

MSDS: PICRIC ACID

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MDL INFORMATION SYSTEMS, INC.
1281 Murfreesboro Road, Suite 300
Nashville, TN 37217-2423
1-615-366-2000

EMERGENCY TELEPHONE NUMBER:
1-800-424-9300 (NORTH AMERICA)
1-703-527-3887 (INTERNATIONAL)

SUBSTANCE: PICRIC ACID

TRADE NAMES/SYNONYMS:

2, 4, 6-TRINITROPHENOL; MELINITE; PICRONITRIC ACID; PHENOL TRINITRATE;
TRINITROPHENOL; CARBAZOTIC ACID; 2-HYDROXY-1, 3, 5-TRINITROBENZENE; NITROXANTHIC
ACID; PICRIC ACID; PICRAL; LYDDITE; PERTITE; SHIMOSE; PHENOL, 2, 4, 6-TRINITRO-;
C.I. 10305; PICRIC ACID, 98%; NA 1344; STCC 4917120; C6H3N3O7; OHS18860; RTECS
TJ7875000

CHEMICAL FAMILY: hydroxyls, aromatic, nitro

CREATION DATE: Oct 30 1984

REVISION DATE: Sep 10 1998

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: PICRIC ACID

CAS NUMBER: 88-89-1

EC NUMBER (EINECS): 201-865-9

PERCENTAGE: <90.0

COMPONENT: WATER

CAS NUMBER: 7732-18-5

EC NUMBER (EINECS): 231-791-2

PERCENTAGE: >10.0

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=1 REACTIVITY=4

EC CLASSIFICATION (ASSIGNED):

E Explosive

T Toxic

R 2-4-23/24/25

EC Classification may be inconsistent with independently-researched data.

EMERGENCY OVERVIEW:

PHYSICAL FORM: dispersion

ODOR: odorless

MAJOR HEALTH HAZARDS: harmful if swallowed, respiratory tract irritation, skin
irritation, eye irritation, allergic reactions

PHYSICAL HAZARDS: May explode if exposed to shock, friction or heating.

Flammable solid. Explosive if dry.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, kidney damage, liver damage, coma

LONG TERM EXPOSURE: rash, itching, kidney damage, liver damage

SKIN CONTACT:

SHORT TERM EXPOSURE: same as effects reported in short term ingestion, irritation, allergic reactions, kidney damage, liver damage

LONG TERM EXPOSURE: kidney damage, liver damage

EYE CONTACT:

SHORT TERM EXPOSURE: irritation, eye damage

LONG TERM EXPOSURE: same as effects reported in short term exposure

INGESTION:

SHORT TERM EXPOSURE: vomiting, digestive disorders, headache, dizziness, blood disorders, kidney damage, liver damage, convulsions, coma

LONG TERM EXPOSURE: kidney damage, liver damage

CARCINOGEN STATUS:

OSHA: N

NTP: N

IARC: N

SECTION 4 FIRST AID MEASURES

INHALATION: Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention.

SKIN CONTACT: Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.

EYE CONTACT: Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

INGESTION: Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN: For ingestion, consider gastric lavage and activated charcoal slurry.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. Avoid shock or friction. Explosion hazard. Explosive if dry. Keep material wetted.

EXTINGUISHING MEDIA: Flood with water. If no water is available, use dry chemical or earth.

FIRE FIGHTING: For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn.

FLASH POINT: 302 F (150 C) (CC)

AUTOIGNITION: 572 F (300 C)

FLAMMABILITY CLASS (OSHA): III B

SECTION 6 ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Do not touch spilled material. Small spills: Flood with water. Large spills: Wet down area with water. Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry.

SECTION 7 HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Store in a tightly closed container. Avoid heat, flames, sparks and other sources of ignition. Avoid shock or friction. Specialized training required for handling and disposal. Store in a cool, dry place. Store in a well-ventilated area. Store outside or in a detached building. Keep separated from incompatible substances.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

PICRIC ACID:

- 0.1 mg/m³ OSHA TWA (skin)
- 0.1 mg/m³ ACGIH TWA
- 0.1 mg/m³ NIOSH recommended TWA 10 hour(s) (skin)
- 0.3 mg/m³ NIOSH recommended STEL
- 0.1 mg/m³ UK OES TWA
- 0.3 mg/m³ UK OES STEL

MEASUREMENT METHOD: Particulate filter; Methanol/Water; High-pressure liquid chromatography with ultraviolet detection; NIOSH 11(4) # S228

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

- 0.5 mg/m³
 - Any dust and mist respirator.
- 1 mg/m³
 - Any dust and mist respirator.
 - Any supplied-air respirator.

