, nose and throat. Ingestion of this material may cause gastrointestinal tract irritation.

*** Section 4 - First Aid Measures ***

First Aid: Eyes
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

First Aid: Skin
Flush skin with water after contact. Wash contaminated clothing before reuse.

First Aid: Ingestion
If swallowed, do not induce vomiting. Give two glasses of water or activated charcoal slurry. Call a physician. Never give anything by mouth to an unconscious person.

First Aid: Inhalation
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

First Aid: Notes to Physician
To prepare activated charcoal slurry, suspend 50 gm of activated charcoal in 400 mL of water in a bottle and shake well. Give 5 mL/kg of body weight, or 350 mL for an average adult.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards
Product is a flammable liquid.

Hazardous Combustion Products
Decomposes with heat; solvent vapors and gaseous hydrogen chloride will be emitted.

Extinguishing Media
Water, Dry Chemical, Alcohol Foam, CO2.

Fire Fighting Equipment/Instructions
Firefighters should wear full protective gear. Evacuate personnel to a safe area. Cool tank/container with water spray.
**Section 6 - Accidental Release Measures**

**Containment Procedures**
Remove source of heat, sparks, flame, impact, friction or electricity. Stop the flow of material, if this is without risk.

**Clean-Up Procedures**
Wear protective clothing. Dike spill; soak up with sand, earth, or other non-combustible absorbent material and dispose of in covered metal containers. Prevent liquid from entering sewers, waterways, or low area. After bulk removal, flush spill area with plenty of water.

**Evacuation Procedures**
Isolate area. Keep unnecessary personnel away.

**Special Procedures**
None

**Section 7 - Handling and Storage**

**Handling Procedures**
Do not get in eyes. Avoid breathing vapors or mist. Wash thoroughly after handling. Avoid contact with skin and clothing.

**Storage Procedures**
Keep away from heat, sparks, and flame. Keep containers tightly closed and in an upright position. Do not store or mix with oxidizing agents. Best temperature for stability is below 32 deg C (90 deg F) and above freezing point.

**Specific Use**
Paper treatment

**Section 8 - Exposure Controls / Personal Protection**

**Substance Exposure Limits**

**Isopropyl alcohol (200-661-7)**
- **ACGIH:**
  - 400 ppm STEL
  - 200 ppm TWA
- **Austria:**
  - 800 ppm STEL (4 X 15 min); 2000 mg/m3 STEL (4 X 15 min); 800 ppm STEL (STEL for large casting, 4 X 30 min); 2000 mg/m3 STEL (STEL for large casting, 4 X 30 min)
  - 200 ppm MAK; 500 mg/m3 MAK (short time value for large casting)
- **Belgium:**
  - 400 ppm STEL; 1000 mg/m3 STEL
  - 200 ppm TWA; 500 mg/m3 TWA
- **Denmark:**
  - 200 ppm TWA; 490 mg/m3 TWA
- **Finland:**
  - 250 ppm STEL; 620 mg/m3 STEL
  - 200 ppm TWA; 500 mg/m3 TWA
- **France:**
  - 400 ppm VLCT; 980 mg/m3 VLCT
- **Germany:**
  - 200 ppm TWA (exposure factor 2); 500 mg/m3 TWA (exposure factor 2)
  - 50 mg/L Medium: whole blood Time: end of shift Parameter: Acetone; 50 mg/L Medium: urine Time: end of shift Parameter: Acetone
  - 200 ppm MAK; 500 mg/m3 MAK
  - 400 ppm Peak; 1000 mg/m3 Peak
- **Greece:**
  - 500 ppm STEL; 1225 mg/m3 STEL
  - 400 ppm TWA; 980 mg/m3 TWA
- **Ireland:**
  - 400 ppm STEL
  - 200 ppm TWA
- **Portugal:**
  - Potential for cutaneous absorption
- **Spain:**
  - 500 ppm VLA-EC; 1250 mg/m3 VLA-EC
  - 400 ppm VLA-ED; 998 mg/m3 VLA-ED
- **Sweden:**
  - 150 ppm LLV; 350 mg/m3 LLV
  - 250 ppm STV; 600 mg/m3 STV
Acetone (200-662-2)

