SAFETY DATA SHEET
METHYLENE CHLORIDE

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

1.1 Product Name
METHYLENE CHLORIDE

(a) Product identifier used on the label
METHYLENE CHLORIDE

Trade Names / Synonyms (Other means of identification)
MC; Dichloromethane (DCM); Methylene dichloride; Methylene bichloride; Methane dichloride

CAS Number
79-09-2

1.2 Manufacturer/supplier
SRF Limited, D-2/1 GIDC Phase-II, PCPIR, Dahej, Tal. Vagra, Dist. Bharuch 392 130, Gujarat (India)
Phone no.-02641-289-201/202

Further information obtainable from:
Hamid Hasan Sayyad
e-mail: Hamid.Sayyad@srf.com
Mobile no.-09978986664

1.3 Emergency Phone number

Emergency Contact
Mr Balwada Ashish +91-9099002602
Primary Contact
Mr Fadadu Jignesh +91-9687694057
SDS Contact
Mr Sharma Anil Kumar +91-9687694067

Recommended use of the chemical and restrictions on use:

Identified Uses: Solvent
Uses advised against: Do not use product for anything outside of the above specified uses

2. HAZARDS IDENTIFICATION

Skin Corrosion/irritation Category 2
Serious Eye Damage/Eye Irritation Category 2
Carcinogenicity Category 2A (Refer ACS)
Specific target organ toxicity (single exposure) Category 3

Target Organs - Central nervous system (CNS)
Specific target organ toxicity - (repeated exposure) Category 2
Target Organs - Liver, Kidney, Blood.
2a) Label elements
GHS classification in accordance with 29 CFR 1910.1200

Single word  Danger

2b) Hazard Statements (S)
- H-315-Causes skin irritation
- H-336-May cause drowsiness or dizziness
- H-319-Causes serious eye irritation
- H-351-Suspected of causing cancer
- H-372-May cause damage to organs through prolonged or repeated exposure

2C) Precautionary statement(s)
P-201: Obtain special instructions before use
P-202: Do not handle until all safety precautions have been read and understood
P-281: Use personal protective equipment as required
P-264-Wash face, hands and any exposed skin thoroughly after handling
P-280-Wear protective gloves/protective clothing/eye protection/face protection
P-284-Do not breathe dust/fume/gas/mist/vapours/spray
P-271-Use only outdoors or in a well-ventilated area
Response  IF exposed or concerned: Get medical attention/advice

Inhalation  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin  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
Eyes  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 attention/advice
Storage  Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal  Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>Formula</th>
<th>CAS No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHYLENE CHLORIDE</td>
<td>MC; Dichloromethane (DCM); Methylene dichloride; Methylene dichloride; Methane dichloride</td>
<td>CH2CL2</td>
<td>79-09-3</td>
<td>100%</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

4.1-Description of first aid measures

General Advice: If symptoms persist, call a physician.

Inhalation: If inhaled, Move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Skin contact: Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Ingestion: Clean mouth with water and drink afterwards plenty of water.

Self-protection of first aider: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Notes to physician: Treat symptomatically

4.2-Most Important Symptoms And Effects, Both Acute And Delayed

None reasonably foreseeable. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

4.3-Indication of any immediate medical attention and special treatment needed

No data available

5. FIRE FIGHTING MEASURES

5.1-Extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Suitable extinguishing media: No information available

Flash Point Method: No information available

Auto ignition Temperature: 556 °C / 1032.8 °F

Explosion Limits: Upper 23%, Lower 12%

5.2-Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours. Keep product and empty container away from heat and sources of ignition.
5.3-Advice for fire-fighters

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Combustion by-products include phosgene and hydrogen chloride gases. Structural firefighters’ clothing provides only limited protection to the combustion products of this material.

6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

- **Safeguards (Personnel)**: Use personal protective equipment. Ensure adequate ventilation.
- **Environmental precautions**: Should not be released into the environment. In accordance with local and national regulations.
- **Methods and material for containment and cleaning up**: Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.
- **Accident Release Measures**: Self-contained breathing apparatus (SCBA) is required if a large release occurs. Avoid open flames and high temperatures.

