SAFETY DATA SHEET

1. IDENTIFICATION

Product code: HP552
Product Name: 1,2-DICHLOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE

Other means of identification
Synonyms:

1,2-Bichloroethane
1,2-DCE
1,2-Dichlorethane
1,2-Ethylene dichloride
Borer sol
Brocide
Destruxol borer-sol
Di-chlor-mulsion
Dichloremulsion
Dutch liquid
Dutch oil
EDC
Ethane dichloride
Ethylene chloride
Ethylene dichloride
Glycol dichloride
alpha,beta-Dichloroethane
sym-Dichloroethane

CAS #: 107-06-2
RTECS # KI0525000
CI#: Not available

Recommended use of the chemical and restrictions on use
Uses advised against: No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com

Emergency telephone number: Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)
2. HAZARDS IDENTIFICATION

Classification

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>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Gases)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Vapors)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2A</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Category 2</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Label elements

Danger

Hazard statements
- Harmful if swallowed
- May be harmful in contact with skin
- Toxic if inhaled
- Causes skin irritation
- Causes serious eye irritation
- Suspected of causing cancer
- May cause respiratory irritation. May cause drowsiness or dizziness
- Highly flammable liquid and vapor

Product code: HP552
Product name: 1,2-DICHLOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE
Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Wear protective gloves/protective clothing/eye protection/face protection
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/..? ./equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Precautionary Statements - Response
If exposed or concerned: Get medical advice/attention
In case of fire: Use CO2, dry chemical, or foam to extinguish.
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 skin irritation occurs: Get medical advice/attention
If on skin (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.
If swallowed: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>107-06-2</td>
<td>100</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention. If symptoms persist, call a physician.

Product code: HP552

Product name: 1,2-DICHLOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE
Inhalation: Toxic by inhalation. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention.

Ingestion: Harmful if swallowed. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

**Symptoms**

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically

**Protection of first-aiders**

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

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### 5. FIRE-FIGHTING MEASURES

**Extinguishing Media**

**Suitable Extinguishing Media:**
Dry chemical. Carbon dioxide (CO2). Water spray, mist, or foam.

**Unsuitable Extinguishing Media:**
Do not use a solid (straight) water stream as it may scatter and spread fire.

**Specific hazards arising from the chemical**

**Hazardous Combustion Products:**
Hydrogen chloride, Vinyl chloride, Acetylene, Phosgene, Carbon monoxide, carbon dioxide

**Specific hazards:**
Flammable. May be ignited by heat, sparks or flames. Vapor may travel considerable distance to source of ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Container explosion may occur under fire conditions or when heated. Fire may produce irritating, corrosive and/or toxic gases. Hydrogen chloride gas is produced during combustion. When heated to decomposition it emits toxic fumes of hydrogen chloride.

**Special Protective Actions for Firefighters**

**Specific Methods:**
Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

**Product code:** HP552  
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Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

**Personal Precautions:**
Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces. Use spark-proof tools and explosion-proof equipment.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

#### Methods and material for containment and cleaning up

**Methods for containment**
Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Sweep up and shovel. Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

### 7. HANDLING AND STORAGE

#### Precautions for safe handling

**Technical Measures/Precautions:**
Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

**Safe Handling Advice**
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Use only in well-ventilated areas. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Keep away from open flames, hot surfaces and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

#### Conditions for safe storage, including any incompatibilities

**Technical Measures/Storage Conditions:**
Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Store at room temperature in the original container. Store in a segregated and approved area. Store away from incompatible materials.

**Incompatible Materials:**

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

**National occupational exposure limits**

**Product code:** HP552  
**Product name:** 1,2-DICHLOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE
United States

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>1 ppm TWA</td>
<td>10 ppm TWA</td>
<td>1 ppm TWA</td>
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</tr>
<tr>
<td>107-06-2</td>
<td>4 mg/m³ TWA</td>
<td>4 mg/m³ TWA</td>
<td>4 mg/m³ TWA</td>
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</tr>
<tr>
<td></td>
<td>2 ppm STEL</td>
<td>2 ppm STEL</td>
<td>2 ppm STEL</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>8 mg/m³ STEL</td>
<td>8 mg/m³ STEL</td>
<td>8 mg/m³ STEL</td>
<td>None</td>
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</tbody>
</table>

Canada

<table>
<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
</tr>
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<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>1 ppm TWA</td>
<td>1 ppm TWA</td>
<td>10 ppm TWA</td>
<td>1 ppm TWAEV</td>
</tr>
<tr>
<td>107-06-2</td>
<td>40 mg/m³ TWA</td>
<td>2 ppm STEL</td>
<td>4 mg/m³ TWAEV</td>
<td>2 ppm STEV</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 mg/m³ STEV</td>
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Australia and Mexico

<table>
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<td>10 ppm TWA</td>
</tr>
<tr>
<td>107-06-2</td>
<td>40 mg/m³ TWA</td>
<td>40 mg/m³ TWA</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles.

