SAFETY DATA SHEET

Product code: T1116
Product Name: TRICHLOROETHYLENE, DEGREASER GRADE

Other means of identification
Synonyms:
Trichloroethene; 1,1,2-Trichloroethylene; 1,1-Dichloro-2-chloroethylene; 1,2,2-
Trichloroethylene; 1,-Chloro-2,2-dichloroethylene; Ethinyl trichloride; Ethylene
trichloride; Threthylene; Trethylene
CAS #: 79-01-6
RTECS #: KX4560000
CI#: Not available

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

Supplier:
Spectrum Chemicals and Laboratory Products, Inc.
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>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>2</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>2</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>1B</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>3</td>
</tr>
</tbody>
</table>

Label elements
Danger

Hazard statements
May be harmful if swallowed
Causes skin irritation
Causes serious eye irritation
Suspected of causing genetic defects
May cause cancer
May cause drowsiness or dizziness

Hazard statements
May be harmful if swallowed
Causes skin irritation
Causes serious eye irritation
Suspected of causing genetic defects
May cause cancer
May cause drowsiness or dizziness

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
Specific treatment (see .? on this label)
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 ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroethylene</td>
<td>79-01-6</td>
<td>100</td>
<td>*</td>
</tr>
</tbody>
</table>

Product code: T1116
Product name: TRICHLOROETHYLENE, DEGREASER
GRADE
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)

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 eye with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: 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


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

5. FIRE-FIGHTING MEASURES

Extinguishing Media

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

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon oxides, Halogenated compounds
Specific hazards:

May be combustible at high temperatures
Mixtures of powdered beryllium with trichloroethylene will flash on heavy impact.
Mixtures of powdered magnesium with trichloroethylene will flash on heavy impact.
Mixtures of powdered titanium with trichloroethylene will flash on heavy impact.
Granular Barium in contact with Trichloroethylene is susceptible to detonation. Mixtures of lithium shavings and trichloroethylene are impact-sensitive and will explode, sometimes violently.
Mixtures of liquid oxygen with dichloromethane, 1,1,1-trichloroethane, trichloroethylene, and chlorinated dye penetrants 1 and 2 exploded violently when initiated with a blasting cap.
Mixtures of dinitrogen tetraoxide with trichloroethylene are explosive when subjected to shock of 25 g TNT equivalent or less.

Special Protective Actions for Firefighters

Specific Methods: No information available.
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.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. 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. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Absorb spill with inert material (e.g. vermiculite, dry sand or earth). Use appropriate tools to put the spilled material in a suitable chemical waste disposal container.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice: Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe vapors or spray mist. Handle in accordance with good industrial hygiene and safety practice.

Product code: T1116

Product name: TRICHLOROETHYLENE, DEGREASER

GRADE
Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials. Sensitive to light. Store in light-resistant containers.

Incompatible Materials:

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroethylene - 79-01-6</td>
<td>100 ppm TWA</td>
<td>None</td>
<td>= 25 ppm STEL</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>200 ppm Ceiling</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Canada

<table>
<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroethylene - 79-01-6</td>
<td>= 269 mg/m³ TWA</td>
<td>= 10 ppm TWA</td>
<td>10 ppm TWA</td>
<td>50 ppm TWAEV</td>
</tr>
<tr>
<td></td>
<td>= 50 ppm TWA</td>
<td></td>
<td></td>
<td>269 mg/m³ TWAEV</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>200 ppm STEV</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1070 mg/m³ STEV</td>
</tr>
</tbody>
</table>

Australia and Mexico

<table>
<thead>
<tr>
<th>Components</th>
<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroethylene - 79-01-6</td>
<td>216 mg/m³ STEL</td>
<td>= 100 ppm TWA</td>
</tr>
<tr>
<td></td>
<td>40 ppm STEL</td>
<td>= 535 mg/m³ TWA</td>
</tr>
<tr>
<td></td>
<td>10 ppm TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>54 mg/m³ TWA</td>
<td></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. Safety glasses with side-shields.