7. HANDLING & STORAGE

7.1-Precautions For Safe Handling (Personal)

Keep in a tightly closed container at room temperature, protect against direct sunlight. Protect against physical damage. Isolate from any source of heat or ignition. Outside or detached storage is recommended. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product. To minimize decomposition, all storage containers should be galvanized or lined with a phenolic coating. This material may corrode plastic and rubber. Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Odour Threshold: 205 - 307 ppm. The odour threshold only serves as a warning of exposure; not smelling it does not mean you are not being exposed.

7.2-Precautions For Safe Handling (Personal)

Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Ensure adequate ventilation.
7.3-Conditions for safe storage, including any incompatibilities:
Avoid contact with eyes and skin. Avoid breathing vapour. Use with adequate ventilation and protective gear as listed. Make sure containers are properly grounded before use or transfer of material. Do not use near fire, sparks, or flame.

7.4-Storage period: No data available

7.5-Storage temperature Store in a cool, well-ventilated area.

8. EXPOSURE CONTROL / PERSONAL PROTECTION CONTROL PARAMETERS

8.1-Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>TWA: 50 ppm</td>
<td>(Vacated) TWA: 500 ppm (Vacated) STEL: 2000 ppm (Vacated) Ceiling: 1000 ppm</td>
<td>IDLH: 2300 ppm TWA: 100 ppm TWA: 330 mg/m3 STEL: 500 ppm STEL: 1740 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

8.2-Exposure controls

Engineering controls
A system of local and/or general exhaust is recommended to keep employee exposures below the airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices.

Personal protective equipment

Respiratory protection
If the exposure limit is exceeded, wear a supplied air, full-face piece respirator, air lined hood, or full-face piece self-contained breathing apparatus. The cartridges recommended for this material have a predicted service of less than 30 minutes at concentrations of ten times (10x) the exposure limits. Actual service life will vary considerably, depending on concentration levels, temperature, humidity, and work rate. This substance has poor warning properties.

Skin and body protection
Wear impervious protective clothing, including boots, gloves, lab coat, apron or overalls, as appropriate, to prevent skin contact. Neoprene is a recommended material for personal protective equipment. Natural rubber and polyvinyl chloride ARE NOT

Eye /face protection
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area

Protective measures
When using do not smoke. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Additional Recommendations
Do not use closed circuit rebreathing system employing soda lime or other carbon dioxide absorber because of formation of toxic compounds capable of producing cranial nerve paralysis.
9. PHYSICAL & CHEMICAL PROPERTIES

9.1-Information on basic physical and chemical properties

Appearance: Colourless

Physical state: Liquid

Molecular Formula: CH2Cl2

Molecular Weight: 84.93

Colour: Clear, colourless liquid

Odour: Chloroform-like odour

pH: Not pertinent

Freezing point: -97°C (-143°F)

Initial boiling point and boiling range: 39.8 °C (104°F)

Flash point: No information available

Evaporation rate: 27.5

Upper/lower flammability or explosive limits: UEL=23 vol%, LEL=12 vol%

Vapour pressure: 350 @ 20°C (68°F) (mm Hg)

Vapour density: 2.93 (Air = 1.0)

Specific Gravity: 1.33

Water solubility: 1.32 gm/100 gm water @ 20°C

Auto-ignition temperature: 556 °C / 1032.8 °F

Decomposition temperature: No data available

Viscosity: No information available

10. STABILITY & REACTIVITY

10.1-Reactivity: None known, based on information available

10.2-Chemical stability: Stable under ordinary conditions of use and storage.

10.3-Possibility of hazardous reactions: None under normal processing

10.4-Conditions to avoid: The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen, the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions.
11. TOXICOLOGICAL INFORMATION

11.1-Information on toxicological effects

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>&gt; 1600 mg/kg ( Rat )</td>
<td>&gt; 2000 mg/kg ( Rat )</td>
<td>53 mg/L ( Rat ) 6 h</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>76000 mg/m3 ( Rat ) 4 h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>75-09-2</td>
<td>Group 2A</td>
<td>Reasonably Anticipated</td>
<td>A3</td>
<td>A3</td>
</tr>
</tbody>
</table>

Strong oxidizers, strong caustics, plastics, rubber, nitric acid, water + heat, and chemically active metals, such as aluminium and magnesium powder, sodium, potassium, and lithium. Avoid contact with open flames and electrical arcs. Liquid methylene chloride will attack some forms of plastics, rubber, and coatings.