ACGIH: 750 ppm STEL
500 ppm TWA
Austria: 2000 ppm STEL (4 X 15 min); 4800 mg/m³ STEL (4 X 15 min)
500 ppm MAK; 1200 mg/m³ MAK
Belgium: 1000 ppm STEL; 2420 mg/m³ STEL
500 ppm TWA; 1210 mg/m³ TWA
Denmark: 250 ppm TWA; 600 mg/m³ TWA
Finland: 630 ppm STEL; 1500 mg/m³ STEL
500 ppm TWA; 1200 mg/m³ TWA
France: 1000 ppm VLCT (restrictive limit); 2420 mg/m³ VLCT (restrictive limit)
500 ppm VME (restrictive limit); 1210 mg/m³ VME (restrictive limit)
Germany: 500 ppm TWA (exposure factor 2); 1200 mg/m³ TWA (exposure factor 2)
80 mg/L Medium: urine Time: end of shift Parameter: Acetone
500 ppm MAK; 1200 mg/m³ MAK
1000 ppm Peak; 2400 mg/m³ Peak
Greece: 3560 mg/m³ STEL
1780 mg/m³ TWA
Ireland: 1 ppm STEL; 3.8 mg/m³ STEL
1 ppm TWA; 3.8 mg/m³ TWA
Spain: 1 ppm VLA-EC; 3.8 mg/m³ VLA-EC

Chloroacetone (201-161-1)

ACGIH: 1 ppm Ceiling
Skin - potential significant contribution to overall exposure by the cutaneous route
Austria: 1 ppm MAK; 3.8 mg/m³ MAK
Skin notation
Belgium: Skin
Denmark: 1 ppm Ceiling; 3.8 mg/m³ Ceiling
Potential for cutaneous absorption
Finland: 1 ppm STEL; 3.8 mg/m³ STEL
1 ppm Ceiling; 3.8 mg/m³ Ceiling
Potential for cutaneous absorption
Ireland: 1 ppm STEL; 3.8 mg/m³ STEL
1 ppm TWA; 3.8 mg/m³ TWA
Potential for cutaneous absorption
Spain: 1 ppm VLA-EC; 3.8 mg/m³ VLA-EC

Engineering Controls
Good general ventilation should be provided to keep component concentrations below the recommended exposure limits and avoid flammable mixtures with air. Use explosion-proof motors, electrical fittings, and nonsparking tools and equipment. Containers should be grounded.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face
Wear coverall chemical splash goggles. Additionally, wear a face shield where the possibility exists for face contact due to splashing or spraying of material.

Personal Protective Equipment: Skin
Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, jacket, hood and boots.

Personal Protective Equipment: Respiratory
Wear NIOSH approved respiratory protection as appropriate.

Personal Protective Equipment: General
Eye wash fountain and emergency showers are recommended.
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### **Section 9 - Physical & Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Blue green</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>ND</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>82 °C (180 °F) @ 760 mm Hg</td>
</tr>
<tr>
<td>Solubility (H2O)</td>
<td>Soluble</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Octanol/H2O Coeff.</td>
<td>ND</td>
</tr>
<tr>
<td>Flash Point Method</td>
<td>TOC</td>
</tr>
<tr>
<td>Lower Flammability Limit (LFL)</td>
<td>2</td>
</tr>
<tr>
<td>Auto Ignition</td>
<td>&gt;399 °C (&gt;750 °F)</td>
</tr>
<tr>
<td>Odor</td>
<td>Alcohol</td>
</tr>
<tr>
<td>pH</td>
<td>2.6-2.7</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>-2</td>
</tr>
<tr>
<td>Melting Point</td>
<td>ND</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.04</td>
</tr>
<tr>
<td>VOC</td>
<td>ND</td>
</tr>
<tr>
<td>Flash Point</td>
<td>0 to 4 °C (32-39 °F)</td>
</tr>
<tr>
<td>Upper Flammability Limit (UFL)</td>
<td>12</td>
</tr>
<tr>
<td>Burning Rate</td>
<td>ND</td>
</tr>
</tbody>
</table>

### **Section 10 - Chemical Stability & Reactivity Information**

**Chemical Stability**

This is a stable material.

