Material Safety Data Sheet
Hydrochloric acid Solutions in Isopropanol

Section 1 - Chemical Product and Company Identification

MSDS Name:
Hydrochloric acid 0.1N in Isopropanol, Hydrochloric acid 0.2N in Isopropanol

Catalog Numbers:
Q00451

Synonyms:

Company Identification:
Qorpak
1195 Washington Pike
Bridgeville, PA 15017

Company Phone Number:
(412) 257-3100

Emergency Phone Number:
(800) 424-9300

CHEMTREC Phone Number:
(800) 424-9300

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>Isopropyl alcohol</td>
<td>balance</td>
</tr>
<tr>
<td>7647-01-0</td>
<td>Hydrogen chloride</td>
<td>0.37 - 1%</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid
Warning! Flammable liquid. Keep away from heat, sparks, and flame. May cause eye and skin irritation. Flash Point: 53°F.
Target Organs: none known.

Potential Health Effects

Eye:
Contact may cause eye irritation, lacrimation (tearing), burning pain, and inflammation. 2% aqueous solutions applied to human eyes for seconds were without significant injury. Solutions of 0.25N-1N causes scarring of rabbit cornea, injury at pH less than 3.

Skin:
Causes symptoms similar to those of inhalation. Skin may turn brown-yellow. Deep burns are slow to heal and scarring may occur.
Ingestion:
Ingestion may produce burns of the mouth, esophagus with abdominal pain, vomiting, diarrhea, asphyxia (esophageal swelling), stomach and esophageal perforation. Circulatory collapse leading to renal, liver, or heart failure may occur in severe cases.

Inhalation:
Above 5ppm exposure ulceration of the respiratory tract with bronchitis, pneumonia, palpitations, dental erosion, and perforation occurring; 6-8hr latency period can occur. Acute burning of nose, throat with coughing, choking, dizziness, difficulty swallowing. Frothy sputum, cyanosis, with circulatory shock, asphyxiation, gastric hemorrhage, and death occurring from severe exposure.

Chronic:
Dental erosion, jaw necrosis, respiratory disease (bronchitis, pneumonitis), dermatitis, conjunctivitis (with possible corneal scarring, loss of vision), fever.

Section 4 - First Aid Measures

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once. Cover burns with loose sterile non-medicated bandages.

Skin:
Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes. Cover burns with a dry sterile bandage (secure, not tight).

Ingestion:
Get medical aid at once. Give oxygen if respiration is depressed. Induce vomiting (touch finger to back of throat) keeping head lower than hips (prevent aspiration into lungs). If victim is conscious, give 2-4 glasses of water to dilute alkali.

Inhalation:
Give artificial respiration if necessary. Get medical aid. Keep victim warm, at rest. Move victim to fresh air.

Notes to Physician:
Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:
Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Vapors mixed with air can explode when ignited. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Move container if possible, avoid breathing vapors or dust. Dangerous fire/negligible explosion hazard when exposed to heat or flame.

Extinguishing Media:
For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature:
750°F (398.89°C)

Flash Point:
53°F (11.67°C)

NFPA Rating:
CAS # 67-63-0 health-1; flammability-3; reactivity-0
CAS# 7647-01-0: health - 3; flammability - 0; reactivity - 1.
Material Safety Data Sheet  
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Explosion Limits:  
Lower: 2  Upper: 12.7

Section 6 - Accidental Release Measures

General Information:  
Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:  
Absorb spills with absorbent (vermiculite, sand, fuller's earth) and place in plastic bags for later disposal. Area may be washed down with water. Label reclaimed spill material as flammable. Do not allow vapors to accumulate in drains, sewers, low level enclosures or wells.

Section 7 - Handling and Storage

Handling:  
Wash thoroughly after handling. Ground and bond containers when transferring material. Avoid breathing dust, vapor, mist, or gas.

Storage:  
Protect from heat and incompatibles. Store capped as a flammable liquid in safety cabinet or vault that is ventilated.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:  
Provide local exhaust or general dilution ventilation.

Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>(400 ppm)</td>
<td>400 ppm TWA; 980 mg/m3 TWA</td>
<td>400 ppm TWA; 980 mg/m3 TWA</td>
</tr>
<tr>
<td>Hydrogen chloride</td>
<td>None of the components are on this list.</td>
<td>None of the components are on this list.</td>
<td>5 ppm; C 7 mg/m3</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs

Isopropyl alcohol: 400 ppm TWA; 980 mg/m3 TWA
Isopropyl alcohol: 400 ppm TWA; 980 mg/m3 TWA

Personal Protective Equipment

Eyes:  
Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear splash-proof safety goggles.

