

## Chemical Safety Data Sheet MSDS / SDS

**2,2-Difluoroethanol**

Revision Date:2026-05-31 Revision Number:1

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

Product name : 2,2-Difluoroethanol  
CBnumber : CB8211291  
CAS : 359-13-7  
EINECS Number : 670-547-3  
Synonyms : 2,2-difluoroethan-1-ol,2,2-Difluoroethanol

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

**SECTION 2: Hazards identification****GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Danger

**Precautionary statements**

P501 Dispose of contents/container to....  
P403+P235 Store in a well-ventilated place. Keep cool.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P264 Wash skin thoroughly after handling.  
P240 Ground/bond container and receiving equipment.  
P233 Keep container tightly closed.  
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P405 Store locked up.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continuerinsing.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

#### **Hazard statements**

H335 May cause respiratory irritation

H319 Causes serious eye irritation

H315 Causes skin irritation

H225 Highly Flammable liquid and vapour

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: 2,2-Difluoroethanol
Synonyms	: 2,2-difluoroethan-1-ol,2,2-Difluoroethanol
CAS	: 359-13-7
EC number	: 670-547-3
MF	: C <sub>2</sub> H <sub>4</sub> F <sub>2</sub> O
MW	: 82.05

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## SECTION 4: First aid measures

### **General Advice**

If symptoms persist, call a physician.

### **Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

### **Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

### **Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

### **Ingestion**

Clean mouth with water and drink afterwards plenty of water.

### **Most important symptoms and effects**

Difficulty in breathing. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

### **Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### **Notes to Physician**

Treat symptomatically.

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## SECTION 5: Firefighting measures

### Suitable Extinguishing Media

Water mist may be used to cool closed containers.

### Extinguishing media which must not be used for safety reasons

No information available.

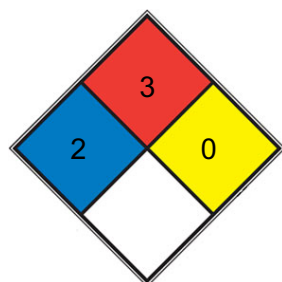
### Specific Hazards Arising from the Chemical

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### NFPA 704



**HEALTH 2** Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury (e.g. [diethyl ether](#), ammonium phosphate, iodine)

**FIRE 3** Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions. Liquids having a flash point below 22.8 °C (73 °F) and having a boiling point at or above 37.8 °C (100 °F) or having a flash point between 22.8 and 37.8 °C (73 and 100 °F). (e.g. gasoline, [acetone](#))

**REACT 0** Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

**SPEC.**  
**HAZ.**

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## SECTION 6: Accidental release measures

### Personal Precautions

Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges.

### Environmental Precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

## Methods for Containment and Clean Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Refer to protective measures listed in Sections 8 and 13.

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## SECTION 7: Handling and storage

### Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

### Storage

Store under an inert atmosphere. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat, sparks and flame.

### Specific Use(s)

Use in laboratories

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## SECTION 8: Exposure controls/personal protection

### Control Parameters

### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS70 General methods for sampling airborne gases and vapours MDHS 88

Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

### Exposure Controls

### Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

### Personal protective equipment

#### Eye Protection

Goggles (European standard - EN 166)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
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Nitrile rubber	See manufacturers	-	EN 374	(minimum requirement)
Neoprene	recommendations			
Natural rubber				
PVC				

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g.

sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

### **Skin and body protection**

Long sleeved clothing

### **Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

### **Large scale/emergency use**

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to

EN14387

### **Small scale/Laboratory use**

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### **Environmental exposure controls**

No information available.

## SECTION 9: Physical and chemical properties

### **Information on basic physicochemical properties**

No information available

### **Physical State**

Liquid

### **Odor**

No information available

### **Odor Threshold**

No data available

### **pH**

No information available

### **Melting Point/Range**

No data available

### **Softening Point**

No data available

### **Boiling Point/Range**

95 - 96 °C / 203 - 204.8 °F

### **Flash Point**

3 °C / 37.4 °F Method - No information available

### **Evaporation Rate**

No data available

### **Flammability (solid,gas)**

Not applicable Liquid

### **Explosion Limits**

No data available

### **Vapor Pressure**

No data available

### **Vapor Density**

No data available (Air = 1.0)

### **Specific Gravity / Density**

1.296 g/cm<sup>3</sup> @ 20 °C

### **Bulk Density**

Not applicable Liquid

### **Water Solubility**

No information available

### **Solubility in other solvents**

soluble in chloroform, ethanol.

