

# SAFETY DATA SHEET

fluorochem.

## 1. Identification of Substance / Mixture

### Product Identifier

1.1.2 Product Name	1,4-Dioxane
1.1.2 Other Names	
1.1.1 Product Code	F044719
1.1.3 CAS	123-91-1
1.1.4 MDL	MFCD00006571
1.1.5 EINECS	204-661-8
1.1.6 REACH Registration Number	
1.2.1 Relevant Uses	For research and development purposes only.
1.2.2 Uses Advised Against	No uses advised against.

### 1.3 Supplier Details

1.3.1 Company	Fluorochem Ltd
1.3.2 Address	Unit 14, Graphite Way Hadfield Glossop Derbys. SK13 1QH United Kingdom
1.3.3 Telephone	01457 860111
1.3.4 Email	sds@fluorochem.co.uk
1.4.1 Emergency Telephone	+44 20 3807 3798

## 2. Hazards Identification

### 2.1.1 Classification

Carc. 1A  
Eye Irrit. 2A  
Flam. Liq. 2  
STOT SE 3

### 2.2.1 Signal Word

**Danger**

### 2.2.2 Pictograms



### 2.2.3 Hazards

**H225** Highly flammable liquid and vapour.  
**H319** Causes serious eye irritation.  
**H335** May cause respiratory irritation.  
**H350** May cause cancer.

### 2.2.4 Precautions

- P202** Do not handle until all safety precautions have been read and understood.
- P210** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233** Keep container tightly closed.
- P240** Ground and bond container and receiving equipment.
- P241.1** Use explosion-proof equipment.
- P242** Use non-sparking tools.
- P243** Take action to prevent static discharges.
- P260.1** Do not breathe dust/fume/gas/mist/vapours/spray.
- P264** Wash hands thoroughly after handling.
- P270** Do not eat, drink or smoke when using this product.
- P280.4** Wear protective gloves/protective clothing and eye/face protection.
- P301+P310.1** IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P303+P361+P353.1** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P308+P311.2** IF exposed or concerned: Call a POISON CENTER.
- P362+P364** Take off contaminated clothing and wash it before reuse.
- P370+P378.2** In case of fire: Use extinguishing powder or sand to extinguish.
- P391** Collect spillage.
- P403+P235** Store in a well-ventilated place. Keep cool.
- P501.2** Dispose of contents/container to an appropriate recycling or disposal facility.

### 2.2.5 Other Classification Hazards

## 3. Composition of Ingredients

#### SUBSTANCE

3.1.1 Name	3.1.2 CAS	Einecs	3.1.3 Composition	Hazards
1,4-Dioxane	123-91-1	204-661-8		H225 Flam. Liq. 2 H319 Eye Irrit. 2A H335 STOT SE 3 H350 Carc. 1A

## 4. First Aid Measures

4.1.1 Eye contact	In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing and seek medical attention.
4.1.2 Ingestion	Where Diphoterine is not available, rinse mouth with copious amounts of water. Seek urgent medical advice.
4.1.3 Inhalation	Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory problems seek immediate medical attention.
4.1.4 Skin Contact	After contact with skin, wash immediately with plenty of water and soap. Remove contaminated clothing immediately. In case of skin reactions, consult a physician.
4.1.5 General Advice	No additional advice.
4.2.1 Most Important Symptoms and Effects	No known symptoms or effects.
4.3.1 Immediate First Aid Measures	No special immediate treatment required

## 5. Fire Fighting Measures

5.1.1 Suitable Fire Extinguishing Media	Use sand, extinguishing powder or alcohol resistant foam to extinguish fire.
5.1.2 Unsuitable Fire Extinguishing Media	No known unsuitable media.
5.2.1 Special Hazards	Thermal decomposition can lead to release of irritating gases and vapours.
5.3.1 Advice for Fire Fighters	As in any fire, wear self-contained breathing apparatus and full protective gear.

## 6. Accidental Release Measures

6.1.1 Personal Precautions	Use personal protective equipment. Ensure Hexafluorine washing solution is to hand. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Keep personnel away from spill/leak.
6.2.1 Environmental Precautions	Prevent further leakage if safe to do so. Prevent product from entering drains. Do not let product enter waterways or sewer systems. Discharge into the environment must be avoided.
6.3.1 Containment - Methods and Materials	Absorb the spilled material with an inert absorbent (e.g. sand, silica gel, rag, vermiculite) before transferring into an airtight container. Remove all sources of ignition. Dispose of appropriately according to local regulations.
6.4.1 Referenced SDS Sections	For personal protection see section 8. For disposal see section 13.

