

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

# Acetic anhydride

Version number: 2  
 Issued: 2024-04-16  
 Replaces SDS: 2021-10-27



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

### 1.1. Product identifier

**Trade name**

Acetic anhydride

**CAS number**

108-24-7

**EC number**

203-564-8

**Synonyms**

acetyl acetate

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

**Relevant identified uses**

Research and development. Laboratory Chemicals. Manufacture of substances.

**Not suitable for use in**

Not suitable for human consumption or veterinary purposes.

### 1.3. Details of the supplier of the safety data sheet

**Supplier**

Molekula Group

Address

Molekula Ltd, Lingfield Way, Darlington,  
 DL1 4XX Darlington  
 United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

**Contact person**

Kevin Banks

**Email**

+44 (0) 7769276927

### 1.4. Emergency telephone number

**Poison center/Additional emergency number**

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

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## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

#### Classification

Serious eye damage, hazard category 1  
 Skin corrosion, hazard category 1B  
 Acute toxicity, oral, hazard category 4  
 Acute toxicity, inhalation, hazard category 1  
 Flammable liquids, hazard category 3

#### Hazard statements

H226, H302, H314, H330

### 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

H226 Flammable liquid and vapour.  
 H302 Harmful if swallowed.  
 H314 Causes severe skin burns and eye damage.  
 H330 Fatal if inhaled.

#### Supplemental hazard statements

EUH029 Contact with water liberates toxic gas.  
 EUH071 Corrosive to the respiratory tract.

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## **Precautionary statements**

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.  
 P231 Handle and store contents under inert gas?  
 P242 Use non-sparking tools.  
 P243 Take action to prevent static discharges.  
 P260 Do not breathe dust/fumes/gas/mist/vapours/spray.  
 P262 Do not get in eyes, on skin, or on clothing.  
 P264 Wash skin thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P272 Contaminated work clothing should not be allowed out of the workplace.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
 P302 + P352 IF ON SKIN: Wash with plenty of water/.  
 P304 + P340 IF INHALED: Remove person to fresh air and keep 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.  
 P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.  
 P310 Immediately call a POISON CENTER/doctor.  
 P320 Specific treatment is urgent (see on this label).  
 P330 Rinse mouth.  
 P362 + P364 Take off contaminated clothing and wash it before reuse.  
 P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P405 Store locked up.  
 P501 Dispose of contents/container to local regulations.

## **2.3. Other hazards**

No data available

## **SECTION 3: Composition/information on ingredients**

### **3.2. Mixtures**

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
Acetic anhydride	108-24-7 203-564-8 - -	100%	Flam. Liq. 3, Acute Tox. 4 - oral, Skin Corr. 1B, Acute Tox. 2 - inhalation	H226, H302, H314, H330 - -	-

### **Molecular weight**

102.09

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## **Substance additional information**

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

## **SECTION 4: First aid measures**

### **4.1. Description of first aid measures**

IF exposed or concerned: Get medical advice/attention. First aiders/ medical personnel need to protect themselves. Show this Safety Data Sheet (SDS) to medical personnel.

#### **Inhalation**

Toxic if inhaled. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing stops, provide artificial respiration. For breathing difficulties oxygen may be necessary.

#### **Skin contact**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER/doctor. The casualty should be transferred to hospital for further treatment.

#### **Eye contact**

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

#### **Ingestion**

IF SWALLOWED: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only if the persons are fully conscious and awake). Administer activated charcoal (20 - 40g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

#### **Information for doctors**

No data available.

### **4.2. Most important symptoms and effects, both acute and delayed**

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. Causes burns by all exposure routes.

See section 11 for more detailed information on health effects and symptoms. Causes burns by all exposure routes.

#### **Inhalation**

Single exposure may cause the following adverse effects: Causes severe burns. Difficulty in breathing. Unconsciousness, possibly death.

#### **Skin contact**

Single exposure may cause the following adverse effects: Causes severe burns. Blistering may occur. May be absorbed in the body and cause dizziness, nausea and vomiting. Unconsciousness, death.

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## Eye contact

Single exposure may cause the following adverse effects: Causes serious eye damage. Unconsciousness, possibly death.

## Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. May cause severe internal injury. Unconsciousness, possibly death.

## 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Immediately call a POISON CENTER/doctor.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

Use foam, carbon dioxide or dry powder to extinguish.

#### Unsuitable extinguishing media

Water.

### 5.2. Special hazards arising from the substance or mixture

Specific hazards: FLAMMABLE. Corrosive. Toxic. Water reactive material.

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

### 5.3. Advice for firefighters

#### Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/spray. Avoid contact with skin and eyes. For personal protection, see section 8.

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Avoid dust formation.

### 6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Risk of explosion.

### 6.3. Methods and material for containment and cleaning up

Collect with absorbent, non-combustible material into suitable containers. Remove sources of ignition. Beware of the explosion danger. Use spark-proof tools and explosion-proof equipment.

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## 6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Preventive handling precautions

For precautions see section 2.2. Do not handle until all safety precautions have been read and understood. Work under hood. Handle all packages and containers carefully to minimise spills. Do not handle broken packages without protective equipment. Take action to prevent static discharges. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Avoid ingestion and inhalation. Do not breathe dust/fume/gas/mist/vapours/spray. Keep container tightly closed. Avoid formation of vapours. The product is flammable. Look out! The product is corrosive. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Immediate first aid is necessary. Do not reuse empty containers.