Skin and body protection: Long sleeved clothing. Chemical resistant apron. Gloves.

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands and face before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES
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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Physical state:</td>
<td>Liquid</td>
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<tr>
<td>Appearance:</td>
<td>Clear, Oily</td>
</tr>
<tr>
<td>Color:</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor:</td>
<td>Pleasant, Sweet, Chloroform-like</td>
</tr>
<tr>
<td>Taste:</td>
<td>Sweet</td>
</tr>
<tr>
<td>Molecular/Formula weight:</td>
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</tr>
<tr>
<td>Flammability:</td>
<td>Highly flammable</td>
</tr>
<tr>
<td>Flashpoint (°C/F):</td>
<td>13°C/55.4°F, 18°C/64.4°F</td>
</tr>
<tr>
<td>Lower Explosion Limit (%):</td>
<td>6.2%</td>
</tr>
<tr>
<td>Melting point/range(°C/F):</td>
<td>-35.5°C/-32°F</td>
</tr>
<tr>
<td>Boiling point/range(°C/F):</td>
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<tr>
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<td>1.25 @ 20 deg. C</td>
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<tr>
<td>Vapor pressure @ 20°C (kPa):</td>
<td>8.1-8.7</td>
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<td>VOC content (g/L):</td>
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<td>Odor threshold (ppm):</td>
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<tr>
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</tr>
<tr>
<td></td>
<td>Miscible with alcohol</td>
</tr>
<tr>
<td></td>
<td>Miscible with Chloroform</td>
</tr>
<tr>
<td></td>
<td>Miscible with Acetone</td>
</tr>
<tr>
<td>Flammability:</td>
<td>Highly flammable</td>
</tr>
<tr>
<td>Flash point (°C):</td>
<td>13</td>
</tr>
<tr>
<td>Autoignition Temperature (°C/F):</td>
<td>413-440°C/775-824°F</td>
</tr>
<tr>
<td>Decomposition temperature(°C/F):</td>
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<tr>
<td>Evaporation rate:</td>
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<tr>
<td>Vapor density:</td>
<td>3.4</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>1.45-1.48</td>
</tr>
<tr>
<td>Solubility:</td>
<td>Very slightly soluble in water</td>
</tr>
<tr>
<td></td>
<td>Solubility in Water: 0.800-0.869 g/100 ml @ 20 deg. C</td>
</tr>
<tr>
<td></td>
<td>Very soluble in Ethanol</td>
</tr>
<tr>
<td></td>
<td>Soluble in Benzene</td>
</tr>
<tr>
<td></td>
<td>Soluble in Carbon tetrachloride</td>
</tr>
<tr>
<td></td>
<td>Soluble in organic solvents</td>
</tr>
<tr>
<td></td>
<td>Soluble in Acetone</td>
</tr>
<tr>
<td>Molecular weight:</td>
<td>98.96</td>
</tr>
<tr>
<td>Formula:</td>
<td>C₂H₄Cl₂</td>
</tr>
<tr>
<td>Odor:</td>
<td>Pleasant, Sweet, Chloroform-like</td>
</tr>
<tr>
<td>Taste:</td>
<td>Sweet</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
Explosion can result when ethylene dichloride is mixed with liquid ammonia, dimethylaminopropylamine, nitrogen tetroxide, metal powders, organic peroxides, reducing agents, alkali or bases, alkali earth metals.
Mixtures with Nitric acid are easily detonated by heat, impact or friction
Mixtures with mercaptans form thioethers and generate heat while mixtures with nitrides generate heat and ammonia forming toxic fumes.
Not compatible with chemically active metals such as aluminum or magnesium powder, sodium, potassium.
In the presence of UV light, air, moisture, or heat liberates toxic quantities of phosgene, hydrogen chloride, carbon monoxide, carbon dioxide, acetylene, or vinyl chloride.

Chemical stability
Stability: Stable under recommended storage conditions. Ethylene dichloride decomposes slowly becoming acidic and darkening in color.
In the presence of air, moisture, light at ordinary temperature, it darkens in color.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat, flames and sparks. Ignition sources. Incompatible materials.

Product code: HP552
Product name: 1,2-DICHLOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation. Skin.