## 7. Handling and Storage

### Personal Precautions

<b>7.1.1 Safe Handling</b>	Wear appropriate personal protective equipment. Use only under a chemical fume hood. Keep away from heat/sparks/open flame/hot surfaces. Take measures to prevent the build-up of electrostatic charge. Ensure adequate exhaust ventilation, especially if dust, aerosol or fumes will be generated. Avoid contact with skin, eyes and clothing. For precautions see section 2.2.
<b>7.1.2 Protection Against Explosion and Fire</b>	Where possible, use anti static and spark proof equipment when handling.
<b>7.1.3 General Occupational Hygiene</b>	Handle in accordance with good industrial hygiene and safety practice. Wash hands before and after use. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use.

### **Conditions for Safe Storage and Incompatibilities**

<b>7.2.1 Managing Storage Risks</b>	Keep away from heat/sparks/open flame/hot surfaces. Take measures to prevent the build-up of electrostatic charge. Keep container tightly closed and upright. Store in a cool, dry and well-ventilated place.
<b>7.2.2 Storage Controls</b>	Keep container tightly closed in a cool area away from sunlight or heat sources.
<b>7.2.3 Maintaining Integrity</b>	Keep container tightly closed in a cool area away from sunlight or heat sources.
<b>7.2.4 Other Advice</b>	No other specific advice available.
<b>7.3.1 Specific End Use(s)</b>	No specific end uses are advised. The products supplied are for research purposes only.

## **8. Exposure Controls / Personal Protection**

<b>8.1.1 Control Parameters</b>	
<b>8.2.1 Engineering Measures</b>	Use only under a chemical fume hood ensuring adequate ventilation, especially in confined areas. Ensure Hexafluorine washing solution is close to workstation. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>8.2.2 Face Protection</b>	Wear tightly fitting safety goggles which adhere to European standard EN 166. Ensure Hexafluorine eye wash is to hand
<b>8.2.3 Hand Protection</b>	Handle with impermeable gloves. Inspect gloves before use. Gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. 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.
<b>8.2.4 Skin Protection</b>	Wear appropriate protective clothing ensuring all skin is covered. Wear safety shoes that meet at least S1 standards. Ensure Hexafluorine washing solution is to hand. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<b>8.2.5 Respiratory Protection</b>	Product should be handled in a fume cupboard with adequate extraction. No respiratory equipment is needed under normal use conditions.
<b>8.2.6 Hygiene Protection</b>	Ensure hair or skin particles cannot enter the chemical container.
<b>8.2.7 Environment Exposure Controls</b>	Avoid discharge into the environment, see section 6.2.

## **9. Physical and Chemical Properties**

<b>9.1.1 State</b>	Liquid
<b>9.1.2 Appearance</b>	No data available.
<b>9.1.3 Odour</b>	No data available.
<b>9.1.4 Odour Threshold</b>	No data available.
<b>9.1.5 pH</b>	No data available.
<b>9.1.6 Melting Point / Freezing Point</b>	10 to 12°C
<b>9.1.7 Initial Boiling Point</b>	100°C
<b>9.1.8 Boiling Range</b>	100-102°C
<b>9.1.9 Flash Point</b>	11°C Method: Closed Cup
<b>9.1.10 Evaporation Rate</b>	No data available.
<b>9.1.11 Flammability</b>	No data available.
<b>9.1.12 Upper / Lower Flammability or Explosion Limits</b>	No data available.
<b>9.1.13 Vapour Pressure</b>	38.5 hPa at 20°C
<b>9.1.14 Vapour Density</b>	No data available.
<b>9.1.15 Relative Density</b>	1.034 g/cm <sup>3</sup> at 20°C
<b>9.1.16 Solubility</b>	1000 g/L at 20°C in Water
<b>9.1.17 Partition Coefficient</b>	-0.42 at 20°C
<b>9.1.18 Auto Ignition Temperature</b>	375°C
<b>9.1.19 Decomposition Temperature</b>	No data available.
<b>9.1.20 Viscosity</b>	1.31 mPa s at 20°C
<b>9.1.21 Explosive Properties</b>	No data available.
<b>9.1.22 Oxidising Properties</b>	No data available.

