

1: Identification of substance / mixture

1. Product Identifier

Substance

Product Name **Isobutyric anhydride**
Product Code 097599
CAS Number 97-72-3
Other Names 2-Methylpropionic anhydride
IUPAC
MFCD Number MFCD00008913
EC/EINECS 202-603-6
REACH Number

2. Relevant identified uses of the substance or mixture and uses advised against

3. Details of the supplier of the safety data sheet

Fluorochem Ltd
Unit 14, Graphite Way
Hadfield
Derbyshire
SK13 1QH
UK

Telephone: +44(0)1457 860111
Fax: +44(0)1457 892799
Email: sds@fluorochem.co.uk



4. Emergency telephone number

+44(0)7855 268577 -

2. Hazards Identification

1. Classification of the substance or mixture

H301	Acute Tox. 3	
H311	Acute Tox. 3	
H314	Skin Corr. 1B	

2. Label elements

Signal Word **Danger**



Hazard Statements

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.

Precautionary Phrases

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.

3. Other Hazards

Additional precautionary phrases are located throughout the safety data sheet

3. Composition / Information on Ingredients

1. Substances

Isobutyric anhydride

Assay:100% CAS Number :97-72-3

2. Mixtures

Not Relevant

4. First Aid Measures

1. Description of first aid measures

<i>Skin Contact</i>	P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
<i>Eye Contact</i>	P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<i>Ingestion</i>	P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
<i>Inhalation</i>	P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

2. Most important symptoms and effects

There may be pain and redness.

3. Indication of any immediate medical attention

P310: Immediately call a POISON CENTER or doctor/physician.
No additional measures required

5. Firefighting measures

1. Extinguishing Media

Suitable Carbon dioxide.
Dry chemical powder.
Alcohol or polymer foam.
Use water spray to cool containers.

Unsuitable no data

2. Special Hazards arising from the substance or mixture

In combustion emits toxic fumes of carbon dioxide / carbon monoxide.
In combustion emits toxic fumes of nitrogen oxides.
In combustion emits toxic fumes of hydrogen chloride / phosgene.
In combustion emits toxic fumes of hydrogen bromide.

3. Advice for Fire Fighters

Wear self-contained breathing apparatus.
Wear protective clothing to prevent contact with skin and eyes.

6. Accidental Release Measures

1. Personal Precautions

Do not attempt to take action without suitable protective clothing – see section 8 of SDS.
Evacuate the area immediately.

2. Environmental Precautions

Do not discharge into drains or rivers.
Contain the spillage using bunding.

3. Methods & Materials

Mix with sand or vermiculite.
Transfer to a closable, labelled salvage container for disposal by an appropriate method.
Avoid all incompatible materials in clean-up procedure. See section 10 of SDS.

4. Preventing the occurrence of secondary hazards.

No Special Measures Required

7. Handling and Storage

1. Personal Precautions

Safe Handling Ensure there is sufficient ventilation of the area.
 P264: Wash hands thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.

Protection against explosions and fires P363: Wash contaminated clothing before reuse.
 normal measures for preventive fire protection

2. Conditions for safe storage, including any incompatibilities

Managing Storage Risks Store in cool, well ventilated area.
 Keep container tightly closed.
 Keep away from direct sunlight.

Storage Controls No special requirements

Maintaining Integrity Store away from oxidising agents
 Keep in tightly closed container in cool area away from direct sunlight or heat sources.

Other advice no further information available

3. Specific End Uses

The end use(s) have not been fully determined. The substance is supplied for Research and Development purposes by professionals only.

8. Exposure Controls/Personal Protection

1. Control Parameters

No Data Available

2. Exposure Controls

General protective and hygiene measures P280: Wear protective gloves/protective clothing/eye protection/face protection.
 Wash hands during breaks and at the end of handling the material
 Immediately remove any contaminated clothing

Engineering measures Ensure there is sufficient ventilation of the area.

Eye / Face Protection Safety Glasses with side-shields.

Hand protection Protective gloves.

Respiratory protection P260: Do not breathe dust/fume/gas/mist/vapours/spray.
 Use breathing protection with high concentrations

Skin protection Gloves must be inspected prior to use.
 Use proper glove removal technique to avoid skin contact with this product.
 Wash and dry hands.
 Protective clothing.

Other personal protection advice no data

9. Physical and Chemical Properties

1. Physical and Chemical Properties

Appearance	Liquid
Odour	No Data Available
Odour threshold	No Data Available
PH	No Data Available
Melting point / Freezing point	-56 °C - lit.
Initial boiling point and boiling range	182 °C - lit.