Acute Toxicity

Component Information

1,2-Dichloroethane - 107-06-2

LD50/oral/rat = 500 mg/kg Oral LD50 Rat (RTECS)
680 mg/kg oral LD50 rat (LOLI)
LD50/oral/mouse = 413 mg/kg oral LD50 mouse
LD50/dermal/rat = No information available
LD50/dermal/rabbit = 2800 mg/kg Dermal LD50 Rabbit
LC50/inhalation/rat = 1000 ppm Inhalation (vapor) LC50 Rat 7 h
5100 mg/m³ inhalation LC50 rat 6h
LC50/inhalation/mouse = 1060 mg/m³ inhalation (gas) LC50 mouse 6h
Other LD50 or LC50 information = 2500 mg/kg oral LD50 dog
5700 mg/kg oral LD50 dog
0.5 mL/kg oral LD50 guinea pig
0.7 mL/kg (860 mg/kg) oral LD50 rabbit

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 500mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = 413mg/kg

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = 2800mg/kg

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available

Product code: HP552

Product name: 1,2-DICHLOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation. May be harmful in contact with skin. If absorbed through skin it may cause systemic effects. If absorbed through the skin it may affect behavior/central nervous system and cause central nervous system effects.

Eye Contact: Causes serious eye irritation.

Inhalation Toxic by inhalation. Causes respiratory tract irritation. May cause dyspnea (difficulty breathing or shortness of breath). May cause headache, nausea, vomiting. Inhalation of vapors may cause drowsiness and dizziness. Inhalation of high concentrations of vapor may cause anesthetic effects. May affect behavior/central nervous system (somnolence). It may affect behavior/central nervous system (tremors). May affect behavior/central nervous system (lightheadedness, ataxia). May cause muscle weakness. May cause cyanosis. It may affect the liver. May affect the kidneys. It may affect the adrenal gland. May affect behavior/central nervous system (confusion). May affect behavior/central nervous system (loss of consciousness, coma). May cause increased heart rate (tachycardia).

Ingestion Ingestion may cause nausea, vomiting. May cause hypermotility, diarrhea. It may affect behavior/central nervous system (central nervous system depression, ataxia, general anesthetic). May affect behavior/central nervous system (somnolence). May cause cyanosis. May affect respiration (dyspnea - difficulty breathing and shortness of breath). May affect liver. May affect the kidneys.

Aspiration hazard No information available

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

Chronic Toxicity Prolonged or repeated skin contact may cause defatting and dermatitis
Prolonged or repeated inhalation may affect the kidneys
Prolonged or repeated inhalation may affect the liver
Prolonged or repeated inhalation may cause anemia
Prolonged or repeated skin absorption may affect the liver and kidneys
Prolonged or repeated ingestion may affect the liver, and kidneys
Prolonged or repeated ingestion may affect the blood (changes in serum composition)
Prolonged or repeated ingestion may affect the blood (changes in white blood cell count)

Sensitization: No information available

Mutagenic Effects: Experiments with bacteria and/or yeast have shown mutagenic effects
Mutations in microorganisms
Mutagenic effects in mammalian somatic cells

Carcinogenic effects: Suspected of causing cancer. Possibly carcinogenic to humans.

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Components | IARC | ACGIH - Carcinogens | NTP | OSHA HCS - Carcinogens | Australia - Notifiable Carcinogenic Substances | Australia - Prohibited Carcinogenic Substances
--- | --- | --- | --- | --- | --- | ---

ACGIH (American Conference of Governmental Industrial Hygienists)
IARC (International Agency for Research on Cancer)
NTP (National Toxicology Program)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity

Reproductive Effects: No data is available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure: central nervous system. Respiratory system.
STOT - repeated exposure: No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

1,2-Dichloroethane - 107-06-2
Freshwater Algae Data: 166 mg/L EC50 Desmodesmus subspicatus 96 h
433 mg/L EC50 Pseudokirchneriella subcapitata 96 h
Freshwater Fish Species Data: 110 - 123 mg/L LC50 Pimephales promelas 96 h flow-through 1
230 - 710 mg/L LC50 Lepomis macrochirus 96 h flow-through 1
225 mg/L LC50 Oncorhynchus mykiss 96 h static 1
Water Flea Data: 140 - 190 mg/L EC50 Daphnia magna 48 h
540 mg/L EC50 Daphnia magna 24h
Persistence and degradability: Not readily biodegradable
Bioaccumulative potential: No information available
Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Product code: HP552  
Product name: 1,2-DICHLOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE
13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal. Do not reuse container Dispose of as unused product.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>U077</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT

- UN-No: UN1184
- Proper Shipping Name: Ethylene dichloride
- Hazard Class: 3
- Subsidiary Risk: 6.1
- Packing Group: II
- ERG No: 131
- Marine Pollutant: No data available
- DOT RQ (lbs): No information available
- Symbol(s): R3

TDG (Canada)

- UN-No: UN1184
- Proper Shipping Name: Ethylene dichloride
- Hazard Class: 3
- Subsidiary Risk: (6.1)
- Packing Group: II
- Description: No information available

ADR

- UN-No: UN1184
- Proper Shipping Name: Ethylene dichloride
- Hazard Class: 3
- Packing Group: II
- Subsidiary Risk: 6.1
- Classification Code: No information available
- Description: No information available
- CEFIC Tremcard No: No information available

