# Material Safety Data Sheet

## Section 1. Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
<th>Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>See Section 15.</td>
</tr>
</tbody>
</table>

### Common Name/Trade Name
Chloral hydrate

### Catalog Number(s).
CH113

### CAS#
302-17-0

### Manufacturer
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

### Commercial Name(s)
Not available.

### Synonym
2,2,2-Trichloro-1,1-ethanediol; Trichloroacetaldehyde Hydrate

### Chemical Name
Chloral Hydrate

### Chemical Family
Not available.

### Chemical Formula
C2H3Cl3O2

### Supplier
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

## Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloral hydrate</td>
<td>302-17-0</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Exposure Limits**

**Toxicological Data on Ingredients**

Chloral hydrate:
- **ORAL (LD50):** Acute: 479 mg/kg [Rat]. 1100 mg/kg [Mouse].
- **DERMAL (LD50):** Acute: 3030 mg/kg [Rat].

## Section 3. Hazards Identification

**Potential Acute Health Effects**
Hazardous in case of eye contact (irritant), of ingestion. Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

**Potential Chronic Health Effects**

- **CARCINOGENIC EFFECTS:** 3 (Not classifiable for human.) by IARC.
- **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.
- **TERATOGENIC EFFECTS:** Not available.
- **DEVELOPMENTAL TOXICITY:** Not available.

The substance is toxic to the nervous system.
Repeated or prolonged exposure to the substance can produce target organs damage.

**Continued on Next Page**
Section 4. First Aid Measures

**Eye Contact**
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

**Skin Contact**
Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

**Serious Skin Contact**
Not available.

**Inhalation**
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Serious Inhalation**
Not available.

**Ingestion**
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Serious Ingestion**
Not available.

Section 5. Fire and Explosion Data

**Flammability of the Product**
May be combustible at high temperature.

**Auto-Ignition Temperature**
Not available.

**Flash Points**
Not available.

**Flammable Limits**
Not available.

**Products of Combustion**
These products are carbon oxides (CO, CO2), halogenated compounds.

**Fire Hazards in Presence of Various Substances**
Slightly flammable to flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

**Explosion Hazards in Presence of Various Substances**
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

**Fire Fighting Media and Instructions**
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

**Special Remarks on Fire Hazards**
Combustible when exposed to heat or flame. When heated to decomposition it emits toxic fumes.

**Special Remarks on Explosion Hazards**
Not available.

Section 6. Accidental Release Measures

**Small Spill**
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

**Large Spill**
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

**Precautions**
Keep locked up. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.

**Storage**
Keep container tightly closed. Keep container in a cool, well-ventilated area.

Continued on Next Page
## Section 8. Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>Engineering Controls</th>
<th>Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Protection</td>
<td>Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.</td>
</tr>
<tr>
<td>Personal Protection in Case of a Large Spill</td>
<td>Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.</td>
</tr>
<tr>
<td>Exposure Limits</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

## Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical state and appearance</th>
<th>Solid. (Crystals solid.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>165.4 g/mole</td>
</tr>
<tr>
<td>pH (1% soln/water)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>96°C (204.8°F)</td>
</tr>
<tr>
<td>Melting Point</td>
<td>57°C (134.6°F)</td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.9081 (Water = 1)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Volatility</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>Water/Oil Dist. Coeff.</td>
<td>The product is more soluble in oil; log(oil/water) = 1</td>
</tr>
<tr>
<td>Ionicity (in Water)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Dispersion Properties</td>
<td>See solubility in water, diethyl ether, acetone.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Easily soluble in cold water, diethyl ether, acetone.</td>
</tr>
<tr>
<td>Odor</td>
<td>Aromatic. Pungent. Acrid (Slight.)</td>
</tr>
<tr>
<td>Taste</td>
<td>Bitter. (Slight.)</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless. White.</td>
</tr>
</tbody>
</table>

## Section 10. Stability and Reactivity Data

| Stability                      | The product is stable. |
| Instability Temperature        | Not available.          |
| Conditions of Instability      | Excess heat, incompatible materials |
| Incompatibility with various substances | Not available. |
| Corrosivity                    | Non-corrosive in presence of glass. |
| Special Remarks on Reactivity  | Not available.          |
| Special Remarks on Corrosivity | Not available.          |
| Polymerization                 | Will not occur.          |

Continued on Next Page
Chloral hydrate

Section 11. Toxicological Information

Routes of Entry
Inhalation. Ingestion.

