Product Safety Summary Sheet

DuPont™ 1,1-Dichloro-1-fluoroethane

Chemical Identification, Product Identification or Common Name:
CAS number: 1717-00-6
CAS name: Ethane,1,1-dichloro-1-fluoro-
IUPAC name: 1,1-Dichloro-1-fluoroethane
Common Name: HCFC-141b

Product Uses and Applications:
HCFC-141b is used as a foam expansion agent in the production of polyurethane foam insulation products for building construction, as a sealant for windows and doors, in the construction of decorative molding, and in small appliances such as refrigerators and freezers. It is also used as a specialty cleaning fluid for industrial solvent applications.

Physical Properties of the Chemical or Product:
HCFC-141b is a colorless liquid under normal atmospheric conditions. It has a melting point of -153.4 F (-103.5 °C) and a boiling point of 90°F (32 °C), and possesses a slight odor. HCFC-141b is stable at normal room conditions but can become unstable at high temperature (>175°C) and in the presence of fire when decomposition can occur.

Exposure Potential:

Workplace exposure:
HCFC-141b is manufactured in closed-systems, thus significant exposures to workers is unlikely. However, exposure can come from off-gassing during foam manufacturing or after the foam is produced or from non-self-contained solvent systems. Proper ventilation, especially in low places where heavy vapors might collect, is required to reduce potential exposure to workers. Always refer to the (Material) Safety Data Sheet ((M)SDS) for guidance on the appropriate personal protective equipment to be used and on the safe handling of this material.
Workers should follow the recommended safety measures contained within the (Material) Safety Data Sheet ((M)SDS) and on any product packaging. Employees should be trained in the appropriate work processes and safety equipment to limit exposure to chemical substances. Occupational use of this substance is considered to be safe provided the recommended safety measures given in the (M)SDS are followed.

**Consumer exposure:**
Under normal conditions, opportunities for exposure to the public are low; therefore associated health risks to the public are also low. Consumer exposure to foam expansion agents from polyurethane foams is extremely low due to slow diffusion rates from foams as most are coated or in panels during their use and is minimal in situations where insulating foams are destroyed or landfilled and covered at the end of their useful life.

**Environmental exposure:**
HCFC-141b should always be contained through the use of engineering controls and good industrial practices to minimize any environmental exposure. A potential for environmental exposure can occur if containers are subjected to high temperatures and flames which could cause containers or cylinders to rupture. Bioaccumulation of HCFC-141b is unlikely and the chemical is not readily biodegradable. HCFC-141b should not be allowed to enter waste streams or waterways.

**Health Information**
*Note: The information contained in this section may be useful to someone handling the pure undiluted substance such as a manufacturer or transporter. For more information on health hazards and recommended protective equipment, please refer to the (M)SDS.*

Exposures may affect human health as follows:

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>Inhalation: Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects. Other symptoms potentially related to misuse or inhalation abuse are anesthetic effects, light-headedness, dizziness, confusion, incoordination, drowsiness, or unconsciousness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness. Vapors are heavier than air and can cause suffocation by reducing available oxygen for breathing.</td>
</tr>
<tr>
<td>Irritation</td>
<td>Skin: Not an irritant. Contact with liquid or refrigerated gas can cause cold burns or frostbite. Eye: Slight irritation. Contact with liquid or refrigerated gas can cause cold burns or frostbite.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Not a skin sensitizer.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Not mutagenic.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not carcinogenic.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>No toxicologically significant effects were found.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>No reproductive/developmental toxicity.</td>
</tr>
</tbody>
</table>
Environmental Information

Note: The information in this chapter is intended to provide brief and general information of this substance’s environmental impact. The results in the table below refer to testing performed with the non formulated, undiluted substance. The data does not replace the data given in the (M)SDS. For more information and recommended protective measures, please refer to the (M)SDS.

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Toxicity</td>
<td>Harmful to aquatic organisms; may cause long-term adverse effects in the aquatic environment.</td>
</tr>
<tr>
<td>Biodegradability</td>
<td>Not readily biodegradable.</td>
</tr>
<tr>
<td>Persistence</td>
<td>Persistent in the atmosphere. It is expected to rapidly volatilize from aquatic and soil compartments.</td>
</tr>
<tr>
<td>Bioaccumulation potential</td>
<td>Not expected to bioaccumulate.</td>
</tr>
</tbody>
</table>

Risk Management

Workplace Management:
Exposure can be mitigated by risk management measures including containment through engineering controls, the use of personal protective equipment (PPE) and proper industrial hygiene methods. Always refer to the (Material) Safety Data Sheet ((M)SDS) for guidance on the appropriate personal protective equipment to be used and on the safe handling of this material.

Consumer Risk Management:
Consumer risk of exposure is minimal as the primary opportunity for exposure is in industrial settings during either polyurethane foam manufacturing or in specialty cleaning applications.

Regulatory Information:
Always refer to the (Material) Safety Data Sheet ((M)SDS) for guidance on regulatory restrictions that may govern the manufacture, sale, transportation, use and/or disposal of this chemical or product. Regulations may vary by region, country, state, county, city, or local government.

First Aid Information:
For all First Aid or Emergency information, consult the (Material) Safety Data Sheet ((M)SDS).

Information Sources:
Data is compiled from a variety of sources, including publicly available documents, internal data and other sources such as, but not limited to, Chemical Safety Reports and (Material) Safety Data Sheets ((M)SDS).
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