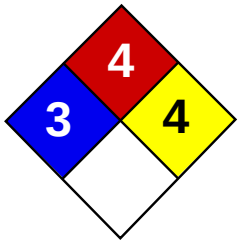

Health	2
Fire	1
Reactivity	4
Personal Protection	X

Material Safety Data Sheet
Picric acid MSDS

Section 1: Chemical Product and Company Identification

Product Name: Picric acid

Catalog Codes: SLP4363, SLP1546

CAS#: 88-89-1

RTECS: TJ7875000

TSCA: TSCA 8(b) inventory: Picric acid

CI#: Not available.

Synonym: 2,4,6-trinitrophenol; 1,3,5-Trinitrophenol

Chemical Name: Picric Acid

Chemical Formula: C6H2(NO3)3OH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Picric acid	88-89-1	100

Toxicological Data on Ingredients: Picric acid: ORAL (LD50): Acute: 200 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (irritant), of eye contact (irritant). Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator). Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to mucous membranes. The substance may be toxic to blood, kidneys, liver. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust

can produce varying degree of respiratory irritation or lung damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 300°C (572°F)

Flash Points: CLOSED CUP: 150°C (302°F).

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances: Explosive in presence of open flames and sparks, of shocks, of heat, of metals, of alkalis.

Fire Fighting Media and Instructions:
Explosive. Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Do not fight fire. Evacuate surrounding areas.

Special Remarks on Fire Hazards:
Dry mixtures of picric acid and aluminum powder are inert, but addition of water causes ignition after a delay depending upon the quantity added. Flammable solid when exposed to heat or flame.

Special Remarks on Explosion Hazards:
Picric acid and bases form explosive salts. Ammonia and metals with picric acid give results similar to bases. Contact between picric acid and concrete floors leads to the formation of explosion-sensitive salts, such as calcium picrate. Mixtures with

uranium perchlorate are extremely powerful explosives. It forms unstable salts with concrete, ammonia, and bases. Many of these are heat, friction, or impact-sensitive. An explosive mixture results when the aqueous solution crystallizes. Keep Picric acid wet with water. Do not let dry picric acid (crystals) form in container or on the cap threads of container. A severe explosion hazard when shocked or exposed to heat. Dried out material may explode if exposed to heat, flame, friction or shock; treat as an explosive. Keep material wet with water or treat as an explosive. Explodes when heated to 300 C.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Explosive. Explosive, class 1.4. Flammable solid. Corrosive solid. Poisonous solid. Stop leak if without risk. Do not touch damaged container or spilled material. Do not clean-up or dispose except under supervision of a specialist. Do not operate radio transmitters within 100 m of an electric detonator. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Do not allow this material to dry out. Do not let dry picric acid (crystals) form in container or on the cap threads of container. strong incandescent light. Ground all equipment containing material. Empty containers may contain hazardous residue and pose a fire risk. Do not ingest. Do not breathe dust. Take precautionary measures against electrostatic discharges. Avoid shock and friction. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, alkalis. Keep away from heat. Keep away from sources of ignition. Keep away from direct sunlight or

Storage:
Store in a segregated, approved and labeled area away from acute fire hazards and powerful oxidizing materials. Isolate from Organic materials. Do not store in metal containers. Keep container in a cool, well-ventilated area. Do not allow this material to dry out. Keep Picric acid wetted with a minimum of 30% water. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.1 (mg/m3) from ACGIH (TLV) [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Crystals solid.)

Odor: Odorless.

Taste: Bitter.

Molecular Weight: 229.11 g/mole

Color: Yellow.

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: 122.5°C (252.5°F)

Critical Temperature: Not available.

Specific Gravity: 1.763 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: 7.9 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is equally soluble in oil and water; log(oil/water) = -0.02

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether, acetone.

