

1 Identification

- **Product identifier**
- **Trade name:** 1-FLUORO-3-CHLOROISOPROPANOL
- **Article number:** 226760
- **CAS Number:**
453-11-2
- **Molecular Formula** C3 H6 O F Cl
- **Molecular Weight** 112.53 g/mol
- **Application of the substance / the mixture** For Research Use Only
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
United States
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02 GHS06

- **Signal word** Danger
- **Hazard statements**
Flammable liquid and vapor.
Harmful if swallowed or in contact with skin.
Toxic if inhaled.

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· **Precautionary statements**

- Wear protective gloves / eye protection / face protection.
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- Use explosion-proof electrical/ventilating/lighting/equipment.
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Wear protective gloves / protective clothing.
- Ground/bond container and receiving equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- Specific treatment (see on this label).
- Call a POISON CENTER/doctor.
- IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Rinse mouth.
- In case of fire: Use for extinction: CO₂, powder or water spray.
- Take off contaminated clothing and wash it before reuse.
- Store locked up.
- Store in a well-ventilated place. Keep container tightly closed.
- Store in a well-ventilated place. Keep cool.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
453-11-2 1-FLUORO-3-CHLOROISOPROPANOL

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Consult your Doctor. Show the safety data sheet to the Doctor. Away from the dangerous area.

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Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

If breathed in, supply fresh air. If not breathing, give artificial respiration. Consult a Doctor.

· After skin contact: *Wash off with soap and plenty of water. Consult a Doctor.*

· After eye contact: *Rinse opened eye for several minutes under running water. Then consult a doctor.*

· After swallowing:

Never give anything by mouth to an unconscious person. Rinse mouth with water. If symptoms persist consult a Doctor.

· Information for doctor:

· Most important symptoms and effects, both acute and delayed *No further relevant information available.*

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

· Extinguishing media

· Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· Special hazards arising from the substance or mixture *No further relevant information available.*

· Advice for firefighters

· Protective equipment: *Mouth respiratory protective device.*

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

· Environmental precautions: *Prevent seepage into sewage system, workpits and cellars.*

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Pick up mechanically, dispose contaminated material as waste according to Section 13.

Ensure adequate ventilation.

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

· Handling:

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace. Avoid direct contact with skin and eyes.

Open and handle receptacle with care.

Prevent formation of aerosols.

· Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

· Conditions for safe storage, including any incompatibilities

· Storage: *15-30 °C*

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- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see Section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing.
 - Wash hands before breaks and at the end of work.
 - Store protective clothing separately.
 - Avoid contact with the eyes and skin.
- **Breathing equipment:**
 - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**
 - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
 - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Liquid
Color:	Clear
Odor:	Indeterminate

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· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	
Decomposition temperature:	Not determined.
· Auto igniting:	Not determined.
· Danger of explosion:	Not determined.
· Explosion limits:	
Lower:	Not Applicable
Upper:	Not Applicable
· Vapor pressure:	Not Applicable
· Density:	Not Applicable
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not Determined Not determined.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- on the skin:** No irritant effect.
- on the eye:** Irritant and potentially harmful
- **Sensitization:** No sensitizing effects known.

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- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Can not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Discard must be made according to official regulations.

14 Transport information

- | | |
|---|--|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA | UN1992 |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR · IMDG, IATA | <p>Flammable liquids, toxic, n.o.s. (1-FLUORO-3-CHLOROISOPROPANOL)</p> <p>1992 Flammable liquids, toxic, n.o.s. (1-FLUORO-3-CHLOROISOPROPANOL)</p> <p>FLAMMABLE LIQUID, TOXIC, N.O.S. (1-FLUORO-3-CHLOROISOPROPANOL)</p> |

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· **Transport hazard class(es)**· **DOT**

· **Class** 3 Flammable liquids
 · **Label** 3, 6.1

· **ADR**

· **Class** 3 Flammable liquids
 · **Label** 3+6.1

· **IMDG**

· **Class** 3 Flammable liquids
 · **Label** 3/6.1

· **IATA**

· **Class** 3 Flammable liquids
 · **Label** 3 (6.1)

· **Packing group**· **DOT, ADR, IMDG, IATA** III· **Environmental hazards:** Not applicable.· **Special precautions for user** Warning: Flammable liquids· **EMS Number:** F-E,S-D

· **Transport in bulk according to Annex II of
 MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**· **ADR**

· **Excepted quantities (EQ)** Code: E1
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":** UN 1992 FLAMMABLE LIQUIDS, TOXIC, N.O.S. (1-FLUORO-3-CHLOROISOPROPANOL), 3 (6.1), III

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15 Regulatory information

- *Safety, health and environmental regulations/legislation specific for the substance or mixture*
- *Sara*
- *Section 355 (extremely hazardous substances): Substance is not listed.*
- *Section 313 (Specific toxic chemical listings): Substance is not listed.*
- *TSCA (Toxic Substances Control Act): Substance is not listed.*
- *Proposition 65*
- *Chemicals known to cause cancer: Substance is not listed.*
- *Chemicals known to cause reproductive toxicity for females: Substance is not listed.*
- *Chemicals known to cause reproductive toxicity for males: Substance is not listed.*
- *Chemicals known to cause developmental toxicity: Substance is not listed.*
- *Carcinogenic categories*
- *EPA (Environmental Protection Agency) Substance is not listed.*
- *TLV (Threshold Limit Value established by ACGIH) Substance is not listed.*
- *NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.*
- *GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).*
- *Hazard pictograms*



GHS02 GHS06

- *Signal word* **Danger**
- *Hazard statements*
Flammable liquid and vapor.
Harmful if swallowed or in contact with skin.
Toxic if inhaled.
- *Precautionary statements*
Wear protective gloves / eye protection / face protection.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves / protective clothing.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Specific treatment (see on this label).
Call a POISON CENTER/doctor.
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Rinse mouth.
In case of fire: Use for extinction: CO2, powder or water spray.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Quality Control Dept.

· **Date of preparation / last revision** 10/03/2016 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 3: Acute toxicity – Category 3