1,1,3,3,3-HEXAFLUORO 2-PROpanol  
CAS NO 920-66-1  

MATERIAL SAFETY DATA SHEET  
SDS/MSDS

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

1.1 Product identifiers
   Product name : 1,1,3,3,3-Hexafluoro 2-Propanol
   CAS-No. : 920-66-1

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet
   Company : Central Drug House (P) Ltd
             7/28 Vardaan House
             New Delhi -110002
             INDIA
   Telephone : +91 11 49404040
   Email : care@cdhfinechemical.com

1.4 Emergency telephone number
   Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification according to Regulation (EC) No 1272/2008
   Acute toxicity, Oral (Category 4), H302
   Skin corrosion (Category 1B), H314
   Reproductive toxicity (Category 2), H361

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

2.2 Label elements
   Labelling according Regulation (EC) No 1272/2008
   Pictogram

   Signal word : Danger
   Hazard statement(s)
   H302 : Harmful if swallowed.
   H314 : Causes severe skin burns and eye damage.
   H361 : Suspected of damaging fertility or the unborn child.
Precautionary statement(s)
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements
none

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms : HFP
            Hexafluoroisopropanol

Formula : C₆H₂F₅O
Molecular weight : 168.04 g/mol
CAS-No. : 920-66-1
EC-No. : 213-059-4

Hazardous ingredients according to Regulation (EC) No 1272/2008

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,1,3,3-Hexafluoropropan-2-ol</td>
<td>Acute Tox. 4; Skin Corr. 1B;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No. 920-66-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC-No. 213-059-4</td>
<td>Repr. 2; H302, H314, H361</td>
<td></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
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
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
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen fluoride

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Non-combustible, corrosive hazardous materials

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

8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment

Eye/face protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engine protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: clear, liquid
   Colour: colourless

b) Odour No data available

c) Odour Threshold No data available

d) pH No data available

e) Melting point/freezing point Melting point/range: -4 °C - lit.

f) Initial boiling point and boiling range 59 °C - lit.

g) Flash point No data available

h) Evaporation rate No data available

i) Flammability (solid, gas) No data available

j) Upper/lower flammability or explosive limits No data available

k) Vapour pressure 120 mmHg at 20 °C

l) Vapour density No data available

m) Relative density 1.596 g/cm³ at 25 °C

n) Water solubility No data available

o) Partition coefficient: n-octanol/water No data available

p) Auto-ignition temperature No data available
q) Decomposition temperature  No data available
r) Viscosity  No data available
s) Explosive properties  No data available
t) Oxidizing properties  No data available

9.2 Other safety information  No data available

SECTION 10: Stability and reactivity

10.1 Reactivity  No data available

10.2 Chemical stability  Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions  No data available

10.4 Conditions to avoid  No data available

10.5 Incompatible materials  Strong oxidizing agents, Strong acids, Strong bases, Aluminum, Zinc, Alkali metals

10.6 Hazardous decomposition products  Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen fluoride
Other decomposition products - No data available
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(1,1,1,3,3,3-Hexafluoropropan-2-ol)
LC50 Inhalation - Rat - 4 h - 1,974 mg/l(1,1,1,3,3,3-Hexafluoropropan-2-ol)

Skin corrosion/irritation  No data available(1,1,1,3,3,3-Hexafluoropropan-2-ol)

Serious eye damage/eye irritation  No data available(1,1,1,3,3,3-Hexafluoropropan-2-ol)

Respiratory or skin sensitisation  No data available(1,1,1,3,3,3-Hexafluoropropan-2-ol)

Germ cell mutagenicity  reverse mutation assay(1,1,1,3,3,3-Hexafluoropropan-2-ol) Salmonella typhimurium
Result: negative

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity  Suspected human reproductive toxicant(1,1,1,3,3,3-Hexafluoropropan-2-ol)
Specific target organ toxicity - single exposure
No data available (1,1,1,3,3,3-Hexafluoropropan-2-ol)

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available (1,1,1,3,3,3-Hexafluoropropan-2-ol)

Additional Information
Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 60 mg/kg (1,1,1,3,3,3-Hexafluoropropan-2-ol)
RTECS: UB6450000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea (1,1,1,3,3,3-Hexafluoropropan-2-ol)

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish
LC50 - Pimephales promelas (fathead minnow) - 244 mg/l - 96 h (1,1,1,3,3,3-Hexafluoropropan-2-ol)

12.2 Persistence and degradability
Biodegradability
aerobic - Exposure time 28 d (1,1,1,3,3,3-Hexafluoropropan-2-ol)
Result: 0 - 5% - Not readily biodegradable.
(OECD Test Guideline 301C)

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available (1,1,1,3,3,3-Hexafluoropropan-2-ol)

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: 3265  
MDG: 3265  
IATA: 3265

14.2 UN proper shipping name
ADR/RID: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (1,1,1,3,3,3-Hexafluoropropan-2-ol)
IMDG: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (1,1,1,3,3,3-Hexafluoropropan-2-ol)
IATA: Corrosive liquid, acidic, organic, n.o.s. (1,1,1,3,3,3-Hexafluoropropan-2-ol)
14.3 Transport hazard class(es)
ADR/RID: 8  IMDG: 8  IATA: 8
14.4 Packaging group
ADR/RID: II  IMDG: II  IATA: II
14.5 Environmental hazards
ADR/RID: no  IMDG Marine pollutant: no  IATA: no
14.6 Special precautions for user
No data available

SECTION 15: Regulatory information
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information
Full text of H-Statements referred to under sections 2 and 3.
H302  Harmful if swallowed.
H314  Causes severe skin burns and eye damage.
H361  Suspected of damaging fertility or the unborn child.

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. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.