**Partition Coefficient (n-octanol/water)**

No data available

**Autoignition Temperature**

No data available

**Decomposition Temperature**

No data available

**Viscosity**

No data available

**Explosive Properties**

Vapors may form explosive mixtures with air

**Oxidizing Properties**

No information available

**Molecular Formula**

HCF<sub>2</sub>CH<sub>2</sub>OH

**Molecular Weight**

82.05

**Colour**

Colorless to Almost colorless

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**SECTION 10: Stability and reactivity****Stability**

Air sensitive.

**Hazardous Reactions**

None under normal processing.

**Hazardous Polymerization**

No information available.

**Conditions to Avoid**

Keep away from open flames, hot surfaces and sources of ignition.

**Materials to avoid**

No information available.

**Hazardous Decomposition Products**

None under normal use conditions.

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## SECTION 11: Toxicological information

### (d) respiratory or skin sensitization;

Product	Inform	ation	
(a) acute	toxicity;		
(b) skin	corrosion/irritation;		Category 2
(c) serious	eye damage/irritation;		Category 2

### Respiratory

No data available

### Skin

No data available

### (e) germ cell mutagenicity;

No data available

### (f) carcinogenicity;

No data available

There are no known carcinogenic chemicals in this product

### (g) reproductive toxicity;

No data available

### (h) STOT-single exposure;

Category 3

### Results / Target organs

Respiratory system

### (i) STOT-repeated exposure;

No data available

### Target Organs

No information available.

### (j) aspiration hazard;

No data available

**Symptoms / effects, both acute and Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, delayed**

tiredness, nausea and vomiting

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## SECTION 12: Ecological information

### **Ecotoxicity effects**

Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

### **Persistence and Degradability**

No information available

### **Bioaccumulative Potential**

No information available

### **Mobility in soil**

No information available

### **Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

### **Persistent Organic Pollutant**

This product does not contain any known or suspected substance

### **Ozone Depletion Potential**

This product does not contain any known or suspected substance

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## SECTION 13: Disposal considerations

### **Waste from Residues/Unused Products**

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

### **Contaminated Packaging**

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

### **Other Information**

Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with

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## SECTION 14: Transport information

### **Road and Rail Transport**

#### **UN-No**

UN1987



Component	Chemicals (2015 Edition)	2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
2,2-Difluoroethanol			X	-	-	-	-	-	-	-	-	-

## National Regulations

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## SECTION 16: Other information

### Prepared By

Health, Safety and Environmental Department

### Revision Date

08-Oct-2025

### Revision Summary

Not applicable.

### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene. Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

### Legend

#### CAS

Chemical Abstracts Service

#### TSCA

United States Toxic Substances Control Act Section 8(b)

Inventory

#### EINECS/ELINCS

European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

#### DSL/NDSL

Canadian Domestic Substances List/Non-Domestic Substances List

#### PICCS

Philippines Inventory of Chemicals and Chemical Substances

#### ENCS

Japanese Existing and New Chemical Substances

#### IECSC

Chinese Inventory of Existing Chemical Substances

**AICS**

Australian Inventory of Chemical Substances

**KECL**

Korean Existing and Evaluated Chemical Substances

**NZIoC**

New Zealand Inventory of Chemicals

**WEL**

Workplace Exposure Limit

**TWA**

Time Weighted Average

**ACGIH**

American Conference of Governmental Industrial Hygienists

**IARC**

International Agency for Research on Cancer

**DNEL**

Derived No Effect Level

**PNEC**

Predicted No Effect Concentration

**RPE**

Respiratory Protective Equipment

**LD50**

Lethal Dose 50%

**LC50**

Lethal Concentration 50%

**EC50**

Effective Concentration 50%

**NOEC**

No Observed Effect Concentration

**POW**

Partition coefficient Octanol:Water

**PBT**

Persistent, Bioaccumulative, Toxic

**vPvB**

very Persistent, very Bioaccumulative

**ICAO/IATA**

International Civil Aviation Organization/International Air

Transport Association

**IMO/IMDG**

International Maritime Organization/International Maritime

Dangerous Goods Code

**ADR**

European Agreement Concerning the International Carriage of

Dangerous Goods by Road

**MARPOL**

International Convention for the Prevention of Pollution from

Ships

**OECD**

Organisation for Economic Co-operation and Development

**ATE**

Acute Toxicity Estimate

**BCF**

Bioconcentration factor

**VOC**

(Volatile Organic Compound)

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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