**Chemical Stability: Conditions to Avoid**

Keep away from sparks, heat, and other ignition sources.

**Incompatibility**

Oxidizing agents.

**Hazardous Decomposition**

Decomposes with heat; solvent vapors and gaseous hydrogen chloride will be emitted.

**Hazardous Polymerisation**

Will occur with water.

### **Section 11 - Toxicological Information**

**Potential Health Effects**

**A: General Product Information**

Skin contact may cause skin irritation with discomfort or rash. There are rare inconclusive reports of human sensitization from skin contact with Isopropyl Alcohol. Repeated and/or prolonged exposure may cause: Defatting of the skin with itching, redness or rash. Fabrics treated with Quilon are not skin sensitizers in humans.

Eye contact may cause eye corrosion with corneal or conjunctival ulceration, pain or blurred vision. Exposure to the product mists or vapors may cause irritation of the skin and eyes.

Inhalation may cause irritation of the respiratory tract with coughing and discomfort; or temporary central nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination, drowsiness, and loss of consciousness.

Ingestion may cause irritation of the digestive tract with stomach pain, heartburn, nausea, vomiting or diarrhea; or temporary central nervous system depression; however there may be no symptoms at all.

Inhalation, ingestion, or skin contact to isopropyl alcohol may cause nonspecific effects such as headache, nausea and weakness, flushing of the face, or low blood pressure.

Isopropyl chloride has been associated with abnormal liver and kidney function and temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation.

**B: Substance Analysis - LD50/LC50**

**Isopropyl alcohol (200-661-7)**

Inhalation LC50 Rat 72.6 mg/L 4 h; Oral LD50 Rat 4396 mg/kg; Dermal LD50 Rat 12800 mg/kg; Dermal LD50 Rabbit 12870 mg/kg
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Material Name: Quilon H - Chromium Complex

**Acetone (200-662-2)**
Oral LD50 Rat 5800 mg/kg

**Water (231-791-2)**
Oral LD50 Rat >90 mL/kg

**Chromium, tetrachloro-μ-hydroxy[μ-(octadecanoato-O:O')]di- (239-286-9)**
Oral LD50 Mouse 1280 mg/kg; Dermal LD50 Mouse >2500 mg/kg

**Chloroacetone (201-161-1)**
Inhalation LC50 Rat 262 ppm 1 h; Oral LD50 Rat 100 mg/kg; Dermal LD50 Rabbit 141 mg/kg

**Carcinogenicity**

**A: General Product Information**
None of the components present in this material at concentrations equal to or greater than 0.19 are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

**B: Substance Carcinogenicity**

**Isopropyl alcohol (200-661-7)**
IARC: Monograph 71 [1999]; Supplement 7 [1987]; Monograph 15 [1977] (Group 3 (not classifiable))

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**Section 12 - Ecological Information**