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

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES
### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Ethereal, Sweetish</td>
</tr>
<tr>
<td>Formula</td>
<td>C₂HCl₃</td>
</tr>
<tr>
<td>Flash Point Tested</td>
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</tr>
<tr>
<td>Autoignition Temperature</td>
<td>420°C/788°F</td>
</tr>
<tr>
<td>Boiling point/Range</td>
<td>86°F-87°C/186.8°F-188.6°F</td>
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<tr>
<td>Specific gravity</td>
<td>1.46-1.5</td>
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<td>Evaporation rate</td>
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<tr>
<td>Odor threshold (ppm)</td>
<td>21-50</td>
</tr>
<tr>
<td>Miscibility</td>
<td>Miscible with oils</td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor</td>
<td>Ethereal, Sweetish</td>
</tr>
<tr>
<td>Taste</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular/Formula weight</td>
<td>131.39</td>
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<tr>
<td>Flash point (°C)</td>
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</tr>
<tr>
<td>Lower Explosion Limit (%)</td>
<td>8% @ 25°C; 7.8% @ 100°C</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature (°C/°F)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flashpoint (°C/°F)</td>
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<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Density (g/cm³)</td>
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<tr>
<td>Viscosity</td>
<td>No information available</td>
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<tr>
<td>Vapor pressure @ 20°C (kPa)</td>
<td>7.7</td>
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<tr>
<td>Vapor density</td>
<td>4.53</td>
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<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>2.6</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in Acetone</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in Chloroform</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in diethyl ether</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in Ethanol</td>
</tr>
<tr>
<td>Solubility</td>
<td>Very slightly soluble in cold water</td>
</tr>
<tr>
<td>Solubility</td>
<td>Solubility in water: 1280 mg/l @ 25°C</td>
</tr>
<tr>
<td>Miscibility</td>
<td>Miscible with oils</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear, Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Ethereal, Sweetish</td>
</tr>
<tr>
<td>Taste</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular/Formula weight</td>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
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<tr>
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</tr>
<tr>
<td>Solubility</td>
<td>Solubility in water: 1280 mg/l @ 25°C</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

#### Reactivity
- Reactive with acids
- Reactive with alkalis
- Reactive with metals
- Trichloroethylene reacts violently with the anhydrous perchloric acid.
- Mixtures of dinitrogen tetraoxide with trichloroethylene react violently on heating to 150°C.
- In the presence of strong alkali (e.g., sodium hydroxide), trichloroethylene can decompose into dichloroacetylene, an explosive, flammable, and highly toxic compound.
- Formation of phosgene, a highly toxic gas, was observed when trichloroethylene came into contact with iron, copper, zinc, or aluminum over the temperature range 250°C to 600°C.
- Incompatible with metal powders, active metals (alkali metals and alkaline earth metals) such as barium, lithium, sodium, magnesium, titanium.
- Trichloroethylene can react violently with the following: Aluminum (Al), Barium (Ba), Lithium (Li), Liquid oxygen (O₂), Ozone (O₃), Magnesium (Mg), Nitrogen tetroxide (N₂O₄), Potassium nitrate (KNO₃), Potassium hydroxide (KOH), Sodium (Na), Sodium hydroxide (NaOH).
- Slowly decomposed with formation of Hydrochloric Acid by light and in the presence of moisture.
- Trichloroethylene is incompatible with organic anhydrides, isocyanates, alkylene oxides, aldehydes, alcohols, glycols, phenols, cresols, caprolactam solution, epichlorohydrin, nitrogen tetroxide.

#### Chemical stability
- Sensitive to light. Exposure to light accelerates decomposition. Stable at normal conditions.

**Product code:** T1116  
**Product name:** TRICHLOROETHYLENE, DEGREASER  
**GRADE**
Possibility of Hazardous Reactions: Hazardous polymerization does not occur


Hazardous decomposition products: Carbon oxides. Halogenated compounds.

Other Information
Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Principal Routes of Exposure:
Eyes. Inhalation. Skin.