#### General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Wash contaminated skin thoroughly after handling. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in a dry place. Store in a closed container.  
 Store at ambient temperature.

### 7.3. Specific end use(s)

No specific usage precautions noted.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No data available

### 8.2. Exposure controls

#### Personal Protective Equipment Symbols



#### Eye / face protection

Wear eye protection.

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## Hand protection

Wear protective gloves. Recommended gloves: Nitrile.

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

## Other skin protection

Wash skin thoroughly after handling.

## Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

## Environmental exposure controls

Avoid discharge into drains.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Physical state

Liquid

#### Colour

Colourless.

#### Odour

Pungent.

#### Melting point / freezing point

-73.1 °C

#### Boiling point or initial boiling point and boiling range

140 °C

#### Flammability

FLAMMABLE.

#### Lower and upper explosion limit

2 - 12 %

#### Flash point

49 °C

#### Auto-ignition temperature

316 °C

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## Decomposition temperature

No data available

## pH

3

## Kinematic viscosity

0.91 mPa.s at 20 °

## Solubility

No data available

## Partition coefficient n-octanol/water

No data available

## Vapour pressure

5 mbar @20 °

## Density and/or relative density

1.082 g/cm<sup>3</sup>

## Relative vapour density

No data available

## Explosive properties

Not classified as explosive.

## Particle characteristics

No data available

## 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Yes.

### 10.2. Chemical stability

Stable under the prescribed storage conditions. Moisture Sensitive.

### 10.3. Possibility of hazardous reactions

No data available

### 10.4. Conditions to avoid

Heat, sparks, flames. Water, moisture.

### 10.5. Incompatible materials

Strong acids. Water Strong reducing agents. Alcohols Bases. oxidising agents

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## 10.6. Hazardous decomposition products

See section 5.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Duration of exposure	Test animals
Acetic anhydride 108-24-7 / 203-564-8	LD50	630 mg/kg	Oral	-	Rat
Acetic anhydride 108-24-7 / 203-564-8	LD50	>4000 mg/kg	Dermal	-	Rabbit
Acetic anhydride 108-24-7 / 203-564-8	LC100	1.67 mg/l	6 hours	-	Rat
Acetic anhydride 108-24-7 / 203-564-8	LC50	400ppm	Inhalation.	6 hours	Rat

#### Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result
Acetic anhydride 108-24-7 / 203-564-8	Causes severe skin burns and eye damage.

#### Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result
Acetic anhydride 108-24-7 / 203-564-8	Causes severe skin burns and eye damage.

#### Aspiration hazard

Based on available data, the classification criteria are not met.

### 11.2. Information on other hazards

No data available

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## SECTION 12: Ecological information

### 12.1. Toxicity

No data available

### 12.2. Persistence and degradability

#### Persistence and degradability

Product / Substance name CAS / EC no.	Degradation
Acetic anhydride 108-24-7 / 203-564-8	The substance is readily biodegradable.

### 12.3. Bioaccumulative potential

#### Bioaccumulative potential

Product / Substance name CAS / EC no.	LogKow / LogPow	Bioconcentration factor (BCF)
Acetic anhydride 108-24-7 / 203-564-8	-0.27	3.16

### 12.4. Mobility in soil

#### Mobility

Product / Substance name CAS / EC no.	Mobility
Acetic anhydride 108-24-7 / 203-564-8	Decomposes in water.

### 12.5. Results of PBT and vPvB assessment

No data available

### 12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

### 12.7. Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Disposal considerations

Dispose of contents/container in accordance with local/regional/national/international regulations.

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## SECTION 14: Transport information

### 14.1. UN number

1715

### 14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

ACETIC ANHYDRIDE

IMDG proper shipping name

ACETIC ANHYDRIDE

IATA proper shipping name

Acetic anhydride

### 14.3. Transport hazard class(es)

Label

ADR/RID/ADN



8



3

IMDG



8



3

IATA



8



3

ADR / RID Class

8

ADR / RID Classification code

CF1

ADR / RID hazard identification number

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## IMDG Class

8 (3)

## IATA Class

8 (3)

## ADN Class

8

## ADN Class Code

CF1

### 14.4. Packing group

ADR / RID / ADN: II

IMDG: II

IATA: II

### 14.5. Environmental hazards

Not applicable

### 14.6. Special precautions for user

#### Special precautions for user

Tunnel restriction code: D/E

Transport category: 2

## IMDG EmS

F-E, S-C

### 14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC02

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

#### National regulations

No data available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

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## SECTION 16: Other information

### Phrase meaning

Eye Dam. 1 - Serious eye damage, hazard category 1

Skin Corr. 1B - Skin corrosion, hazard category 1B

Acute Tox. 4 - oral - Acute toxicity, oral, hazard category 4

Acute Tox. 1 - inhalation - Acute toxicity, inhalation, hazard category 1

Flam. Liq. 3 - Flammable liquids, hazard category 3

Acute Tox. 2 - inhalation - Acute toxicity, inhalation, hazard category 2

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H330 Fatal if inhaled.

EUH029 Contact with water liberates toxic gas.

EUH071 Corrosive to the respiratory tract.