



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.3

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : Propionic anhydride

Product Number : 81942

Brand : Sigma-Aldrich

Index-No. : 607-010-00-X

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. : 123-62-6

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

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.3

CHEMIKART

### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Skin corrosion (Sub-category 1B), H314

Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2 Label elements

#### Labelling according Regulation (EC) No 1272/2008

## Pictogram

|                                    |                                                                                                                                  |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Signal Word                        | Danger                                                                                                                           |
| Hazard statement(s)<br>H314        | Causes severe skin burns and eye damage.                                                                                         |
| Precautionary statement(s)<br>P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                    |
| P303 + P361 + P353                 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.                                     |
| P304 + P340 + P310                 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.             |
| P305 + P351 + P338                 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P363                               | Wash contaminated clothing before reuse.                                                                                         |
| P405                               | Store locked up.                                                                                                                 |
| Supplemental Hazard Statements     | none                                                                                                                             |

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Lachrymator.

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |                                                 |
|------------------|-------------------------------------------------|
| Synonyms         | : Propanoic anhydride                           |
| Formula          | : C <sub>6</sub> H <sub>10</sub> O <sub>3</sub> |
| Molecular weight | : 130,14 g/mol                                  |
| CAS-No.          | : 123-62-6                                      |
| EC-No.           | : 204-638-2                                     |
| Index-No.        | : 607-010-00-X                                  |

| Component                       |              | Classification                                                                                                                                                     | Concentration |
|---------------------------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>propionic acid anhydride</b> |              |                                                                                                                                                                    |               |
| CAS-No.                         | 123-62-6     | Skin Corr. 1B; Eye Dam. 1; H314, H318<br>Concentration limits:<br>>= 25 %: Skin Corr. 1B, H314; 10 - < 25 %: Skin Irrit. 2, H315; 10 - < 25 %: Eye Irrit. 2, H319; | <= 100 %      |
| EC-No.                          | 204-638-2    |                                                                                                                                                                    |               |
| Index-No.                       | 607-010-00-X |                                                                                                                                                                    |               |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO2) Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Carbon oxides

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

## **5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## **5.4 Further information**

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6: Accidental release measures**

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

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb® ).

Dispose of properly. Clean up affected area.

### **6.4 Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

#### **Advice on protection against fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

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

#### **Storage conditions**

Tightly closed. Keep locked up or in an area accessible only to qualified or authorized persons.

#### **Storage class**

Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Ingredients with workplace control parameters**

### 8.2 Exposure controls

**Personal protective equipment**

#### **Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

#### **Skin protection**

required

#### **Body Protection**

protective clothing

#### **Respiratory protection**

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

#### **Control of environmental exposure**

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                                            |                                    |
|--------------------------------------------|------------------------------------|
| a) Physical state                          | clear, liquid                      |
| b) Color                                   | colorless                          |
| c) Odor                                    | pungent                            |
| d) Melting point/freezing point            | Melting point/range: -43 °C - lit. |
| e) Initial boiling point and boiling range | 167 °C - lit.                      |
| f) Flammability (solid, gas)               | No data available                  |

|                                                 |                                                                                                                                 |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| g) Upper/lower flammability or explosive limits | Upper explosion limit: 11,9 %(V)<br>Lower explosion limit: 1,48 %(V)                                                            |
| h) Flash point                                  | 74 °C - closed cup                                                                                                              |
| i) Autoignition temperature                     | No data available                                                                                                               |
| j) Decomposition temperature                    | No data available                                                                                                               |
| k) pH                                           | No data available                                                                                                               |
| l) Viscosity                                    | Viscosity, kinematic: No data available<br>Viscosity, dynamic: 0,978 mPa.s at 30 °C, 0,853 mPa.s at 40 °C, 0,751 mPa.s at 50 °C |
| m) Water solubility                             | Decomposes in contact with water.                                                                                               |
| n) Partition coefficient: n-octanol/water       | log Pow: 0,33 at 25 °C - (ECHA), The value is given in analogy to the following substances:                                     |
| o) Vapor pressure                               | 13 hPa at 57,7 °C                                                                                                               |
| p) Density                                      | 1,015 g/mL at 25 °C - lit.                                                                                                      |
| Relative density                                | No data available                                                                                                               |
| q) Relative vapor density                       | No data available                                                                                                               |
| r) Particle characteristics                     | No data available                                                                                                               |
| s) Explosive properties                         | No data available                                                                                                               |
| t) Oxidizing properties                         | none                                                                                                                            |