Acute Toxicity

Component Information

Trichloroethylene - 79-01-6
LD50/oral/rat = 4920 mg/kg Oral LD50 Rat
LD50/oral/mouse = 2400 mg/kg Oral LD50 Mouse
LD50/dermal/rat = No information available
LD50/dermal/rabbit = 20 mL/kg Dermal LD50 Rabbit
LC50/inhalation/rat = 140700 mg/m³/1H Inhalation LC50 Rat
LC50/inhalation/mouse = 8450 ppm/4H Inhalation LC50 Mouse; 40000 mg/m³/4H Inhalation LC50 Mouse
Other LD50 or LC50 information = No information available

Product Information
LD50/oral/rat =
VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

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

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

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

LC50/Inhalation/mouse
VALUE-Vapor = No information available

Product code: T1116
Product name: TRICHLOROETHYLENE, DEGREASER
GRADE 7 / 13
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

**Symptoms**

**Skin Contact:** Causes skin irritation.

**Eye Contact:** Causes serious eye irritation. May cause corneal injury.

**Inhalation**
Can cause bronchial irritation, respiratory depression, difficulty breathing, pulmonary edema. Exposure to concentrations of 100 ppm to 1000 ppm can cause nausea, vomiting, visual disturbances, and can affect behavior/central nervous system/peripheral nervous system (general anesthetic, change in motor activity, headache, confusion, hallucinations, restlessness, somnolence, incoordination, memory loss, tremor, depression, lightheadedness, sleepiness, fatigue, lethargy, excited feeling/euphoria, irritability, dizziness, convulsions, spastic paralysis with or without sensory change, tingling, muscular discomfort, weakness in arms and legs). Inhalation of extremely high concentrations (over 1000 ppm) may cause lung irritation, unconsciousness, convulsions, coma, and death due to respiratory or cardiac failure. It may also affect the liver and kidneys.

**Ingestion**
Can cause digestive/gastrointestinal tract irritation, burning sensation in the throat, dysphagia, abdominal pain, nausea, vomiting, diarrhea. It can result in symptoms of intoxication and other central nervous system/peripheral nervous system symptoms similar to that of inhalation. It may cause liver and kidney damage (hepatitis, jaundice, increase in liver enzymes, acute tubular necrosis in kidneys, kidney failure). It may cause heart dysrhythmias and circulatory collapse.

**Aspiration hazard**
No information available

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

**Chronic Toxicity**
Inhalation/Ingestion: It can affect the central and peripheral nervous system (see acute inhalation and ingestion) and may cause liver and/or kidney damage. Skin: Prolonged or repeated skin contact may cause contact dermatitis, a skin allergy.

**Sensitization:**
No information available

**Mutagenic Effects:** Experiments with bacteria and/or yeast have shown mutagenic effects. May affect genetic material

**Carcinogenic effects:** May cause cancer.

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH - Carcinogens</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
</tr>
</thead>
</table>

**Reproductive toxicity**
No data is available

**Reproductive Effects:** May cause adverse reproductive effects.
**Developmental Effects:** No information available

**Product code:** T1116

**Product name:** TRICHLOROETHYLENE, DEGREASER GRADE
Teratogenic Effects: May cause birth defects (teratogenic effects)

Specific Target Organ Toxicity

STOT - single exposure: No information available
STOT - repeated exposure: No information available
Target Organs: No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

*Trichloroethylene - 79-01-6*

**Freshwater Algae Data:**
- 175 mg/L EC50 Pseudokirchneriella subcapitata 96 h
- 450 mg/L EC50 Desmodesmus subspicatus 96 h

**Freshwater Fish Species Data:**
- 31.4-71.8 mg/L LC50 Pimephales promelas 96 h flow-through 1
- 39-54 mg/L LC50 Lepomis macrochirus 96 h static 1

**Water Flea Data:**
- 2.2 mg/L EC50 Daphnia magna 48 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

**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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroethylene</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>U228</td>
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</table>

