

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations SDS ID: 46541AP Issue date: 1/27/2023 Version: 1.0

SECTION 1: Identification

1 Idontific

Product form	: Substance
Substance name	: Picric acid, moistened with less than 40% water, 98.0% (calc. on dry substance, T)
Chemical name	: 2,4,6-trinitrophenol, picric acid
CAS-No.	: 88-89-1
Product code	: 4654-1-AP
Formula	: C6H3N3O7
Synonyms	: 1-Hydroxy-2,4,6-trinitrobenzene
Other means of identification	: MFCD00007102

1.2. Recommended use and restrictions on use

Use of the substance/mixture

: Laboratory chemicals Manufacture of substances Scientific research and development

1.3. Supplier

SynQuest Laboratories, Inc. Inc. P.O. Box 309 Alachua, FL, Alachua, 32615 United States of America T (386) 462-0788 - F (386) 462-7097 info@synquestlabs.com - www.synquestlabs.com

1.4. Emergency telephone number

Emergency number

: (844) 523-4086 (3E Company - Account 10069)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Explosive Category 1.1	H201	Explosive; mass explosion hazard
Flammable solids Category 1	H228	Flammable solid
Acute toxicity (oral) Category 3	H301	Toxic if swallowed
Acute toxicity (dermal) Category 3	H311	Toxic in contact with skin
Acute toxicity (inhalation) Category 3	H331	Toxic if inhaled
Skin corrosion/irritation Category 1A	H314	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Skin sensitization, category 1B	H317	May cause an allergic skin reaction
Specific target organ toxicity – Single exposure, Category 3,	H335	May cause respiratory irritation
Respiratory tract irritation		

Full text of H statements : see section 16

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2.2. GHS Label elements, including precautionary statements **GHS US labeling** Hazard pictograms (GHS US) Signal word (GHS US) : Danger Hazard statements (GHS US) : H201 - Explosive; mass explosion hazard H228 - Flammable solid H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled H314 - Causes severe skin burns and eye damage H317 - May cause an allergic skin reaction H318 - Causes serious eye damage H335 - May cause respiratory irritation Precautionary statements (GHS US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P230 - Keep wetted with appropriate material. P240 - Ground/Bond container and receiving equipment. P241 - Use explosion-proof electrical/ventilating/lighting equipment P250 - Do not subject to grinding/shock/friction. P260 - Do not breathe dust/fume/gas/mist/vapors/spray. 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 must not be allowed out of the workplace. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P301+P310 - If swallowed: Immediately call a poison center or doctor. P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting. P302+P352 - If on skin: Wash with plenty of soap and water P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. 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. P310 - Immediately call a POISON CENTER or doctor/ physician P311 - Call a POISON CENTER or doctor/physician P321 - Specific treatment (see supplemental first aid instructions on this label) P322 - Specific treatment (see supplemental first aid instruction on this label) P330 - Rinse mouth. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P361+P364 - Take off immediately all contaminated clothing and wash it before reuse. P363 - Wash contaminated clothing before reuse. P370+P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish P370+P380 - In case of fire: Evacuate area. P372 - Explosion risk in case of fire. P373 - DO NOT fight fire when fire reaches explosives. P401 - Store in accordance with local regulations on explosives. P403+P233 - Store in a well-ventilated place. Keep container tightly closed. P405 - Store locked up.

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

2.3. Other hazards which do not result in classification

No additional information available

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2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type

: Mono-constituent

Name	Product identifier	%	GHS US classification
Picric acid, moistened with less than 40% water, 98.0% (calc. on dry substance, T) (Main constituent)	CAS-No.: 88-89-1	≤ 100	Expl. 1.1, H201 Flam. Sol. 1, H228 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Skin Corr. 1A, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures		
4.1. Description of first aid measures		
First-aid measures general	: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Move the affected personnel away from the contaminated area.	
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Get immediate medical advice/attention.	
First-aid measures after skin contact	: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Get immediate medical advice/attention.	
First-aid measures after eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.	
First-aid measures after ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get immediate medical advice/attention.	
4.2. Most important symptoms and effects (acute and delayed)		
Symptoms/effects	: The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.	
Symptoms/effects after inhalation	: Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea.	