## 9.2 Other safety information

|                        |                                                                     |
|------------------------|---------------------------------------------------------------------|
| Surface tension        | 29,42 mN/m at 21,4 °C<br>- Regulation (EC) No. 440/2008, Annex, A.5 |
| Relative vapor density | 4,49 - (Air = 1.0)                                                  |

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Forms explosive mixtures with air on intense heating.  
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:  
Strong oxidizing agents  
Alcohols

#### 10.4 Conditions to avoid

Strong heating.

#### 10.5 Incompatible materials

No data available

#### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

LD50 Oral - Rat - 2.360 mg/kg

Remarks: (RTECS)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: , damage of respiratory tract

LD50 Dermal - Rabbit - 10.000 mg/kg

Remarks: (RTECS)

##### Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns.

(OECD Test Guideline 404)

Remarks: The value is given in analogy to the following substances: propionic acid

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

##### Serious eye damage/eye irritation

Remarks: Causes serious eye damage.

Risk of blindness!

Lacrimal irritation due to vapours.

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

##### Respiratory or skin sensitization

No data available

##### Germ cell mutagenicity

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Remarks: The value is given in analogy to the following substances: propionic acid

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Remarks: The value is given in analogy to the following substances: Formic acid

Test Type: Micronucleus test  
Species: Chinese hamster  
Cell type: Bone marrow  
Application Route: Intraperitoneal  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: The value is given in analogy to the following substances: propionic acid

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

**Endocrine disrupting properties**

**Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Mouse - female - Dermal - 90 Days - LOAEL (Lowest observed adverse effect level) - 136,9 mg/kg

Remarks: The value is given in analogy to the following substances: propionic acid

RTECS: UF9100000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Decomposition of the substance with tissue moisture.

After absorption:

Headache  
Nausea  
Vomiting

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12: Ecological information

### 12.1 Toxicity

|                                                     |                                                                                                                                                                                                                       |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | static test LC50 - <i>Leuciscus idus</i> (Golden orfe) - > 10.000 mg/l - 96 h<br>(DIN 38412)<br>Remarks: The value is given in analogy to the following substances:<br>calcium dipropionate                           |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - <i>Daphnia magna</i> (Water flea) - > 500 mg/l - 48 h<br>(Regulation (EC) No. 440/2008, Annex, C.2)<br>Remarks: The value is given in analogy to the following substances:<br>calcium dipropionate |
| Toxicity to algae                                   | static test EC50 - <i>Desmodesmus subspicatus</i> (green algae) - > 500 mg/l - 72 h<br>(OECD Test Guideline 201)<br>Remarks: The value is given in analogy to the following substances:<br>calcium dipropionate       |
| Toxicity to bacteria                                | EC50 - <i>Pseudomonas putida</i> - 60 mg/l - 17 h<br>Remarks: (calculated on the free acid)<br>(IUCLID)                                                                                                               |

### 12.2 Persistence and degradability

Biodegradability      Result: - Readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

#### Product:

Assessment      : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7 Other adverse effects

Biological effects:

Harmful effect due to pH shift.

Discharge into the environment must be avoided.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 2496

IMDG: 2496

IATA: 2496

### 14.2 UN proper shipping name

ADR/RID: PROPIONIC ANHYDRIDE

IMDG: PROPIONIC ANHYDRIDE

IATA: Propionic anhydride

### 14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA: 8

### 14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

### 14.6 Special precautions for user

Tunnel restriction code : (E)

Further information : No data available

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## SECTION 15: Regulatory information

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

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

#### Other regulations

Take note of Dir 94/33/EC on the protection of young people at work.

### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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## SECTION 16: Other information

### Full text of H-Statements referred to under sections 2 and 3.

|      |                                          |
|------|------------------------------------------|
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation.                  |
| H318 | Causes severe skin burns and eye damage. |
| H319 | Causes serious eye damage.               |

### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See

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CHEMIKART