IMO / IMDG

- UN-No: UN1184
- Proper Shipping Name: Ethylene dichloride
- Hazard Class: 3
- Subsidiary Risk: 6.1
- Packing Group: II
- Description: No information available
- IMDG Page: No information available
- Marine Pollutant: No information available
- EMS: F-E
- MFAG: No information available
- Maximum Quantity: No information available

Product code: HP552

Product name: 1,2-DICHLOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE
14. TRANSPORT INFORMATION

RID

<table>
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<th>Component</th>
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<th>Packing Group:</th>
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ICAO

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<th>Hazard Class:</th>
<th>Subsidiary Risk:</th>
<th>Packing Group:</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene dichloride</td>
<td>UN1184</td>
<td>Ethylene dichloride</td>
<td>3</td>
<td>6.1</td>
<td>II</td>
<td>No information available</td>
</tr>
</tbody>
</table>

IATA

<table>
<thead>
<tr>
<th>Component</th>
<th>UN-No:</th>
<th>Proper Shipping Name:</th>
<th>Hazard Class:</th>
<th>Subsidiary Risk:</th>
<th>Packing Group:</th>
<th>ERG Code:</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene dichloride</td>
<td>UN1184</td>
<td>Ethylene dichloride</td>
<td>3</td>
<td>6.1</td>
<td>II</td>
<td>3P</td>
<td>No information available</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>Present T</td>
<td>Present KE-10121</td>
<td>Present</td>
<td>Present (2)-54</td>
<td>Present</td>
<td>Present</td>
<td>Present 203-458-1</td>
</tr>
</tbody>
</table>

U.S. Regulations

1,2-Dichloroethane

- **Massachusetts RTK**: Present
- **New Jersey RTK Hazardous Substance List**: 0652
- **New Jersey (EHS) List**: 0652 500 lb TPQ
- **New Jersey - Discharge Prevention - List of Hazardous Substances**: Present
- **Pennsylvania RTK**: Environmental hazard
- **Special hazardous substance**: Present
- **Pennsylvania RTK - Environmental Hazard List**: Present
- **Pennsylvania RTK - Special Hazardous Substances**: Present
- **Michigan - Critical Materials List**: Present
- **Minnesota - Hazardous Substance List**: Present
- **New York Release Reporting - List of Hazardous Substances**: 100 lb RQ 1 lb RQ
- **Louisiana Reportable Quantity List for Pollutants**: 100lb final RQ 45.4kg final RQ 1 lb final RQ 0.454 kg final RQ
- **California Directors List of Hazardous Substances**: Present

FDA - Direct Food Additives


Product code: HP552

Product name: 1,2-DICHLOOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE
1,2-Dichloroethane

FDA - 21 CFR - Total Food Additives 172.385 172.560 172.710 173.230 173.315 175.105 176.170 177.1580 177.1585 177.2550 573.440 73.30 73.345 73.615


Chemicals Known to the State of California to Cause Cancer:
WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>carcinogen</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>100 lb final RQ 45.4 kg final RQ 1 lb final RQ 0.454 kg final RQ</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>0.1 % de minimis concentration</td>
</tr>
</tbody>
</table>

U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>Not Applicable</td>
<td>06/01/1987 06/01/1997</td>
</tr>
</tbody>
</table>

Canada

WHMIS hazard class:
B2 Flammable liquid
D1A Very toxic materials
D2A Very toxic materials

1,2-Dichloroethane  B2 D1A D2A

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

<table>
<thead>
<tr>
<th>Components</th>
<th>WHMIS Ingredient Disclosure List -</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>1 %</td>
</tr>
</tbody>
</table>

Inventory

<table>
<thead>
<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>Present</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>CEPA Schedule I - Toxic Substances</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>Present</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Product code: HP552  Product name: 1,2-DICHLOROETHANE, EXCEEDS A.C.S. SPECIFICATIONS, HPLC GRADE
EU Classification

**R-phrase(s)**
R11 - Highly flammable.
R22 - Harmful if swallowed.
R45 - May cause cancer.
R36/37/38 - Irritating to eyes, respiratory system and skin.

**S-phrase(s)**
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S53 - Avoid exposure - obtain special instructions before use.

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Dichloroethane</td>
<td>F; R11</td>
<td>No information</td>
<td>S53 S45</td>
</tr>
<tr>
<td></td>
<td>Xn; R22</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Xi; R36/37/38</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carc.Cat.2; R45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**
F - Highly flammable.
Xn - Harmful.
Xi - Irritant.

16. OTHER INFORMATION

**Product code:** HP552

**Product name:** 1,2-
DICHLOROETHANE, EXCEEDS A.C.S.
SPECIFICATIONS, HPLC GRADE
Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) 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 SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. 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 SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet