

# Safety Data Sheet

## Picric Acid - Orange G Solution

### Section 1 - Chemical Product and Company Identification

**SDS Name:** Picric Acid-Orange G Solution

**Catalog Numbers:** F-380-3, F-381-3

**Company Identification:** Transene Company, Inc., DBA ROWLEY BIOCHEMICAL, Inc.  
10 ELECTRONICS AVENUE  
DANVERS, MA 01923

**For information, call:** 978-739-4883

**Emergency Number:** 800-424-9300

**For CHEMTREC assistance, call:** 800-424-9300

### Section 2 - Hazards Identification

#### GHS Classifications

H225-Flammable liquids: 2

H302-Acute toxicity, oral: 4

H313-Acute toxicity, dermal: 5

H314-Skin corrosion/irritation: 1A

H317-Sensitisation, skin: 1A

H318-Serious eye damage/eye irritation: 1

H331-Acute toxicity, inhalation: 3

H370-Specific target organ toxicity, single exposure: 1

H372-Specific target organ toxicity, repeated exposure: 1

#### Pictograms or Hazard symbols and Hazard statement(s):



Signal Word: Danger

#### Hazard Statements:

H225-Highly flammable liquid and vapour

H302-Harmful if swallowed

H313-May be harmful 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  
H370-Causes damage to organs (target organs: respiratory system, central nervous system, and optic nerve)  
H372-Causes damage to organs through prolonged or repeated exposure (target organs: kidney, liver, spleen, and blood)

## **Precautionary Statements:**

P210-Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.  
P233-Keep container tightly closed.  
P240-Ground and bond container and receiving equipment.  
P241-Use explosion-proof electrical/ventilating/lighting equipment.  
P242-Use non-sparking tools.  
P243-Take action to prevent static discharges.  
P260-Do not breathe dust/fume/gas/mist/vapours/spray.  
P261-Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264-Wash 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 should not be allowed out of the workplace.  
P280-Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312-If swallowed: Call a Poison Center/doctor if you feel unwell.  
P301+P330+P331-If swallowed: Rinse mouth. Do NOT induce vomiting.  
P302+P312-If on skin: Call a Poison Center/doctor if you feel unwell.  
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.  
P308+P311-If exposed or concerned: Call a Poison Center/doctor.  
P310-Immediately call a Poison Center/doctor.  
P311-Call a Poison Center/doctor.  
P314-Get medical advice/attention if you feel unwell.  
P330-Rinse mouth.  
P333+P313-If skin irritation or rash occurs: Get medical advice/attention.  
P362+P364-Take off contaminated clothing and wash it before reuse.  
P363-Wash contaminated clothing before reuse.  
P370+P378-In case of fire: Use dry chemical, carbon dioxide, dry sand, water spray or alcohol-resistant foam to extinguish.  
P403+P233-Store in a well-ventilated place. Keep container tightly closed.  
P403+P235-Store in a well-ventilated place. Keep cool.  
P405-Store locked up.  
P501-Dispose of contents/container in accordance with local/regional/national/international regulations.

### Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
1936-15-8	Orange G	0.2 w/v
88-89-1	Picric Acid	7.5 w/v
64-17-5	Ethyl Alcohol	76 v/v
67-56-1	Methyl Alcohol	4 v/v
7732-18-5	Water	Balance

### Section 4 - First Aid Measures

**Eye Exposure:** In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Get immediate medical attention.

**Dermal Exposure:** In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention.

**Oral Exposure:** If swallowed, get immediate medical advice. Do NOT induce vomiting. Rinse mouth with water.

**Inhalation Exposure:** If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

### Section 5 - Fire Fighting Measures

**General Information:** Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

**Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, dry sand, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

**Hazardous Combustion Products:** Carbon oxides, nitrogen oxides, sulfur oxides, sodium oxides, formaldehyde, irritating and toxic fumes and gases.

**Flash Point:** Not available

**Autoignition Temperature:** Not available

**Explosion Limits, Lower:** Not available

**Upper:** Not available

**NFPA Rating:** (estimated) Health: 2; Flammability: 4; Instability: 0

Note: Static discharge could act as an ignition source.

Note: Picric acid can explode on contact when dry. **Do not allow this material to dry out.** Do not let dry picric acid (crystals) form in container or on the cap threads of the container. A severe explosion hazard when shocked or exposed to heat. Dried out picric acid may explode if exposed to heat, flame, friction, or shock. May form shock-sensitive mixtures on contact with metals. Can violently decompose at elevated temperatures.

## Section 6 - Accidental Release Measures

### **Procedure(s) of Personal Precaution(s):**

Wear personal protective equipment. Do not ingest or inhale. Do not get on skin or clothing. Do not get in eyes. Ensure adequate ventilation. Keep away from heat. Eliminate all sources of ignition. Take precautionary measures against static discharge.

