1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name  FX 90
Company identification  see heading and/or footer
Emergency phone numbers  see heading and/or footer

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation  Preparation
Components/Impurities  Contains the following components: 77% w/w Pentfluoroethane (R125)/19% w/w 1,1,1,2-Tetrafluoroethane (R134a)/4% w/w Dimethylether {F+;R12}
EEC Nr (from EINECS)  Not applicable for preparations

3 HAZARDS IDENTIFICATION

Hazards identification  Contact with product may cause cold burns or frostbite.
In high concentrations may cause asphyxiation.
Liquefied gas

4 FIRST AID MEASURES

Inhalation  In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness.
Victim may not be aware of asphyxiation.
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Skin/eye contact  In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing.
Immediately flush eyes thoroughly with water for at least 15 minutes.
Obtain medical assistance
Ingestion  Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards  Exposure to fire may cause containers to rupture/explode.
Non flammable
Hazardous combustion products  If involved in a fire the following toxic and/or corrosive flames may be produced by thermal decomposition:
Carbonyl fluoride
6 ACCIDENTAL RELEASE MEASURES

Personal precautions
Evacuate area.
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Ensure adequate air ventilation.

Environmental precautions
Try to stop release.
Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous.

Clean up methods
Ventilate area.

7 HANDLING AND STORAGE

Handling and storage
Suck back of water into the container must be prevented.
Do not allow backfeed into the container.
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Refer to supplier's container handling instructions.
Keep container below 50°C in a well ventilated place.

8 EXPOSURE CONTROLS/PERSOml protection

Exposure limit value for country
UK: Pentfluoroethane (R125) - LTEL: 1000ppm
UK: 1,1,1,2-Tetrafluoroethane - LTEL: 1000ppm (EH40/2000)
UK: Dimethyl ether - LTEL: 400ppm; STEL: 500ppm (EH40/2000)
Germany: Dimethyl ether - MAK: 1000ppm

Personal protection
Protect eyes, face and skin from liquid splashes.
Do not smoke while handling product.
Ensure adequate ventilation.
9 PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight</td>
<td>109.3</td>
</tr>
<tr>
<td>Boiling point</td>
<td>-42.6 °C to 6.6 °C</td>
</tr>
<tr>
<td>Critical temperature</td>
<td>82.7 °C</td>
</tr>
<tr>
<td>Relative density, gas</td>
<td>3.8 (air=1)</td>
</tr>
<tr>
<td>Relative density, liquid</td>
<td>1.17 (water=1)</td>
</tr>
<tr>
<td>Vapour Pressure 20°C</td>
<td>9.6 bar(a).</td>
</tr>
<tr>
<td>Solubility mg/l water</td>
<td>Not known, but considered to have low solubility.</td>
</tr>
<tr>
<td>Appearance/Colour</td>
<td>Colourless gas</td>
</tr>
<tr>
<td>Odour</td>
<td>Ethereal</td>
</tr>
<tr>
<td>Other data</td>
<td>Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.</td>
</tr>
</tbody>
</table>

10 STABILITY AND REACTIVITY

Stability and reactivity
Stable under normal conditions.
Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.

11 TOXICOLOGICAL INFORMATION

General
Pentafluoroethane (R125) - May produce irregular heart beat and nervous symptoms.
1,1,1,2-Tetrafluoroethane - May produce irregular heart beat and nervous symptoms.
Dimethylether - In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

12 ECOLOGICAL INFORMATION

General
Pentafluoroethane (R125) - When discharged in large quantities may contribute to the greenhouse effect.
1,1,1,2-Tetrafluoroethane - When discharged in large quantities may contribute to the greenhouse effect.

Global warming factor
Pentafluoroethane (R125) - 3200 (CO2=1)
1,1,1,2-Tetrafluoroethane - 1300 (CO2=1)
13 DISPOSAL CONSIDERATIONS

**General**
Avoid discharge to the environment.
Do not discharge into any place where its accumulation could be dangerous.
Refer to supplier's waste gas recovery programme.
Contact supplier if guidance is required.

14 TRANSPORT INFORMATION

- **UN Nr**: 3163
- **Class/Div**: 2.2
- **ADR/RID Item Nr**: 2, 2°A
- **ADR/RID Hazard Nr**: 20
- **Labelling ADR**: Label 2: non flammable non toxic gas

**Other transport information**
Avoid transport on vehicles where the load space is not separated from the driver's compartment.
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
Before transporting product containers ensure that they are firmly secured and:
- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- there is adequate ventilation.
- compliance with applicable regulations.

15 REGULATORY INFORMATION

- **Number in Annex I of Dir 67/548**: Not applicable for preparations
- **EC Classification**: Not classified as dangerous substance.
- **Labelling of cylinders**
  - **Symbols**: Label 2: non flammable non toxic gas

16 OTHER INFORMATION

Ensure all national/local regulations are observed.
Asphyxiant in high concentrations.
Keep container in well ventilated place.
Do not breathe the gas.
The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Users of breathing apparatus must be trained.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

End of document.

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