

SAFETY DATA SHEET

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

1.1 Product identifiers

Product name	Picric acid
CAS number	88-89-1
Synonyms	2,4,6-Trinitrophenol; Picronitric acid; Trinitrophenol

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

Identified uses	Laboratory chemicals.
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1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute Oral Toxicity	Category 4
Acute Inhalation Toxicity	Category 3
Acute Dermal Toxicity	Category 3

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard statements

Harmful if swallowed.
Toxic in contact with skin or if inhaled.

Precautionary statements

Prevention: Avoid breathing dust. Wash skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/ protective clothing.

IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell. Take off contaminated clothing and wash before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

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

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Explosive with or without contact with air.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Picric acid	2,4,6-Trinitrophenol; Picronic acid	88-89-1	<70%
Water	Aqua; H ₂ O	7732-18-5	>30%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled

Remove to fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

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 Rinse out with plenty of water. Remove contact lenses.

If swallowed 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

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

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 Specific hazards arising from the substance or mixture

Carbon oxides. Nitrogen oxides (NO_x). 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!

5.3 Special protective equipment and precautions 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. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

5.4 Further information

Flash Point 150 °C / 302 °F

Autoignition Temperature 300 °C / 572 °F

Explosion limits

Upper No data available.
 Lower No data available.
 Sensitivity to Mechanical Impact No information available.
 Sensitivity to Static Discharge No information available.
 NFPA

Health	Flammability	Instability	Physical hazards
3	4	4	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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. Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements. For disposal see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Work under hood. Do not inhale substance/mixture. Keep away from open flames, hot surfaces, and sources of ignition. For precautions see Section 2.2.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

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.

Incompatibilities

Strong bases, Reducing agents, Heavy metals, Heavy metal salts, Ammonia, various plastics.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value
Picric acid	TWA	0.1 mg/m ³

US. ACGIH Threshold Limit Values

Component	Type	Value
Picric acid	TWA	0.1 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
Picric acid	STEL	0.3 mg/m ³

Biological occupational exposure limits

No information available.

8.2 Exposure controls

Appropriate engineering controls

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

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.

Skin protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Body Protection

Protective clothing.

Respiratory protection

Recommended Filter type: Filter type P3.
Required when dusts are generated.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Slurry liquid
Appearance	Yellow
Odor	Odorless
Odor Threshold	No information available
pH	1.3 (1.4 %)
Melting Point/Range	121.8 °C / 251.2 °F
Boiling Point/Range	Not applicable
Evaporation Rate	No information available
Flammability (solid)	No information available
Flammability or explosive limit	No data available
Upper	
Lower	
Vapor Pressure	Negligible
Vapor Density	No information available
Density	1.767
Solubility	Slightly soluble
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	300 °C / 572 °F
Decomposition Temp	No information available
Viscosity	No information available
Molecular Formula	C ₆ H ₂ (NO ₂) ₃ OH
Molecular Weight	229.0369 g/mol
VOC Content(%)	No information available
Oxidizing properties	No information available

9.2 Other safety information

No information available.

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, Ammonia, various plastics.

10.6 Hazardous decomposition products

In the event of fire: see Section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Picric acid	200 mg/kg (Rat)	-	-

Skin corrosion/irritation

No data available.

Serious eye damage/eye irritation

No data available.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Picric acid	88-89-1	Not listed	Not listed	Not listed	Not listed	Not listed
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity - repeated exposure

No data available.

Reproductive toxicity

No data available.

Chronic effects

No data available.

11.2 Additional Information

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.

SECTION 12: Ecological information**12.1 Toxicity**

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bio accumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-no	UN1344
Proper Shipping Name	Trinitrophenol, wetted
Hazard Class	4.1
Packing Group	I

IMDG

UN-no	UN1344
Proper Shipping Name	Trinitrophenol, wetted
Hazard Class	4.1
Packing Group	I

IATA

UN-no	UN1344
Proper Shipping Name	Trinitrophenol, wetted
Hazard Class	4.1
Packing Group	I

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

See Section 2 for more information.

SARA 313 (TRI reporting)

Listed, Picric acid (CAS #88-89-1).

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed, Picric acid (CAS #88-89-1).

US. New Jersey Worker and Community Right-to-Know Act

Listed, Picric acid (CAS #88-89-1).

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, Picric acid (CAS #88-89-1).

California Proposition 65

Not listed.

SECTION 16: Other information

Issue date: 12/14/2023

Revision 1: 01/13/2025

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.