14. TRANSPORT INFORMATION

**DOT**
- **UN-No:** UN1710
- **Proper Shipping Name:** Trichloroethylene
- **Hazard Class:** 6.1
- **Subsidiary Risk:**
- **Packing Group:** III
- **ERG No:** 160
- **Marine Pollutant:** No data available

**Product code:** T1116
**Product name:** TRICHLOROETHYLENE, DEGREASER GRADE
## 14. TRANSPORT INFORMATION

| DOT RQ (lbs): | No information available |
| Symbol(s): | R3 |

### TDG (Canada)
- **UN-No:** UN1710
- **Proper Shipping Name:** Trichloroethylene
- **Hazard Class:** 6.1
- **Subsidiary Risk:** No information available
- **Packing Group:** III
- **Description:** No information available

### ADR
- **UN-No:** UN1710
- **Proper Shipping Name:** Trichloroethylene
- **Hazard Class:** 6.1
- **Packing Group:** III
- **Subsidiary Risk:** No information available
- **Classification Code:** No information available
- **Description:** No information available
- **CEFIC Tremcard No:** No information available

### IMO / IMDG
- **UN-No:** UN1710
- **Proper Shipping Name:** Trichloroethylene
- **Hazard Class:** 6.1
- **Subsidiary Risk:** No information available
- **Packing Group:** III
- **Description:** No information available
- **IMDG Page:** No information available
- **Marine Pollutant:** No information available
- **EMS:** F-A
- **MFAG:** No information available
- **Maximum Quantity:** No information available

### RID
- **UN-No:** UN1710
- **Proper Shipping Name:** Trichloroethylene
- **Hazard Class:** 6.1
- **Subsidiary Risk:** No information available
- **Packing Group:** III
- **Classification Code:** No information available
- **Description:** No information available

### ICAO
- **UN-No:** UN1710
- **Proper Shipping Name:** Trichloroethylene
- **Hazard Class:** 6.1
- **Subsidiary Risk:** No information available
- **Packing Group:** III
- **Description:** No information available

### IATA
- **UN-No:** UN1710
- **Proper Shipping Name:** Trichloroethylene
- **Hazard Class:** 6.1

**Product code:** T1116

**Product name:** TRICHLOROETHYLENE, DEGREASER

**GRADE**
14. TRANSPORT INFORMATION

Subsidiary Risk: No information available
Packing Group: III
ERG Code: 6A
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS (2)-105</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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</thead>
<tbody>
<tr>
<td>Trichloroethylene</td>
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<td>Present KE-13680</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
<td>Present 201-167-4</td>
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</tbody>
</table>

U.S. Regulations

Trichloroethylene

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 1890
New Jersey (EHS) List: 1890 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
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:
= 1 lb RQ
= 100 lb RQ
Louisiana Reportable Quantity List for Pollutants: Listed
California Directors List of Hazardous Substances: Present

FDA - Direct Food Additives 21 CFR 173.290
FDA - 21 CFR - Total Food Additives 172.560 173.290 175.105 177.1960 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:
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm (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>Trichloroethylene</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>Trichloroethylene</td>
<td>= 45.4 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>Trichloroethylene</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Product code: T1116
Product name: TRICHLOROETHYLENE, DEGREASER
GRADE
Canada

WHMIS hazard class:
D1B Toxic materials
D2A Very toxic materials
D2B Toxic materials

Trichloroethylene
D1B D2A D2B

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>Trichloroethylene</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>Trichloroethylene</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>Trichloroethylene</td>
<td>Present</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

EU Classification

R-phrase(s)
R45 - May cause cancer.
R36/38 - Irritating to eyes and skin.
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.
S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroethylene</td>
<td>Xi; R36/38</td>
<td>No information</td>
<td>S53 S45 S61</td>
</tr>
<tr>
<td></td>
<td>Carc.Cat.2; R45</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R52-53</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>R67</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Muta.Cat.3; R68</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:
T - Toxic
T+ - Very toxic.

Product code: T1116
Product name: TRICHLOROETHYLENE, DEGREASER
GRADE
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.