

**SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

Version 6.9

Revision Date 15.04.2023

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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	:	Picric acid
Product Number	:	197378
Brand	:	Aldrich
Index-No.	:	609-009-00-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.	:	88-89-1

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

Identified uses : Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Chemie GmbH  
Eschenstrasse 5  
D-82024 TAUFKIRCHEN

Telephone : +49 (0)89 6513-1130  
Fax : +49 (0)89 6513-1161  
E-mail address : technischerservice@merckgroup.com

**1.4 Emergency telephone**

Emergency Phone # : 0800 181 7059 (CHEMTREC Deutschland)  
+49 (0)696 43508409 (CHEMTREC weltweit)

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Desensitized explosives (Category 1), H206  
Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 3), H331  
Acute toxicity, Dermal (Category 3), H311



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)

H206

Fire, blast or projection hazard; increased risk of explosion if desensitizing agent is reduced.

H302

Harmful if swallowed.

H311 + H331

Toxic in contact with skin or if inhaled.

Precautionary statement(s)

P210

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P212

Avoid heating under confinement or reduction of the desensitizing agent.

P230

Keep wetted with water.

P233

Keep container tightly closed.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P370 + P380 + P375

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.

P501

Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard Statements

none

### Reduced Labeling (<= 125 ml)

Pictogram



Signal Word

Danger

Hazard statement(s)

H206

Fire, blast or projection hazard; increased risk of explosion if desensitizing agent is reduced.

H311 + H331

Toxic in contact with skin or if inhaled.

Precautionary statement(s)

P210

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P212

Avoid heating under confinement or reduction of the desensitizing agent.

P230

Keep wetted with water.

P233

Keep container tightly closed.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P370 + P380 + P375

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.



P501 Dispose of contents/ container to an approved waste disposal plant.

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.

Explosive with or without contact with air.

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : 2,4,6-Trinitrophenol

Molecular weight : 229,10 g/mol

CAS-No. : 88-89-1

EC-No. : 201-865-9

Index-No. : 609-009-00-X

Component	Classification	Concentration
<b>picric acid</b>		
CAS-No.	88-89-1	Expl. 1.1; Acute Tox. 3; H201, H301, H331, H311 >= 50 - < 70 %
EC-No.	201-865-9	
Index-No.	609-009-00-X	

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

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## 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. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### 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. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.



#### **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

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### **SECTION 5: Firefighting measures**

#### **5.1 Extinguishing media**

##### **Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) 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

Nitrogen oxides (NO<sub>x</sub>)

Combustible.

Explosive decomposition possible on heating.

Forms explosive mixtures with air on intense heating.

Avoid shock and friction.

Vapors are heavier than air and may spread along floors.

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

In the event of decomposition: danger of explosion!

Forms explosive mixtures with air on intense heating.

#### **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**

Suppress (knock down) gases/vapors/mists with a water spray jet. 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: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. 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 carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.



## 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 safe handling

Work under hood. Do not inhale substance/mixture.

#### Advice on protection against fire and explosion

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

#### 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

Keep locked up or in an area accessible only to qualified or authorized persons. Tightly closed and away from sources of ignition and heat. Observe national regulations.

Keep wetted with water. Do not allow material to become dry.

#### Storage class

Storage class (TRGS 510): 4.1A: Other explosive 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). Safety glasses

##### Body Protection

protective clothing

##### Respiratory protection

required when dusts 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 P3



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	solid
b) Color	yellow
c) Odor	No data available
d) Melting point/freezing point	Melting point/range: 121 °C
e) Initial boiling point and boiling range	No data available
f) Flammability (solid, gas)	No data available
g) Upper/lower flammability or explosive limits	No data available
h) Flash point	150 °C - closed cup
i) Autoignition temperature	300 °C
j) Decomposition temperature	No data available
k) pH	No data available
l) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
m) Water solubility	soluble
n) Partition coefficient: n-octanol/water	log Pow: 1,33
o) Vapor pressure	1 hPa at 195 °C
p) Density	1,800 g/cm <sup>3</sup> at 20 °C
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 No data available

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

sensitive to shock

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### 10.2 Chemical stability

heat-sensitive

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

Contains the following stabilizer(s):

water (>=30 - <=40 %)

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Picric acid forms salts with many metals some of which are rather sensitive to heat, friction, or impact, e.g., lead, iron, zinc, nickel, copper, etc., and should be considered dangerously sensitive. The salts formed with ammonia and amines, and the molecular complexes with aromatic hydrocarbons, etc, are in general not so sensitive. Contact of picric acid with concrete floors may form the friction-sensitive calcium salt. Dry mixtures of picric acid and aluminum powder are inert, but the addition of water causes ignition after a delay dependent upon the quantity added. Storage conditions: records of purchase dates should be maintained for each container. Material older than 2 years should be disposed. Inspect and add water every six months as needed. Rotate containers to distribute water every three months.

Avoid shock and friction.

Heating (explosive decomposition).

Strong heating.

### 10.5 Incompatible materials

Strong bases, Reducing agents, Heavy metals, Heavy metal salts, Ammoniacal plastics

### 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

Acute toxicity estimate Oral - 307,69 mg/kg

(Calculation method)

LD50 Oral - Rat - 200 mg/kg (picric acid)

Remarks: (RTECS)

Acute toxicity estimate Inhalation - 4 h - 0,7846 mg/l - dust/mist(Calculation method)

Acute toxicity estimate Inhalation - 4 h - 0,51 mg/l - dust/mist

(picric acid)

(Expert judgment)

Acute toxicity estimate Dermal - 461,69 mg/kg

(Calculation method)

Acute toxicity estimate Dermal - 300,1 mg/kg (picric acid)

(Expert judgment)

#### Skin corrosion/irritation

Remarks: No data available

#### Serious eye damage/eye irritation

Eyes - Rabbit (picric acid)

Result: No eye irritation

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

No data available

#### 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.



Discoloration of the skin., Picric acid dust causes sensitization dermatitis. This usually occurs on the face, especially around the mouth and the sides of the nose; the condition progresses from edema, through the formation of papules and vesicles, to ultimate desquamation. Inhalation of high concentrations of dust has caused unconsciousness, weakness, muscle pain, and kidney problems. Swallowing picric acid may cause a bitter taste, headache, dizziness, nausea, vomiting, and diarrhea. High doses may cause destruction of the red blood cells and damage to the kidneys and liver with blood in the urine.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (picric acid)

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## SECTION 12: Ecological information

### 12.1 Toxicity

No data available

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 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

No data available

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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: 1344

IMDG: 1344

IATA: 1344

### 14.2 UN proper shipping name

ADR/RID: TRINITROPHENOL, WETTED

IMDG: TRINITROPHENOL, WETTED

IATA: Trinitrophenol, wetted

### 14.3 Transport hazard class(es)

ADR/RID: 4.1

IMDG: 4.1

IATA: 4.1

### 14.4 Packaging group

ADR/RID: I

IMDG: I

IATA: I

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

### 14.6 Special precautions for user

Tunnel restriction code : (B)

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.

#### Authorisations and/or restrictions on use

##### National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

##### Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

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.

H201 Explosive; mass explosion hazard.

H206 Fire, blast or projection hazard; increased risk of explosion if desensitizing agent is reduced.



H301	Toxic if swallowed.
H302	Explosive; mass explosion hazard.
H311	Toxic if swallowed, in contact with skin or if inhaled.
H311 + H331	Harmful if swallowed.
H331	Toxic in contact with skin.

### Relevant changes since previous version

#### 2. Hazards identification

#### 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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