2.5 mg/m³

Any supplied-air respirator.

Any powered, air-purifying respirator with a dust and mist filter.

5 mg/m³

Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.

Any supplied-air respirator with a full facepiece.

Any powered, air-purifying respirator with a full facepiece and a high-efficiency particulate filter.

Any self-contained breathing apparatus with a full facepiece.

Any supplied-air respirator with a full facepiece.

75 mg/m³

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Escape -

Any air-purifying respirator with a full facepiece and a high-efficiency particulate filter.

Any appropriate escape-type, self-contained breathing apparatus.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid

PHYSICAL FORM: dispersion

ODOR: odorless

TASTE: bitter taste

MOLECULAR WEIGHT: 229.11

MOLECULAR FORMULA: (N-O₂)₃-C₆-H₂-O-H

BOILING POINT: Not available

MELTING POINT: 252-253 F (122-123 C)

VAPOR PRESSURE: 0.0075 mmHg @ 122 C

VAPOR DENSITY (air=1): 7.9

SPECIFIC GRAVITY (water=1): 1.767

WATER SOLUBILITY: 1.4% @ 20 C

PH: Not available

VOLATILITY: Not available

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not available

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:

Soluble: acetone, acetic acid, pyridines

Moderately Soluble: alcohol, benzene, chloroform, ether

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: May explode if exposed to shock, friction or heating.

CONDITIONS TO AVOID: Keep material wetted. Avoid heat, flames, sparks and other sources of ignition. Avoid shock or friction.

INCOMPATIBILITIES: bases, combustible materials, metals, metal salts, oxidizing materials, reducing agents

PICRIC ACID:

ALUMINUM + WATER: Ignites.

AMMONIA: Forms explosive salt.

BASES: Form explosive salts.

COMBUSTIBLE MATERIALS: May cause ignition on contact or explosion of finely divided materials. May increase the burning rate.

CONCRETE: Forms explosive calcium salt.

COPPER: Forms extremely shock-sensitive compound.

LEAD: Forms extremely shock-sensitive compound.

MERCURY: Forms extremely shock-sensitive compound.

METALS AND SALTS: May form explosive salts.

OXIDIZERS (STRONG): Fire and explosion hazard.

REDUCING MATERIALS: May cause ignition or explosion on contact. May increase the burning rate.

UREA PERCHLORATE: Forms explosive mixture.

ZINC: Forms extremely shock-sensitive compound.

HAZARDOUS DECOMPOSITION:

Thermal decomposition products: oxides of carbon, nitrogen

POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

PICRIC ACID:

TOXICITY DATA:

200 mg/kg oral-rat LD50; 56300 ug/kg intraperitoneal-mouse LD50; 60 mg/kg subcutaneous-dog LDLo; 60 mg/kg unreported-dog LDLo; 250 mg/kg oral-cat LDLo; 120 mg/kg oral-rabbit LDLo; 100 mg/kg oral-guinea pig LDLo; 200 mg/kg subcutaneous-pigeon LDLo

LOCAL EFFECTS:

Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:

Toxic: ingestion

TARGET ORGANS: immune system (sensitizer), liver, kidneys

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders

MUTAGENIC DATA:

mutation in microorganisms - Salmonella typhimurium 5 umol/plate (+/-S9);
mutation in microorganisms - Escherichia coli 1800 ppm (-S9); sex chromosome loss and non disjunction - Drosophila melanogaster oral 1250 umol/L; sex chromosome loss and non disjunction - Drosophila melanogaster parenteral 1500 ppm

ADDITIONAL DATA: Alcohol may enhance the toxic effects.

HEALTH EFFECTS:

INHALATION:

ACUTE EXPOSURE:

PICRIC ACID: High concentrations of the dust may cause irritation of the respiratory tract resulting in coughing, sore throat, and possibly damage to the lungs. One worker experienced temporary coma, followed by weakness, myalgia, anuria, and later, polyuria. Other effects on the blood, liver, and kidneys may occur as in acute ingestion.

CHRONIC EXPOSURE:

PICRIC ACID: Chronic inhalation of vapor or dusts may cause yellow stains of the teeth, skin, conjunctiva and hair, pruritis, skin eruptions, and liver and kidney damage.

SKIN CONTACT:

ACUTE EXPOSURE:

PICRIC ACID: May cause irritation and sensitization dermatitis in previously exposed persons. Readily absorbed through the skin and effects on the blood, liver and kidneys may occur as detailed in acute ingestion.