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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SECTION 5: Fire-fighting measures			
5.1. Suitable (and unsuitable) exting	uishing media		
Suitable extinguishing media	: Alcohol resistant foam. Carbon dioxide. Dry powder. Water spray. Use extinguishing media appropriate for surrounding fire.		
5.2. Specific hazards arising from the chemical			
Fire hazard Explosion hazard	: Thermal decomposition generates: Carbon oxides. Nitrogen oxides.: Explosive; fire, blast or projection hazard. Prevent shock/impact.		
5.3. Special protective equipment and precautions for fire-fighters			
Firefighting instructions Protection during firefighting	 In case of fire: Evacuate area. Wear gas tight chemically protective clothing in combination with self contained breathing apparatus. For further information refer to section 8: "Exposure controls/personal protection". 		

SECTION 6: Accidental release measures		
6.1. Personal precautions, protective equipment and emergency procedures		
General measures	: Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breathe dust.	
6.1.1. For non-emergency personnel Emergency procedures	: Only qualified personnel equipped with suitable protective equipment may intervene.	
6.1.2. For emergency responders		
Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".	

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up		
For containment Methods for cleaning up Other information	 Stop leak if safe to do so. Sweep or shovel spills into appropriate container for disposal. Minimize generation of dust. For disposal of solid materials or residues refer to section 13 : "Disposal considerations". 	

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and stora	age
7.1. Precautions for safe handling	
Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Ensure good ventilation of the work station. Do not breathe dust, mist, spray. Wear personal protective equipment. Avoid contact with skin and eyes.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
7.2. Conditions for safe storage, in	ncluding any incompatibilities
Technical measures Storage conditions	Comply with applicable regulations.Keep wetted with : water.

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Incompatible products	: TRINITROPHENOL (PICRIC ACID) WETTED.
Incompatible materials	: Refer to Section 10 on Incompatible Materials.
Storage area	: Store in dry, cool, well-ventilated area.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Picric acid, moistened with less than 40% water, 98.0% (calc. on dry substance, T) (88-89-1)		
USA - ACGIH - Occupational Exposure Limits		
Local name	Picric acid	
ACGIH OEL TWA	0.1 mg/m³	
Remark (ACGIH)	Skin sens; dermatitis; eye irr	
Regulatory reference	ACGIH 2022	
USA - OSHA - Occupational Exposure Limits		
Local name	Picric acid	
OSHA PEL TWA [1]	0.1 mg/m³	
Limit value category (OSHA)	prevent or reduce skin absorption	
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1	
USA - IDLH - Occupational Exposure Limits		
IDLH	75 mg/m³	
USA - NIOSH - Occupational Exposure Limits		
NIOSH REL TWA	0.1 mg/m³	
NIOSH REL STEL	0.3 mg/m³	
US-NIOSH chemical category	Potential for dermal absorption	
8.2. Appropriate engineering controls		

Appropriate engineering controls

: Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

protective gloves. 29 CFR 1910.138: Hand Protection

Eye protection:

Chemical goggles or safety glasses. Face shield. 29 CFR 1910.133: Eye and Face Protection

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. 29 CFR 1910.134: Respiratory Protection

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Personal protective equipment symbol(s):



Other information: Safety shoes. 29 CFR 1910.136: Foot Protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Yellow crystalline solid.
Color	: Yellow
Odor	: odorless
Odor threshold	: No data available
рН	: No data available
Melting point	: 121 – 122 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 150 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: < 1 mm Hg (at 20 °C)
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 1.8 g/ml (@ 20 °C)
Molecular mass	: 229.1039 g/mol
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: 300 °C
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

No additional information available

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10.4. Conditions to avoid

Picric acid forms salts with many metals, some of which are sensitive to heat, friction, or shock. Examples metals are lead, iron, zinc, copper, nickle... and should be considered dangerously shock sensitive. Salts and complexes formed with ammonia, amines and other organics are somewhat shock sensitive. Picric acid will form calcium salts with concetrete floors that are shock and friction sensitive. Dry mixtures of picric acid and aluminum powder are inert, but may ignite with water addition depending on amount added. When storing, the material must be inspected every six months to ensure liquid layer is present and water added accordingly. Containers must be rotated every three months to distribute water evenly. Material should be disposed of by a licensed disposal service, section 13, after two years.