**Ecotoxicity**

**A: General Product Information**
No information available for the product.

**B: Substance Analysis - Ecotoxicity - Aquatic Toxicity**

**Isopropyl alcohol (200-661-7)**

<table>
<thead>
<tr>
<th>Test &amp; Species</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50</td>
<td>9640 mg/L  [flow-through]</td>
</tr>
<tr>
<td>Pimephales</td>
<td></td>
</tr>
<tr>
<td>promelas</td>
<td></td>
</tr>
<tr>
<td>96 Hr LC50</td>
<td>11130 mg/L [static]</td>
</tr>
<tr>
<td>Pimephales</td>
<td></td>
</tr>
<tr>
<td>promelas</td>
<td></td>
</tr>
<tr>
<td>96 Hr LC50 Lepomis macrochirus</td>
<td>&gt;100000 µg/L</td>
</tr>
<tr>
<td>96 Hr EC50 Desmodesmus subspicatus</td>
<td>&gt;1000 mg/L</td>
</tr>
<tr>
<td>72 Hr EC50 Desmodesmus subspicatus</td>
<td>13299 mg/L</td>
</tr>
<tr>
<td>48 Hr EC50 Daphnia magna</td>
<td>12600 - 12700 mg/L</td>
</tr>
</tbody>
</table>

**Acetone (200-662-2)**

<table>
<thead>
<tr>
<th>Test &amp; Species</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>4.74 - 6.33 mL/L</td>
</tr>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>6210 - 8120 mg/L [static]</td>
</tr>
<tr>
<td>96 Hr LC50 Lepomis macrochirus</td>
<td>10294 - 17704 mg/L [Static]</td>
</tr>
<tr>
<td>48 Hr EC50 Daphnia magna</td>
<td>12600 - 12700 mg/L</td>
</tr>
</tbody>
</table>
Safety Data Sheet

Material Name: Quilon H - Chromium Complex

Mobility
No information available for the product.

Persistence & Degradation
No information available for the product.

Bioaccumulation
No information available for the product.

Other Adverse Effects
No information available for the product.

*** Section 13 - Disposal Considerations ***

Waste Disposal Instructions
Avoid disposal, attempt to utilize preparation completely. Prior to disposal of unused preparation, consult an approved waste disposal operative to ensure regulatory compliance. Refer to local statutory requirements and the Toxic Industrial Waste Regulations (TIWR) for proper disposal instructions.

*** Section 14 - Transportation Information ***

IATA Information
Shipping Name: Flammable Liquid, N.O.S. (Isopropanol and Acetone)
UN #: 1993  Hazard Class: 3  Packing Group: II

ICAO Information
Shipping Name: Flammable Liquid, N.O.S. (Isopropanol and Acetone)
UN #: 1993  Hazard Class: 2  Packing Group: II

IMDG Information
Shipping Name: Flammable Liquid, N.O.S. (Isopropanol and Acetone)
UN #: 1993  Hazard Class: 3  Packing Group: II

*** Section 15 - Regulatory Information ***

EU MARKING AND LABELLING:
Symbol(s):
Xi

Risk Phrases:
R36 Irritating to eyes.
R67 Vapours may cause drowsiness and dizziness.

Safety Phrases:
A: General Product Information
S16 Keep away from sources of ignition - No Smoking. S24/25 Avoid contact with skin and eyes. S3/9 Keep in a cool, well ventilated place.
**Safety Data Sheet**

**Material Name:** Quilon H - Chromium Complex

### B: Substance Analysis - Inventory

<table>
<thead>
<tr>
<th>Component/CAS</th>
<th>EC #</th>
<th>EEC</th>
<th>CAN</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol 67-63-0</td>
<td>200-661-7</td>
<td>EINECS</td>
<td>DSL</td>
<td>Yes</td>
</tr>
<tr>
<td>Acetone 67-64-1</td>
<td>200-662-2</td>
<td>EINECS</td>
<td>DSL</td>
<td>Yes</td>
</tr>
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<td>Water 7732-18-5</td>
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<td>EINECS</td>
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<td>239-730-1</td>
<td>EINECS</td>
<td>DSL</td>
<td>Yes</td>
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<td>Chromium, tetrachloro-(\mu)-hydroxy[(\mu)-(octadecanoato-O:O')di-] 15242-96-3</td>
<td>239-286-9</td>
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<td>DSL</td>
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<tr>
<td>Chloroacetone 78-95-5</td>
<td>201-161-1</td>
<td>EINECS</td>
<td>DSL</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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**Key/Legend**

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

End of Sheet