 SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name: 1,1-Dichloroethene
Product Number: 48526
Brand: Supelco
Index-No.: 602-025-00-8
CAS-No.: 75-35-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

 SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 1), H224
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 4), H332
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Nose, H372
Specific target organ toxicity - repeated exposure, Oral (Category 2), Liver, H373
Short-term (acute) aquatic hazard (Category 2), H401
Long-term (chronic) aquatic hazard (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Supelco - 48526
Pictogram

Signal Word

Danger

Hazard statement(s)
H224 Extremely flammable liquid and vapor.
H301 Toxic if swallowed.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.
H372 Causes damage to organs (Nose) through prolonged or repeated exposure if inhaled.
H373 May cause damage to organs (Liver) through prolonged or repeated exposure if swallowed.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
May form explosive peroxides.

Supelco - 48526
SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms: 1,1-Dichloroethylene
Vinylidene chloride

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1-Dichloroethene</td>
<td>Flam. Liq. 1; Acute Tox. 4; Eye Irrit. 2A; Carc. 2; STOT RE 1; STOT RE 2; Aquatic Acute 2; Aquatic Chronic 3; H224, H302, H332, H319, H351, H372, H373, H401, H412</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

In case of eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed
If swallowed: give water to drink (two glasses at most). Seek medical advice immediately.

In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.
4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides
Hydrogen chloride gas
Combustible.
Pay attention to flashback.
Vapors are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

**Advice on protection against fire and explosion**
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

**Hygiene measures**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
For precautions see section 2.2.

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

**Storage conditions**
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

**Storage stability**
Recommended storage temperature
2 - 8 °C
Air and moisture sensitive. Store under inert gas.

**Storage class**
Storage class (TRGS 510): 3: Flammable liquids

### 7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

**SECTION 8: Exposure controls/personal protection**

#### 8.1 Control parameters

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1-Dichloroethene</td>
<td>75-35-4</td>
<td>TWA</td>
<td>5 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td>Potential Occupational Carcinogen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>1 ppm 4 mg/m3</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
</tbody>
</table>

#### 8.2 Exposure controls

**Appropriate engineering controls**
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses
**Body Protection**  
Flame retardant antistatic protective clothing.

**Respiratory protection**  
required when vapours/aerosols are generated.  
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**  
Do not let product enter drains. Risk of explosion.

---

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| a) Appearance | Form: liquid, clear  
Color: colorless |
| b) Odor | No data available |
| c) Odor Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: -122 °C (-188 °F) - lit. |
| f) Initial boiling point and boiling range | 30 - 32 °C 86 - 90 °F - lit. |
| g) Flash point | -23.0 °C (-9.4 °F) - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 15.5 %(V)  
Lower explosion limit: 6.5 %(V) |
| k) Vapor pressure | 667.3 hPa at 20.0 °C (68.0 °F)  
2,137.4 hPa at 55.0 °C(131.0 °F) |
| l) Vapor density | No data available |
| m) Density | 1.213 g/cm3 at 20 °C (68 °F) - lit.  
Relative density | No data available |
| n) Water solubility | 2.5 g/l at 20.5 °C (68.9 °F) - soluble |
| o) Partition coefficient: n-octanol/water | No data available |
| p) Autoignition temperature | 520.0 °C (968.0 °F) |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
Vapors may form explosive mixture with air.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
Violent reactions possible with:
- Amines
- Alkaline earth metals
- Metallic salts
- Strong oxidizing agents
- Strong bases
- Amides
- Chlorosulfonic acid
- Potassium hydroxide
- Powdered metals
- Nitric acid
- Fuming sulfuric acid
Risk of explosion with:
- Alkali metals
- Ozone
- Perchloryl fluoride
- Peroxides
- Polymerisation initiators
- Oxygen

10.4 Conditions to avoid
Warming.

10.5 Incompatible materials
Various plastics, Strong oxidizing agents

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
- LD50 Oral - Rat - 1,500 mg/kg
- Acute toxicity estimate Inhalation - 4 h - 11.1 mg/l - vapor
(Expert judgment)  
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)  
Dermal: No data available  

**Skin corrosion/irritation**  
Skin - reconstructed human epidermis (RhE)  
Result: No skin irritation - 3 - 60 min  

**Serious eye damage/eye irritation**  
Eyes - Bovine cornea  
Result: Causes serious eye irritation - 10 min  
(OECD Test Guideline 437)

