

SAFETY DATA SHEET

Preparation Date: No data available

Revision Date: 03/18/2015

Revision Number: G1

Product identifier

Product code: D2161
Product Name: TRANS-1,2-DICHLOROETHYLENE

Other means of identification

Synonyms: trans-Acetylene dichloride; trans-Dichloroethylene; (E)-1,2-Dichloroethene; (E)-1,2-Dichloroethylene
CAS #: 156-60-5
RTECS # KV9400000
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 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)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 2

Label elements

Danger

Hazard statements

Harmful if swallowed
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation. May cause drowsiness or dizziness
Highly flammable liquid and vapor



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Harmful to aquatic life with long lasting effects

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
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
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
Wear protective gloves

Precautionary Statements - Response

Specific treatment (see .? on this label)
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 you feel unwell.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
trans-1,2-Dichloroethylene 156-60-5	156-60-5	100	*

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**Symptoms**

Causes eye irritation. Causes skin irritation. May cause irritation of respiratory tract. Harmful if swallowed.

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. Alcohol-resistant 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:**

Carbon oxides

Specific hazards:

Flammable
May be ignited by heat, sparks or flames
Container explosion may occur under fire conditions or when heated
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)
When heated to decomposition it emits toxic fumes
Reaction with solid caustic alkalis or their concentrated solutions produces chloroacetylene gas that ignites spontaneously in air. May release explosive chloroacetylene by the contact with copper or copper alloys. Forms shock-sensitive explosive mixtures with dinitrogen tetroxide.

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. Dike fire-control water for later disposal; do not scatter the material.

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. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. 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. Use spark-proof tools and explosion-proof equipment. 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.

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. 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

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. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. 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. Store at room temperature in the original container. Store away from incompatible materials. Keep away from heat and sources of ignition. Air sensitive. Moisture sensitive. Sensitive to light. Store in light-resistant containers.

Incompatible Materials:

Alkalis. Metals. Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****National occupational exposure limits****United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
trans-1,2-Dichloroethylene 156-60-5	None	None	= 200 ppm TWA	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
trans-1,2-Dichloroethylene 156-60-5	= 200 ppm TWA = 793 mg/m ³ TWA	= 200 ppm TWA	200 ppm TWA 790 mg/m ³ TWA	None

Australia and Mexico

Components	Australia	Mexico
trans-1,2-Dichloroethylene 156-60-5	None	None

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

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Physical state: Liquid	Appearance: No information available	Color: Colorless.
Odor: Chloroform-like. Ethereal. Pleasant. Sweetish.	Taste No information available	Molecular/Formula weight: 96.94
Formula: C ₂ H ₂ Cl ₂	Flammability: No information available	Flash point (°C): No data available
Flashpoint (°C/°F): 2.22°C/36.0°F	Flash Point Tested according to: Closed cup	Lower Explosion Limit (%): 9.7
Upper Explosion Limit (%): 12.8	Autoignition Temperature (°C/°F): 460°C/860°F	pH: No information available
Melting point/range(°C/°F): -50°C/-58°F to -48°C/-54.4°F	Boiling point/range(°C/°F): 47°-49°C/116.6°-120.2°F	Decomposition temperature(°C/°F): No information available
Bulk density: No information available	Specific gravity: 1.2565	Vapor pressure @ 20°C (kPa): 44.1
Density (g/cm³): No information available	Evaporation rate: No information available	Vapor density: 3.34-3.67
VOC content (g/L): No information available	Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): 2.1
Viscosity: No information available	Miscibility: No information available	Solubility: Soluble in Acetone Soluble in Alcohol Soluble in Benzene Soluble in Chloroform Soluble in diethyl ether Very slightly soluble in cold water Solubility in Water: 0.67g/ml @ 25°C

10. STABILITY AND REACTIVITY

Reactivity

Reactive with alkalis

Reactive with metals

Reactive with oxidizing agents

Reaction with solid caustic alkalis or their concentrated solutions produces chloroacetylene gas that ignites spontaneously in air.

Air and light sensitive. Moisture sensitive. Decomposes slowly on exposure to air, light and moisture.

Prolonged contact with air can form organic peroxides.

Violent reaction with difluoromethylene dihypofluorite.

Forms shock-sensitive explosive mixtures with dinitrogen tetraoxide.

Reacts violently with dinitrogen oxide, potassium hydroxide, sodium, sodium hydroxide.

Chemical stability

Stability:

Stable under recommended storage conditions

Possibility of Hazardous Reactions:

Hazardous polymerization does not occur

Conditions to avoid:

Heat. Ignition sources. Incompatible materials. Exposure to air. Exposure to moisture. Exposure to light.