Skin:  
Wear appropriate protective gloves to prevent skin exposure.

Clothing:  
Wear appropriate protective clothing to prevent skin exposure.
Section 9 - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Color</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>acetone/ethanol odor</td>
</tr>
<tr>
<td>pH</td>
<td>acidic</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information found.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No information found.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information found.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information found.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>No information found.</td>
</tr>
<tr>
<td>Freezing/Melting Point</td>
<td>No information found.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No information found.</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Soluble.</td>
</tr>
<tr>
<td>Specific Gravity/Density</td>
<td>1.0</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>No information found.</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>No information found.</td>
</tr>
</tbody>
</table>

Section 10 - Stability and Reactivity

Chemical Stability:
Stable under normal temperatures and pressures.

Conditions to Avoid:
Incompatible materials.

Incompatibilities with Other Materials
Metals, oxidizing agents, alkalis, alcoholic hydrogen cyanide, tetraselenium tetrani tride, sodium, potassium permanganate, sulfuric acid, perchloric acid, calcium and uranium phosphide, perchlorates, magnesium boride, releases hydrochloric acid in isopropanol, phosgene, nitroform, trinitromethane, 2-butane, hydrogen peroxides, oxygen, oleum, metal alkyls.

Hazardous Decomposition Products
Hydrogen chloride, oxides of copper.

Hazardous Polymerization
Has not been reported

Section 11 - Toxicological Information

RTECS:
CAS# 67-63-0: NT8050000.
CAS# 7647-01-0: MW4025000.
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LD50/LC50:
CAS# 67-63-0:
Oral, mouse: LD50 = 3600 mg/kg
Oral, rabbit: LD50 = 6410 mg/kg
Oral, rat: LD50 = 5045 mg/kg
Skin, rabbit: LD50 = 12800 mg/kg.
CAS# 7647-01-0:
Inhalation, mouse: LC50 = 1108 ppm/1H
Inhalation, rat: LC50 = 3124 ppm/1H
Oral, rabbit: LD50 = 900 mg/kg.

Carcinogenicity:
CAS# 67-63-0
ACGIH: Not listed.
California: Not listed.
NIOSH: Not listed.
NTP: Not listed.
OSHA: Not listed.
IARC: Group 3
CAS# 7647-01-0
ACGIH: Not listed.
California: Not listed.
NIOSH: Not listed.
NTP: Not listed.
OSHA: Not listed.
IARC: Group 3

Epidemiology:
Teratogenicity:
Reproductive:
Mutagenicity
Neurotoxicity

Section 12 - Ecological Information
No information found.

Section 13 - Disposal Considerations
Dispose of in accordance with federal, state, and local regulations.

Section 14 - Transport Information

US DOT

0.1N
Shipping Name: Flammable liquid, n.o.s.
(Isopropanol)
Hazard Class: 3

0.2N
Flammable liquid, Corrosive, n.o.s.
(Isopropanol, Hydrochloric acid)
Hazard Class: 3
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UN Number: UN1993
Packing Group: PG II

Section 15 - Regulatory Information

US Federal
TSCA
CAS# 67-63-0 is listed on the TSCA Inventory.
CAS# 7647-01-0 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ)
CAS# 7647-01-0: final RQ = 5000 pounds (2270 kg)

CERCLA/SARA Section 313
This material contains Isopropyl alcohol (CAS# 67-63-0, balance%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373. Hydrogen chloride is not at a high enough concentration to be reportable under Section 313.

OSHA - Highly Hazardous
CAS# 7647-01-0 is considered highly hazardous by OSHA.

US State
State Right to Know
Isopropyl alcohol can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.
Hydrogen chloride can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California Regulations

European/International Regulations
Canadian DSL/NDSL
CAS# 67-63-0 is listed on Canada's DSL List.
CAS# 7647-01-0 is listed on Canada's DSL List.

Canada Ingredient Disclosure List
CAS# 67-63-0 is listed on Canada's Ingredient Disclosure List.
CAS# 7647-01-0 is listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: February 21, 1998
Revision Date: February 19, 2004

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