10.5. Incompatible materials

Ammonia. Metals. Heavy metals. Heavy metal salts. Strong bases. Reducing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products in case of fire, see Section 5.

SECTION 11: Toxicological information

11.1. Information on toxicological effects		
Acute toxicity (dermal) :	Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.	
Picric acid, moistened with less than 40% water, 98.0% (calc. on dry substance, T) (88-89-1)		
LD50 oral rat	200 mg/kg	
ATE US (oral)	200 mg/kg body weight	
ATE US (dermal)	300 mg/kg body weight	
ATE US (gases)	700 ppmV/4h	
ATE US (vapors)	3 mg/l/4h	
ATE US (dust, mist)	0.5 mg/l/4h	
Skin corrosion/irritation :	Causes severe skin burns.	
Serious eye damage/irritation :	Causes serious eye damage.	
Respiratory or skin sensitization :	May cause an allergic skin reaction.	
Germ cell mutagenicity :	Not classified	
Carcinogenicity :	Not classified	
Reproductive toxicity :	Not classified	
STOT-single exposure :	May cause respiratory irritation.	
STOT-repeated exposure :	Not classified	
Aspiration hazard :	Not classified	
Viscosity, kinematic :	No data available	
Symptoms/effects :	The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.	
Symptoms/effects after inhalation :	Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea.	

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SECTION 12: Ecological information	
12.1. Toxicity	
No additional information available	
12.2. Persistence and degradability	
No additional information available	
12.3. Bioaccumulative potential	
No additional information available	
12.4. Mobility in soil	
No additional information available	
12.5. Other adverse effects	
No additional information available	
SECTION 13: Disposal considerations	

13.1. Disposal methods

Waste treatment methods	: Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber.
Product/Packaging disposal recommendations	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information	: Recycle the material as far as possible.

14.1. UN number		
DOT NA No UN-No. (TDG) UN-No. (IMDG) UN-No. (IATA)	: UN1344 : Not applicable : 1344 : 1344	
14.2. UN proper shipping name		
Proper Shipping Name (DOT) Proper Shipping Name (TDG) Proper Shipping Name (IMDG) Proper Shipping Name (IATA)	 Trinitrophenol, wetted Not applicable TRINITROPHENOL (PICRIC ACID), WETTED Picric acid, wetted 	

DOT Transport hazard class(es) (DOT) Hazard labels (DOT)



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TDG

Transport hazard class(es) (TDG)

: Not applicable

IMDG

Transport hazard class(es) (IMDG) Hazard labels (IMDG)



IATA Transport hazard class(es) (IATA) Hazard labels (IATA)



14.4. Packing group	
Packing group (DOT) Packing group (TDG) Packing group (IMDG) Packing group (IATA)	: I : Not applicable : I : I
14.5. Environmental hazards	
Other information	: No supplementary information available.
14.6. Special precautions for user	
DOT UN-No.(DOT) DOT Special Provisions (49 CFR 172.102)	 UN1344 162 - This material may be transported under the provisions of Division 4.1 only if it is packed so that at no time during transport will the percentage of diluent fall below the percentage that is stated in the shipping description. A8 - For combination packaging, if glass inner packaging (including ampoules) are used, they must be packed with cushioning material in tightly closed metal receptacles before packing in outer packaging. A19 - Combination packaging consisting of outer fiber drums or plywood drums, with inner plastic packaging, are not authorized for transportation by aircraft. N41 - Metal construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material. W31 - Non-bulk packagings must be hermetically sealed.
DOT Packaging Exceptions (49 CFR 173.xxx) DOT Packaging Non Bulk (49 CFR 173.xxx) DOT Packaging Bulk (49 CFR 173.xxx) DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) DOT Quantity Limitations Cargo aircraft only (49	: None : 211 : None : 1 kg : 15 kg
CFR 175.75)	. 13 kg