Solubility:
Easily soluble in acetone. Soluble in hot water, diethyl ether. Partially soluble in cold water. Soluble in ethanol. Solubility in ethanol: 1 g/12 ml ethanol @ 25 deg. C Solubility in water: 1.27 x 10+4 mg/l @ 25 C; 1g/78 ml water @ 25 C; 1 g/15 ml boiling water. Solubility in Benzene: 1 g/10 ml @ 25 deg. C. Solubility in Chloroform: 1 g/35 ml @ 25 deg. C. Solubility in Ether: 1 g/65 ml @ 25 deg. C

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability:
High temperatures, mechanical shock, ignition sources. Keep Picric acid wet with water. Do not allow water to evaporate from product. An explosive mixture results when the aqueous solution crystallizes. Do not let dry picric acid (crystals) form in container or on the cap threads of container. Dry picric acid is explosive. It can explode on impact if water content is below 10%.

Incompatibility with various substances:
Highly reactive with metals, alkalis. Reactive with oxidizing agents, reducing agents. The product may undergo hazardous decomposition, condensation or polymerization, it may react violently with water to emit toxic gases or it may become self-reactive under conditions of shock or increase in temperature or pressure.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Incompatible with copper, lead, zinc and other metals, salts, plaster, concrete, ammonia, oxidizing materials, reducing agents, albumin, gelatin, alkaloids(bases). Can react vigorously with oxidizing materials. Dry mixtures of picric acid and aluminum powder are inert, but addition of water causes ignition after a delay depending upon the quantity added. Picric acid and bases form explosive salts. Contact between picric acid and concrete floors leads to the formation of explosion-sensitive salts, such as calcium picrate. Mixtures with uranium perchlorate are extremely powerful explosives. It forms unstable salts with concrete, ammonia, and bases. Many of these are heat, friction, or impact-sensitive.

Special Remarks on Corrosivity: Corrodes metals

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 200 mg/kg [Rat].

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. Causes damage to the following organs: mucous membranes. May cause damage to the following organs: blood, kidneys, liver.

Other Toxic Effects on Humans:
Very hazardous in case of skin contact (irritant). Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: May affect genetic material (mutagenic)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes skin irritation. It may be absorbed by the skin. If it is absorbed through the skin and it can cause symptoms similar to those of ingestion. Eyes: Causes eye irritation. May result in corneal injury. Inhalation: May cause respiratory tract irritation. May cause effects similar to those for ingestion. May affect the kidneys. Ingestion: Harmful if swallowed! May cause gastrointestinal tract irritation with abdominal pain, nausea, vomiting, diarrhea. May affect behavior/central nervous system (vertigo, headache, stupor, tremor, convulsions), cardiovascular system, metabolism, kidneys/urinary system (anuria, oliguria, renal leisons, hemorrhagic nephritis), liver (acute hepatitis, jaundice). Chronic Potential Health Effects: Skin: Prolonged or repeated skin contact may cause allergic or sensitization dermatitis. Eyes: Prolonged or repeated eye contact may cause conjunctivitis. Prolonged or repeated skin and eye contact may also cause yellow staining of skin and eyes, and "yellow vision." Ingestion: Prolonged or repeated ingestion will cause symptoms similar to that of acute ingestion.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short/long term degradation products are to be expected.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 4.1: Flammable solid.

Identification: : Trinitrophenol, wetted with not less than 30% water, by mass UNNA: 1344 PG: I

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Picric acid Illinois toxic substances disclosure to employee act: Picric acid Rhode Island RTK hazardous substances: Picric acid Pennsylvania RTK: Picric acid Minnesota: Picric acid Massachusetts RTK: Picric acid Massachusetts spill list: Picric acid New Jersey: Picric acid New Jersey spill list: Picric acid California Director's List of Hazardous Substances: Picric acid TSCA 8(b) inventory: Picric acid SARA 313 toxic chemical notification and release reporting: Picric acid

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC). CLASS E: Corrosive solid. CLASS F: Dangerously reactive material.

DSCL (EEC):
R2- Risk of explosion by shock, friction, fire or other sources of ignition. R4- Forms very sensitive explosive metallic compounds. R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. S28- After contact with skin, wash immediately with plenty of [***] S35- This material and its container must be disposed of in a safe way. S37- Wear suitable gloves. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 4

Personal Protection: x

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 4

Reactivity: 4

Specific hazard:

Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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