Emits highly toxic fumes of phosgene when heated to decomposition. Decomposes in a flame or hot surface to form toxic gas phosgene and corrosive mists of hydrochloric acid. Carbon dioxide and carbon monoxide may form when heated to decomposition.

10.6-Hazardous decomposition products

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

Skin irritation
Skin sensitization
Carcinogenicity

Toxicologically Synergistic
No information available

Reproductive toxicity
Mutagenicity
Teratogenicity

No information available

IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic effects have occurred in microorganisms
No information available
No information available
12. ECOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>EC50: &gt;660 mg/L/96h</td>
<td>Pimephales promelas: LC50: 193 mg/L/96h</td>
<td>EC50: 1 mg/L/24 h</td>
<td>EC50: 140 mg/L/48h</td>
</tr>
</tbody>
</table>

12.1-Toxicity

Persistence and Degradability: Persistence is unlikely based on information available.
Bioaccumulation/ Accumulation: No information available.
Mobility: Will likely be mobile in the environment due to its volatility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>1.25</td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

13.1-Waste Treatment Methods

Product: 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.

<table>
<thead>
<tr>
<th>Component</th>
<th>RCRA - U Series Wastes</th>
<th>RCRA - P Series Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride - 75-09-2</td>
<td>U080</td>
<td></td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>Regulation</th>
<th>DOT</th>
<th>IATA</th>
<th>IMDG/IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1-UN number</td>
<td>UN1513</td>
<td>UN1513</td>
<td>UN1513</td>
</tr>
<tr>
<td>14.2-UN proper shipping name</td>
<td>DICHLOROMETHANE</td>
<td>DICHLOROMETHANE</td>
<td>DICHLOROMETHANE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14.3-Transport hazard class(es)/Labelling Number</th>
<th>6.1</th>
<th>6.1</th>
<th>6.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.4-Packing Group</td>
<td>III</td>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

All of the components in the product are on the following Inventory lists: X = listed
International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA/DSL/PICCS/ENSS/AICS/IECSC/KECL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>NLP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>X (Listed)</td>
<td>-</td>
<td>200-839-9</td>
<td>-</td>
</tr>
<tr>
<td>TSCA</td>
<td>Component</td>
<td>CAS-No</td>
<td>Weight %</td>
<td>SARA 313 - Threshold Values %</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>--------</td>
<td>----------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>SARA 313 Regulated Chemical(s)</td>
<td>Methylene chloride</td>
<td>75-09-2</td>
<td>&gt;99.5</td>
<td>0.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CWA (Clean Water Act)</th>
<th>Component</th>
<th>CWA - Hazardous Substances</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAA (Clean Air Act)</th>
<th>Component</th>
<th>HAPS Data Substances</th>
<th>Class 1 Ozone Depletors</th>
<th>Class 1 Ozone Depletors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OSHA Occupational Safety and Health Administration</th>
<th>Component</th>
<th>Specifically Regulated Chemicals Substances</th>
<th>Highly Hazardous Chemicals Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>125 ppm STEL 12.5 ppm Action Level 25 ppm TWA</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs Quantities</th>
<th>CERCLA EHS RQs Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>1000 lb 1lb</td>
<td>-</td>
</tr>
</tbody>
</table>

California Proposition 65

This product contains the following proposition 65 chemicals

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>California Prop. 65</th>
<th>Prop 65 NSRL</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>75-09-2</td>
<td>Carcinogen</td>
<td>200 μg/day</td>
<td>Carcinogen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50 μg/day</td>
<td></td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylene chloride</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation

Reportable Quantity (RQ): Y

DOT Marine Pollutant: N

DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

This product does not contain any DHS chemicals.

Mexico - Grade

No information available

16. OTHER INFORMATION

Prepared By: EHS Department - Fluorochemicals Business SRF-Dahej
Revision date: 28-Jun-18

Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.