Incompatible Materials:

Alkalis. Metals. Oxidizing agents.

Product code: D2161

Product name: TRANS-1,2-DICHLOROETHYLENE

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Hazardous decomposition products: No information available

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

trans-1,2-Dichloroethylene - 156-60-5

LD50/oral/rat = 1235 mg/kg Oral LD50 Rat

LD50/oral/mouse = 2122 mg/kg Oral LD50 Mouse

LD50/dermal/rat = No information available

LD50/dermal/rabbit = >5 g/kg Dermal LD50 Rabbit

LC50/inhalation/rat = 24100 ppm/4h Inhalation LD50 Rat

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 1235mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = 2122mg/kg

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = >5g/kg

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = 24100ppm (4-hr)

VALUE-Gas = No information available

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. It can cause defatting of skin, and dermatitis. It can be absorbed through the skin and cause systemic effects such as anorexia/weight loss.

Eye Contact: Causes serious eye irritation. May cause corneal clouding.

Inhalation
Ingestion May cause irritation of respiratory tract.
Harmful if swallowed. May cause nausea. May affect behavior/central nervous system (somnolence, ataxia, tremor, headache, muscle weakness).

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 ingestion or inhalation may the liver and kidneys (liver and kidney damage/failure, hematuria, proteinuria, oliguria, renal tubular necrosis).

Sensitization: No information available

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

Carcinogenic effects: Not considered carcinogenic

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
trans-1,2-Dichloroethylene	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available

Reproductive Effects: May cause adverse reproductive effects based on animal data.
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available
STOT - repeated exposure No information available
Target Organs: Central nervous system. Eyes. Kidneys. Liver. Respiratory system. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

trans-1,2-Dichloroethylene - 156-60-5

Freshwater Fish Species Data: 135 mg/L LC50 *Lepomis macrochirus* 96 h static 1

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

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
trans-1,2-Dichloroethylene	None	None	None	U079

14. TRANSPORT INFORMATION

DOT

UN-No: UN1150
Proper Shipping Name: 1,2-Dichloroethylene
Hazard Class: 3
Subsidiary Risk:
Packing Group: II
ERG No: 130P
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Symbol(s): R4

TDG (Canada)

UN-No: UN1150
Proper Shipping Name: 1,2-Dichloroethylene
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

ADR

UN-No: UN1150
Proper Shipping Name: 1,2-Dichloroethylene
Hazard Class: 3
Packing Group: II
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1150
Proper Shipping Name: 1,2-Dichloroethylene
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

14. TRANSPORT INFORMATION

IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-E
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1150
Proper Shipping Name: 1,2-Dichloroethylene
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1150
Proper Shipping Name: 1,2-Dichloroethylene
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
Description: No information available

IATA

UN-No: UN1150
Proper Shipping Name: 1,2-Dichloroethylene
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 3L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>trans-1,2-Dichloroethylene</i>	Present	Present KE-10123	Present	Present (2)-103	Present	Present	Present 205-860-2

U.S. Regulations

trans-1,2-Dichloroethylene

Massachusetts RTK: Present
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
New York Release Reporting - List of Hazardous Substances:
 = 1 lb RQ
 = 1000 lb RQ
Louisiana Reportable Quantity List for Pollutants: Listed
California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (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)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
trans-1,2-Dichloroethylene	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
trans-1,2-Dichloroethylene	= 1000 lb final RQ	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
trans-1,2-Dichloroethylene	Not Applicable	Not Applicable

Canada**WHMIS hazard class:**

B2 Flammable liquid

D2B Toxic materials

trans-1,2-Dichloroethylene

B2 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.

Inventory

Components	Canada (DSL)	Canada (NDSL)
trans-1,2-Dichloroethylene	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
trans-1,2-Dichloroethylene	Not listed	Not listed

EU Classification**R-phrases)**

R11 - Highly flammable.

R20 - Harmful by inhalation.

R52 - Harmful to aquatic organisms.

R53 - May cause long-term adverse effects in the aquatic environment.

S -phrase(s)

S 7 - Keep container tightly closed.

S16 - Keep away from sources of ignition - No smoking.

S29 - Do not empty into drains.

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

Components	Classification	Concentration Limits:	Safety Phrases
trans-1,2-Dichloroethylene	F; R11 Xn; R20 R52-53	25%<=C: Xn; R20-52/53 12.5%<=C<25%: Xn; R20	S2 S7 S16 S29 S61

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

Indication of danger:

F - Highly flammable.

T - Toxic

16. OTHER INFORMATION

16. OTHER INFORMATION

Revision Date: 03/18/2015
Prepared by: Sonia Owen

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