**Respiratory or skin sensitization**  
Local lymph node assay (LLNA) - Mouse  
Result: negative  
(OECD Test Guideline 429)

**Germ cell mutagenicity**  
Based on available data the classification criteria are not met.

Test Type: comet assay  
Species: Rat  
Cell type: Bone marrow  
Application Route: inhalation (vapor)  
Method: OECD Test Guideline 489  
Result: positive

Test Type: Micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Inhalation  
Method: OECD Test Guideline 474  
Result: negative

Test Type: Micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.  
Species: Rat  
Cell type: Implant  
Application Route: Inhalation  
Method: OECD Test Guideline 478  
Result: negative

**Carcinogenicity**  
Suspected of causing cancer.  
IARC: 2B - Group 2B: Possibly carcinogenic to humans (1,1-Dichloroethene)

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is
Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Inhalation - Causes damage to organs through prolonged or repeated exposure.
- Nose
Oral - May cause damage to organs through prolonged or repeated exposure.
- Liver

Aspiration hazard
No data available

11.2 Additional Information
Repeate d dose toxicity - Rat - female - Oral - 90 Days - NOAEL (No observed adverse effect level) - 9 mg/kg - LOAEL (Lowest observed adverse effect level) - 14 mg/kg
Remarks: (ECHA)

RTECS: KV9275000
Nausea, Headache, Vomiting, Dizziness, Drowsiness, Confusion, Incoordination, Central nervous system depression
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption:

Headache
somnolence
Unconsciousness
Coma

After absorption of large quantities:

Damage to:

Liver
Kidney
Lungs
Central nervous system

This substance should be handled with particular care.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

SECTION 12: Ecological information
12.1 Toxicity
Toxicity to fish - flow-through test LC50 - Pimephales promelas (fathead minnow) -
Supelco - 48526
108 mg/l - 96 h
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - 37 mg/l - 48 h
(OECD Test Guideline 202)
Remarks: (ECHA)

Toxicity to algae
static test EC50 - Chlamydomonas reinhardtii (green algae) - 9.12 mg/l - 72 h
Remarks: (ECHA)

Toxicity to bacteria
EC50 - Pseudomonas putida - > 2,000 mg/l - 17 h
Remarks: (IUCLID)

12.2 Persistence and degradability
Biodegradability
Result: 0 % - Not readily biodegradable.
(OECD Test Guideline 301D)

12.3 Bioaccumulative potential
Bioaccumulation
Cyprinus carpio (Carp) - 6 Weeks
at 25 °C - 0.5 mg/l(1,1-Dichloroethene)
Bioconcentration factor (BCF): 2.5 - 6.4
(OECD Test Guideline 305C)

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.
SECTION 14: Transport information

**DOT (US)**
- UN number: 1303  
- Class: 3  
- Packing group: I  
- Proper shipping name: Vinylidene chloride, stabilized  
- Reportable Quantity (RQ): 100 lbs  
- Reportable Quantity (RQ): 100 lbs  
- Marine pollutant: yes  
- Poison Inhalation Hazard: No

**IMDG**
- UN number: 1303  
- Class: 3  
- Packing group: I  
- EMS-No: F-E, S-D  
- Proper shipping name: VINYLIDENE CHLORIDE, STABILIZED  
- Marine pollutant: yes  
- Marine pollutant: yes

**IATA**
- UN number: 1303  
- Class: 3  
- Packing group: I  
- Proper shipping name: Vinylidene chloride, stabilized

SECTION 15: Regulatory information

**SARA 302 Components**
- This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**
- The following components are subject to reporting levels established by SARA Title III, Section 313:
  - 1,1-Dichloroethene  
    - CAS-No.: 75-35-4  
    - Revision Date: 2021-01-12

**SARA 311/312 Hazards**
- Fire Hazard, Acute Health Hazard, Chronic Health Hazard
- Reportable Quantity: D029 lbs

**Massachusetts Right To Know Components**
- 1,1-Dichloroethene  
  - CAS-No.: 75-35-4  
  - Revision Date: 2021-01-12

**Pennsylvania Right To Know Components**
- 1,1-Dichloroethene  
  - CAS-No.: 75-35-4  
  - Revision Date: 2021-01-12

**California Prop. 65 Components**
- which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.1,1-Dichloroethene  
  - CAS-No.: 75-35-4  
  - Revision Date: 2017-12-29
SECTION 16: Other information

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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