9.2.1 Other information No additional information available.

## 10. Stability and Reactivity

10.1.1 Reactivity No known reactivity, based on information available.  
 10.2.1 Stability Stable under recommended storage conditions.  
 10.3.1 Possibility of Hazardous Reactions None under normal storage conditions.  
 10.4.1 Conditions To Avoid Heat, sparks, open flames, sources of ignition. Exposure to moisture.  
 10.5.1 Incompatible Materials Strong oxidising agents.  
 10.6.1 Hazardous Decomposition Products No Data Available.

## 11. Toxicology Information

11.1.1 Acute Toxicity Oral LD50, Rat, 5150mg/kg  
 Inhalation LCO, Rat, 155mg/l  
 11.1.2 Skin Corrosion / Irritation No Toxicology data available for this product.  
 11.1.3 Serious Eye Damage / Irritation No Toxicology data available for this product.  
 11.1.4 Respiratory or Skin Sensitisation No Toxicology data available for this product.  
 11.1.5 Germ Cell Mutagenicity No Toxicology data available for this product.  
 11.1.6 Carcinogenicity May cause cancer.  
 11.1.7 Reproductive Toxicity No Toxicology data available for this product.  
 11.1.8 STOT-single Exposure No Toxicology data available for this product.  
 11.1.9 STOT-repeated Exposure No Toxicology data available for this product.  
 11.1.10 Aspiration Hazard No Toxicology data available for this product.  
 11.2.1 Additional Toxicology Information No Toxicology data available for this product.

## 12. Ecological Information

12.1.1 Toxicity Toxicity to aquatic invertebrates:  
 Daphnia magna EC50 - 1000mg/l/48 h  
 Toxicity to aquatic algae and cyanobacteria:  
 Pseudokirchnerella subcapitata EC10 - 1000mg/l/72 h  
 12.2.1 Persistence and Degradability No Ecological data available for this product.  
 12.3.1 Bio-Accumulative Potential No Ecological data available for this product.  
 12.4.1 Mobility in Soil Log Pow: -0.42  
 12.5.1 Results of PBT and vPvB assessment No Ecological data available for this product.  
 12.7.1 Endocrine Disrupting Properties Avoid release to the environment.  
 12.6.1 Other Adverse Effects No Ecological data available for this product.

## 13. Disposal Considerations

13.1.1 Disposal Operations Ensure product is disposed of by licensed waste carriers.  
 13.1.2 Disposal of Packaging Ensure INNER PACKAGING is disposed of by licensed waste carriers. Some OUTER PACKAGING MAY be recyclable if not contaminated.

## 14. Transport Information

<b>IATA UN Number</b>	1165	<b>ADR UN Number</b>	1165	<b>IMDG UN Number</b>	1165
<b>14.1.2 IATA Proper Shipping Name</b>	Dioxane (1,4-Dioxane)	<b>ADR Proper Shipping Name</b>	Dioxane (1,4-Dioxane)	<b>IMDG Proper Shipping Name</b>	Dioxane (1,4-Dioxane)
<b>IATA Packing Group</b>	II	<b>ADR Packing Group</b>	II	<b>IMDG Packing Group</b>	II
<b>14.1.4 IATA Hazard Class</b>	3	<b>ADR Hazard Class</b>	3	<b>IMDG Hazard Class</b>	3
<b>14.1.5 IATA Sub Class</b>	- None -	<b>ADR Sub Class</b>	- None -	<b>IMDG Sub Class</b>	- None -

## 15. Regulatory Information

15.1.1 Regulatory Information As far as Fluorochem is aware, there are no further regulations controlling this product.  
 15.2.1 Chemical Safety Assessment No Chemical Safety Assessment is available for this product.

## 16. Other Information

### 16.1.2 Information Not Covered in Other Sections

ADR: Accord Europeen 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

### Revision

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### Date Modified

Sep 15, 2023 10:44:00 AM

### 16.1.1 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. This SDS adheres to Regulation (EC) No 1907/2006, and as of 13th April 2023, also conforms to EU Regulation 2020/878.