CHRONIC EXPOSURE:

PICRIC ACID: Repeated or prolonged exposure may result in eczema and sensitization dermatitis, usually on the face, especially around the mouth and side of the nose; the condition may progress from formation of papules and vesicles to desquamation. Yellowing of the skin and hair is possible. Repeated absorption may result in liver and kidney damage.

EYE CONTACT:

ACUTE EXPOSURE:

PICRIC ACID: The dust or fumes may cause severe conjunctivitis, palpebral edema, keratitis and yellow vision. Direct contact with the liquid may cause temporary corneal injury.

CHRONIC EXPOSURE:

PICRIC ACID: Repeated or prolonged exposure may cause conjunctivitis.

INGESTION:

ACUTE EXPOSURE:

PICRIC ACID: Following ingestion of 1 to 5 grams, there may be headache, bitter taste, vertigo, severe gastroenteritis with nausea, vomiting, and diarrhea, yellowing of the skin and eyes, and muscle pain. Hemorrhagic nephritis with hematuria, albuminuria, and polyuria, intravascular hemolysis, and acute hepatitis may also occur. Death may result from renal lesions and anuria and may be preceded by jaundice, coma, and convulsions.

CHRONIC EXPOSURE:

PICRIC ACID: Repeated exposure may cause liver and kidney damage.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: 130000 ug/L 96 hour(s) LC50 (Mortality) Sheepshead minnow (Cyprinodon variegatus)

INVERTEBRATE TOXICITY: 90000 ug/L 48 hour(s) EC50 (Immobilization) Water flea (Daphnia magna)

ALGAL TOXICITY: 62700 ug/L 96 hour(s) EC50 (Photosynthesis) Diatom (Skeletonema costatum)

FATE AND TRANSPORT:

BIOCONCENTRATION: <1 ug/L 42 week(s) BCF (Residue) Rainbow trout, donaldson trout (Oncorhynchus mykiss) 450 ug/L

ENVIRONMENTAL SUMMARY:

Harmful to aquatic life.

SECTION 13 DISPOSAL CONSIDERATIONS

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. D003. Dispose in accordance with all applicable regulations.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101 SHIPPING NAME-UN NUMBER:
Picric acid, wet ($\geq 10\%$ water)-NA1344

U.S. DOT 49 CFR 172.101 HAZARD CLASS OR DIVISION:
4.1

U.S. DOT 49 CFR 172.101 PACKING GROUP:
I

U.S. DOT 49 CFR 172.101 AND SUBPART E LABELING REQUIREMENTS:
Flammable solid

U.S. DOT 49 CFR 172.101 PACKAGING AUTHORIZATIONS:
EXCEPTIONS: None
NON-BULK PACKAGING: 49 CFR 173.211
BULK PACKAGING: None

U.S. DOT 49 CFR 172.101 QUANTITY LIMITATIONS:
PASSENGER AIRCRAFT OR RAILCAR: Forbidden
CARGO AIRCRAFT ONLY: Forbidden

LAND TRANSPORT ADR/RID: No classification assigned.

AIR TRANSPORT IATA/ICAO: No classification assigned.

MARITIME TRANSPORT IMDG: No classification assigned.

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:
TSCA INVENTORY STATUS: Y

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CERCLA SECTION 103 (40CFR302.4): N

SARA SECTION 302 (40CFR355.30): N

SARA SECTION 304 (40CFR355.40): N

SARA SECTION 313 (40CFR372.65): Y

PICRIC ACID

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):

ACUTE: Y

CHRONIC: Y

FIRE: Y

REACTIVE: Y

SUDDEN RELEASE: Y

OSHA PROCESS SAFETY (29CFR1910.119): N

STATE REGULATIONS:

California Proposition 65: N

EUROPEAN REGULATIONS:

EC NUMBER (EINECS): 201-865-9

EC RISK AND SAFETY PHRASES:

R 2 Risk of explosion by shock, friction, fire or other sources of ignition.

R 4 Forms very sensitive, explosive metallic compounds.

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

S 1/2 Keep locked-up and out of reach of children.

S 35 This material and its container must be disposed of in a safe way.

S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

kysel i na pi krova. txt

GERMAN REGULATIONS:

WATER HAZARD CLASS (WGK): 2 (Official German Classification)

SECTION 16 OTHER INFORMATION

MSDS SUMMARY OF CHANGES

SECTION 7 HANDLING AND STORAGE

SECTION 14 TRANSPORT INFORMATION

SECTION 15 REGULATORY INFORMATION

©COPYRIGHT 1984-1998 MDL INFORMATION SYSTEMS, INC. ALL RIGHTS RESERVED.