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	-
DOT Vessel Stowage Location	: E - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from
DOT Vessel Stowage Other	 carriage on passenger vessels in which the limiting number of passengers is exceeded. 28 - Stow "away from" flammable liquids, 36 - Stow "away from" heavy metals and their compounds
TDG Emergency Response Guide (ERG) Number	: 113
IMDG	
Special provision (IMDG)	: 28
Limited quantities (IMDG)	: 0
Excepted quantities (IMDG)	: E0
Packing instructions (IMDG)	: P406
Packing provisions (IMDG)	: PP26, PP31
EmS-No. (Fire)	: F-B - FIRE SCHEDULE Bravo - EXPLOSIVE SUBSTANCES AND ARTICLES
EmS-No. (Spillage)	: S-J - SPILLAGE SCHEDULE Juliet - WETTED EXPLOSIVES AND CERTAIN SELF-HEATING SUBSTANCES
Stowage category (IMDG)	: E
Segregation (IMDG)	: SG7, SG30
Properties and observations (IMDG)	: Desensitized explosive.Substance in pure form consists of yellow crystals. Soluble in water. Explosive and sensitive to friction in the dry state. May form extremely sensitive compounds with heavy metals or their salts. Harmful if swallowed or by skin contact.
PCA Excepted quantities (IATA)	: E0 . Fastiddar
PCA Limited quantities (IATA)	: Forbidden : Forbidden
PCA limited quantity max net quantity (IATA)	
PCA packing instructions (IATA)	: 451 . 1kg
PCA max net quantity (IATA)	: 1kg : 451
CAO packing instructions (IATA)	
CAO max net quantity (IATA) Special provision (IATA)	: 15kg : A40
ERG code (IATA)	: 3E
	. SE

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Picric acid, moistened with less than 40% water, 98.0% (calc. on dry substance, T) (88-89-1)

Subject to reporting requirements of United States SARA Section 313

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Sec	ction 313 or Title III of the Superfund An	nendments and Reauthorization Act (SARA) of 1986
and 40 CFR Part 372.		

100%

Picric acid,	moistened with less than 40% water,
98.0% (calc	. on dry substance, T)

CAS-No. 88-89-1

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15.2. International regulations

CANADA

Picric acid, moistened with less than 40% water, 98.0% (calc. on dry substance, T) (88-89-1)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Picric acid, moistened with less than 40% water, 98.0% (calc. on dry substance, T) (88-89-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Picric acid, moistened with less than 40% water, 98.0% (calc. on dry substance, T) (88-89-1)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the Japanese ENCS (Existing New Chemical Substances) inventory

Listed on the Japanese ISHL (Industrial Safety and Health Law)

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Japanese Poisonous and Deleterious Substances Control Law

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Picric acid, moistened with less than 40% water, 98.0% (calc. on dry substance, T) (88-89-1)		
	U.S Massachusetts - Right To Know List U.S New Jersey - Right to Know Hazardous Substance List U.S Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S Pennsylvania - RTK (Right to Know) List	

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

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Full text of H-phrases	
H201	Explosive; mass explosion hazard
H228	Flammable solid
H301	Toxic if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H331	Toxic if inhaled

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Full text of H-phrases		
H335	May cause respiratory irritation	
NFPA health hazar	:	3 - Materials that, under emergency conditions, can cause serious or permanent injury.
NFPA fire hazard	:	3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.
NFPA reactivity	:	4 - Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures.
Hazard Rating		
Health	:	3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability	:	3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB IC)
Physical	:	4 Severe Hazard - Materials that are readily capable of explosive water reaction, detonation or explosive decomposition, polymerization, or self-reaction at normal temperature and pressure.

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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 offered solely for your consideration, investigation, and verification. It does not represent any guarantee of the properties of the product nor that the hazard precautions or procedures described are the only ones which exist. SynQuest shall not be held liable or any damage resulting from handling or from contact with the above product.