SAFETY DATA SHEET

Revision Date  23-Jan-2018
Revision Number  3

1. Identification

Product Name  4-Vinylbenzyl chloride
Cat No. : AC422520000; AC422520250; AC422521000; AC422525000
Synonyms Chloromethylstyrene
Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.
Details of the supplier of the safety data sheet
Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 / Europe:001-703-527-3887

2. Hazard(s) 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>Acute oral toxicity</td>
<td>Category 4</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Category 1 B</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

Label Elements

Signal Word
Danger

Hazard Statements
Causes severe skin burns and eye damage
May cause an allergic skin reaction
Harmful if swallowed or in contact with skin
4-Vinylbenzyl chloride

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace

Response
Immediately call a POISON CENTER or doctor/physician

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion
Rinse mouth
Do NOT induce vomiting

Storage
Store locked up

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

Hazards not otherwise classified (HNOC)
None identified

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene, 1-(chloromethyl)-4-ethenyl-</td>
<td>1592-20-7</td>
<td>90</td>
</tr>
</tbody>
</table>

4. First-aid measures

Eye Contact
Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Inhalation
Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required.

Ingestion
Do NOT induce vomiting. Call a physician immediately.

Most important symptoms and effects
Causes burns by all exposure routes. May cause allergic skin reaction. Difficulty in breathing. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of
perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing; Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Notes to Physician
Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media
Carbon dioxide (CO₂). Dry chemical. Chemical foam.

Unsuitable Extinguishing Media
No information available

Flash Point
105 °C / 221 °F

Method -
No information available

Autoignition Temperature
No information available

Explosion Limits
Upper No data available
Lower No data available

Sensitivity to Mechanical Impact
No information available

Sensitivity to Static Discharge
No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Protective Equipment and Precautions 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
Ensure adequate ventilation. Use personal protective equipment as required. See Section 12 for additional Ecological Information.

Environmental Precautions
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Do not let this chemical enter the environment.

Methods for Containment and Clean Up

7. Handling and storage

Handling
Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not ingest. If swallowed then seek immediate medical assistance. Handle product only in closed system or provide appropriate exhaust ventilation. Wash thoroughly after handling.

Storage

8. Exposure controls / personal protection

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
4-Vinylbenzyl chloride

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>Appearance</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>105 °C / 221 °F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper</td>
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</tr>
<tr>
<td>Lower</td>
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</tr>
<tr>
<td>Vapor Pressure</td>
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<td>Vapor Density</td>
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<td>Specific Gravity</td>
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<tr>
<td>Solubility</td>
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<tr>
<td>Partition coefficient; n-octanol/water</td>
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<tr>
<td>Autoignition Temperature</td>
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<tr>
<td>Decomposition Temperature</td>
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<td>Viscosity</td>
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<td>Molecular Weight</td>
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10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Reactive Hazard</td>
<td>None known, based on information available</td>
</tr>
<tr>
<td>Stability</td>
<td>Stable under normal conditions. Air sensitive. Light sensitive.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Temperatures above .71° C. Exposure to air. Exposure to light. Incompatible products.</td>
</tr>
<tr>
<td>Incompatible Materials</td>
<td>Acids, Bases, Strong oxidizing agents, Metals</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen chloride gas</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Hazardous polymerization may occur.</td>
</tr>
</tbody>
</table>
11. Toxicological information

Acute Toxicity

Product Information
- Oral LD50: Category 4. ATE = 300 - 2000 mg/kg.
- Dermal LD50: Category 4. ATE = 1000 - 2000 mg/kg.
- Vapor LC50: Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information
- Toxicologically Synergistic Products: No information available

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

Irritation: No information available

Sensitization: May cause sensitization by skin contact

Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
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</thead>
<tbody>
<tr>
<td>Benzene, 1-(chloromethyl)-4-ethenyl-</td>
<td>1592-20-7</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects: No information available.

Reproductive Effects: No information available.

Developmental Effects: No information available.

Teratogenicity: No information available.

STOT - single exposure: None known

STOT - repeated exposure: None known

Aspiration hazard: No information available

Symptoms / effects, both acute and delayed
- Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.
- Possible perforation of stomach or esophagus should be investigated.
- Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.
- Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.
- Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Endocrine Disruptor Information: No information available

Other Adverse Effects: The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
- Do not empty into drains.

Persistence and Degradability: No information available

Bioaccumulation/ Accumulation: No information available.

Mobility: No information available.
13. Disposal considerations

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

<table>
<thead>
<tr>
<th>DOT</th>
<th></th>
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<tbody>
<tr>
<td>UN-No</td>
<td>UN2922</td>
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<tr>
<td>Hazard Class</td>
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<td></td>
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<tr>
<td>Subsidiary Hazard Class</td>
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<tr>
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<td>UN2922</td>
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<tr>
<td>Hazard Class</td>
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<tr>
<td>Subsidiary Hazard Class</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
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<td>IATA</td>
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<td>UN-No</td>
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<tr>
<td>Proper Shipping Name</td>
<td>CORROSIVE LIQUID, TOXIC, N.O.S.*</td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Packing Group</td>
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<td>IMDG/IMO</td>
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<td>UN-No</td>
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<td>Corrosive liquid, toxic, n.o.s.</td>
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<tr>
<td>Hazard Class</td>
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<tr>
<td>Subsidiary Hazard Class</td>
<td>6.1</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. Regulatory information

United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active/Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene, 1-(chloromethyl)-4-ethenyl-</td>
<td>1592-20-7</td>
<td>X</td>
<td>ACTIVE</td>
<td></td>
</tr>
</tbody>
</table>

Legend:

TSCA - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA 12(b) - Notices of Export
Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene, 1-(chloromethyl)-4-ethenyl-</td>
<td>1592-20-7</td>
<td>X</td>
<td>-</td>
<td>216-471-2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>2012-3-5359</td>
</tr>
</tbody>
</table>

U.S. Federal Regulations

SARA 313
Not applicable

SARA 311/312 Hazard Categories
See section 2 for more information

CWA (Clean Water Act)
Not applicable
16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date
23-Jan-2018

Print Date
23-Jan-2018

Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of SDS