Toxicity to Animals
Acute oral toxicity (LD50): 479 mg/kg [Rat].
Acute dermal toxicity (LD50): 3030 mg/kg [Rat].

Chronic Effects on Humans
CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC.
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. Causes damage to the following organs: the nervous system.

Other Toxic Effects on Humans
Hazardous in case of ingestion.
Slightly hazardous in case of skin contact (irritant, permeator), of inhalation.

Special Remarks on Toxicity to Animals
Not available.

Special Remarks on Chronic Effects on Humans
Human: passes through the placenta, excreted in maternal milk.
May cause adverse reproductive effects and birth defects (teratogenic) based on animal test data.
May cause cancer based on animal test data.

Special Remarks on other Toxic Effects on Humans
Acute Potential Health Effects:
Skin: May cause skin irritation. May be absorbed through skin.
Eyes: May cause eye irritation.
Inhalation: May cause respiratory tract irritation.
Ingestion: May be habit forming! May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea, flatulence, and unpleasant taste. May affect behavior/central nervous system (vertigo, dizziness, disorientation, paronia, delirium, drowsiness, excitement, nightmares, malaise, mental confusion, lethargy, convulsions, ataxia, tremor, anxiety, relaxation of voluntary muscles, general anesthetic, somnolence, hallucinations, headache), cardiovascular system (hypotension, myocardial ischemia, peripheral vasodilation, ventilatory depression, arrhythmias, myocardial depression), eyes (mydriasis), respiration (respiratory depression). Allergic skin rashes including hives, erythema, urticaria, eczematoid may also occur.
Chronic Potential Health Effects:
Ingestion: Repeated or prolonged ingestion may affect behavior/central nervous system, liver (jaundice, hepatic damage), blood, and metabolism, spleen, kidneys (albuminuria from renal irritation or injury)

Section 12. Ecological Information

Ecotoxicity
Not available.

BOD5 and COD
Not available.

Products of Biodegradation
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation
The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation
Not available.

Section 13. Disposal Considerations

Waste Disposal
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification
Not a DOT controlled material (United States).

Identification
Not applicable.

Special Provisions for Transport
Not applicable.

Continued on Next Page
**DOT (Pictograms)**

![DOT Pictogram](image)

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**Section 15. Other Regulatory Information and Pictograms**

**Federal and State Regulations**

TSCA 8(b) inventory: Chloral hydrate

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**California Proposition 65 Warnings**

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

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**Other Regulations**


EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 206-117-5).

Canada: Listed on Canadian Domestic Substance List (DSL).

China: Listed on National Inventory.

Japan: Listed on National Inventory (ENCS).

Korea: Listed on National Inventory (KECI).

Philippines: Listed on National Inventory (PICCS).

Australia: Listed on AICS.

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**Other Classifications**

<table>
<thead>
<tr>
<th>Classification</th>
<th>WHMIS (Canada)</th>
<th>DSCL (EEC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).</td>
<td>R25- Toxic if swallowed.</td>
</tr>
<tr>
<td></td>
<td>CLASS D-2B: Material causing other toxic effects (TOXIC).</td>
<td>R36/38- Irritating to eyes and skin.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S25- Avoid contact with eyes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</td>
</tr>
</tbody>
</table>

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**HMIS (U.S.A.)**

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Hazard</td>
<td>2</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
<tr>
<td>Personal Protection</td>
<td>E</td>
</tr>
</tbody>
</table>

**National Fire Protection Association (U.S.A.)**

![Flammability](image)

Health: 2 | Reactivity: 0 | Specific hazard: 1

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**WHMIS (Canada) (Pictograms)**

![WHMIS Pictogram](image)

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**DSCL (Europe) (Pictograms)**

![DSCL Pictogram](image)

---

**TDG (Canada) (Pictograms)**

![TDG Pictogram](image)

---

**ADR (Europe) (Pictograms)**

![ADR Pictogram](image)

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**Protective Equipment**

Gloves.

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*Continued on Next Page*
Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

Section 16. Other Information

<table>
<thead>
<tr>
<th>MSDS Code</th>
<th>C4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other Special Considerations</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Validated by Sonia Owen on 12/6/2011.  
Verified by Sonia Owen.  
Printed 12/6/2011.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.