Flash point	68 °C - closed cup
Evaporation rate	No Data Available
Flammability(solid,gas)	No Data Available
Upper/lower flammability or explosive limits	Upper: 7.7 %(V) / Lower: 1.09 %(V)
Vapour pressure	0.100 hPa at 20 °C
Vapour density	5.46 - (Air = 1.0)
Relative density	0.954 g/cm3 at 25 °C
Solubility(ies):	No Data Available
Partition coefficient: n-octanol/water	log Pow: 2.3
Auto-ignition temperature	No Data Available
Decomposition temperature	No Data Available
Viscosity	No Data Available
Explosive properties	No Data Available
Oxidising properties	No Data Available

2. Other Information

No additional information available

10. Stability and Reactivity

1. Reactivity

no unusual reactivity

2. Stability

Stable under normal conditions.

3. Possibility of Hazardous Reactions

no hazardous reactions known

4. Conditions to Avoid

Heat, flames and sparks.

5. Incompatible Materials

Oxidising agents.
 Strong bases.

6. Hazardous Decomposition Products

In combustion emits toxic fumes of carbon dioxide / carbon monoxide.
 In combustion emits toxic fumes of hydrogen chloride / phosgene.
 In combustion emits toxic fumes of hydrogen bromide.
 In combustion emits toxic fumes of nitrogen oxides.

11. Toxicology information

1. Information

<i>Acute Toxicity</i>	LD50 Oral - rat - 266 mg/kg LD50 Dermal - rabbit - 475 mg/kg
<i>Skin corrosion/irritation</i>	caustic for skin and mucous membranes irritant for skin and mucous membranes
<i>Serious eye Damage/irritation</i>	strong caustic effect. irritant effect
<i>Respiratory or skin sensitisation</i>	No sensitizing effect known
<i>Germ Cell mutagenicity</i>	not known
<i>Carcinogenicity</i>	not known
<i>Reproductive toxicity</i>	not known
<i>STOT-single exposure</i>	not known

STOT-repeated exposure not known

Aspiration hazard not known

2. Additional

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH
swallowing will lead to a strong caustic effect on mouth and throat and the danger of perforation of oesophagus and stomach.

12. Ecological Information

1. Toxicity

not known

2. Persistence and degradability

not known

3. Bio-Accumulative Potential

not known

4. Mobility and Soil

not known

5. Results of PBT & vPvB assessment

not known

6. Other adverse effects

Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.

13. Disposal Considerations

1. Waste Treatment Methods

Disposal Operations

Disposal of Packaging Disposal must be made according to official regulations.

14. Transport Information

Air (ICAO)

1. **UN Number:** 2922
2. **Shipping Name:** Corrosive liquid, toxic, n.o.s. (Isobutyric anhydride)
3. **Transport hazard class(es):** : 8 Sub Class : 6.1



4. **Packing group:** III
5. **Environmental hazards:**
6. **Special Precautions for user:**
7. **Transport in bulk:**

Road (ADR)

1. **UN Number:** 2922
2. **Shipping Name:** CORROSIVE LIQUID, TOXIC, N.O.S (Isobutyric anhydride).
3. **Transport hazard class(es):** : 8 Sub Class :



4. **Packing group:** III
5. **Environmental hazards:**
6. **Special Precautions for user:**
7. **Transport in bulk:**

Sea (IMDG)

1. **UN Number:** 2922
2. **Shipping Name:** Corrosive liquid, toxic, n.o.s. (Isobutyric anhydride)
3. **Transport hazard class(es) :** 8 Sub Class : 6.1



4. **Packing group:** III
5. **Environmental hazards:**
6. **Special Precautions for user:**
7. **Transport in bulk:** IBCINS: IBC03

UNTANKINS: T7
TANKPROV: TP1 TP28

15. Safety, health, environmental and national regulations

1. Safety, health, environmental and national regulations:

product is not subject to any additional regulations or provisions

2. Safety Assessment

No Chemical Safety Assessment

16. Other Information

1. Other Information:

ADR: Accord European sur le transport des marchandises Dangereuses par Route(European Agreement concerning the International Carriage of Dangerous Goods by road)
RID:Reglement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations concerning the International transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the International Air Transport Association
ICAO:International Civil Aviation Organization
ICAO-TI: Technical Instructions by the ICAO
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS:Chemical Abstracts Service

2. Associated risk phrases according to European directive 67/548/EEC

3. Disclaimer

The product listed is for research and development purposes only and not for human or animal use. As such, in most cases, the toxicological, ecological and physicochemical properties have not been fully determined and the product should be treated with respect and always handled under suitable conditions by appropriately qualified personnel. The responsible party shall use this datasheet only in conjunction with other sources of information gathered by them, and should make an independent judgement of suitability, to ensure proper use and protect the health and safety of employees. This information is furnished without warranty and any use of the product not in conformance with this material safety data sheet, or in combination with any other product or process, is the responsibility of the user.