**Methods for Cleaning up:** Absorb with sand, earth, or vermiculite. Never allow spilled material to dry. Carefully absorb with material that is dampened with water and containerize for proper disposal. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharge. Do not release to the environment. Do not release to drains.

## Section 7 - Handling and Storage

Use care when handling. Wear personal protective equipment. Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Keep in a tightly closed and non-metal container. Store in a cool, dry, well-ventilated area. Keep away from incompatible materials. Protect from heat. Vapors heavier than air may travel considerable distance and ignite or explode. Use only non-sparking tools. Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metals parts of the equipment must be grounded.

Note: Static discharge could act as an ignition source.

Note: Picric acid can explode on contact when dry. **Do not allow this material to dry out.** Do not let dry picric acid (crystals) form in container or on the cap threads of the container. A severe explosion hazard when shocked or exposed to heat. Dried out picric acid may explode if exposed to heat, flame, friction, or shock. May form shock-sensitive mixtures on contact with metals. Can violently decompose at elevated temperatures.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

**Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

**Exposure Limits:**

Chemical Name	ACGIH - TLV	NIOSH - IDLH	OSHA - Final PELs
Orange G CAS#1936-15-18	Not listed	Not listed	Not listed
Picric Acid CAS#88-89-1	0.1 mg/m <sup>3</sup> TWA	0.1 mg/m <sup>3</sup> TWA 0.3 mg/m <sup>3</sup> STEL	0.1 mg/m <sup>3</sup> TWA
Ethyl Alcohol CAS#64-17-5	1000 ppm STEL	1000 ppm TWA 1900 mg/m <sup>3</sup> TWA 3300 ppm IDLH	1000 ppm TWA 1900 mg/m <sup>3</sup> TWA
Methyl Alcohol CAS#67-56-1	200 ppm TWA 250 ppm Skin STEL	200 ppm TWA 260 mg/m <sup>3</sup> TWA 250 ppm STEL 325 mg/m <sup>3</sup> STEL 6000 ppm IDLH	200 ppm TWA 260 mg/m <sup>3</sup> TWA

**OSHA Vacated PELs:** Ethyl Alcohol: 1000 ppm TWA; 1900 mg/m<sup>3</sup> TWA  
Methyl Alcohol: 200 ppm TWA; 260 mg/m<sup>3</sup> TWA; 250 ppm STEL;  
325 mg/m<sup>3</sup> Skin STEL

## Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance:** Yellow-orange

**Odor:** Alcohol-like

**Vapor Pressure:** Not available

**Odor Threshold:** Not available

**Vapor Density:** Not available

**pH:** Not available

**Relative Density:** Not available

**Melting point/freezing point:** Not available

**Solubility:** Soluble in water

**Boiling Point:** Not available

**Flash Point:** Not available  
**Evaporation Rate:** Not available  
**Flammability (solid, gas):** Not available  
**Partition coefficient: n-octanol/water:** Not available  
**Autoignition Temperature:** Not available  
**Decomposition Temperature:** Not available  
**Viscosity:** Not available  
**Specific Gravity/Density:** Not available

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable under normal temperatures and pressures. Reacts violently with oxidizers: Risk of fire/explosion. Heat and sunlight can contribute to instability. Do not allow material to dry out. Do not let dry picric acid (crystals) form in container or on the cap threads of the container. Dry picric acid is explosive.

**Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures. Avoid heat, flames, sparks, hot surfaces. Avoid incompatible materials, ignition sources, excess heat, oxidizers, shock, and friction. Do not let dry picric acid (crystals) form in container or on the cap threads of container. Dry picric acid is explosive.

**Incompatibilities with Other Materials:** Oxidizing agents, reducing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide, bases, metals, copper, lead, zinc, heavy metal salts, concrete, ammonia, and amines.

**Hazardous Decomposition Products:** Carbon oxides, nitrogen oxides, sulfur oxides, sodium oxides, formaldehyde, irritating and toxic fumes and gases.

Note: Picric acid can explode on contact when dry. **Do not allow this material to dry out.** Do not let dry picric acid (crystals) form in container or on the cap threads of the container. A severe explosion hazard when shocked or exposed to heat. Dried out picric acid may explode if exposed to heat, flame, friction, or shock. May form shock-sensitive mixtures on contact with metals. Can violently decompose at elevated temperatures.

## Section 11 - Toxicological Information

**CAS#1936-15-8 Orange G: RTECS#: QJ650000**

LD50 Oral: Not available

LD50 Dermal: Not available

LC50 Inhalation: Not available

**Carcinogenicity:** Orange G CAS#1936-15-8 is not listed by NTP, ACGIH, OSHA, or California Prop. 65. Orange G is listed by IARC (Group 3, Not Classifiable as to its Carcinogenicity to Humans).

**Germ cell mutagenicity:** Cytogenetic analysis, hamster ovary.

**Reproductive Effects:** Pig (oral) – testes, epididymis, sperm duct.

**CAS#88-89-1 Picric Acid: RTECS#: TJ7875000**

LD50 Oral: 200 mg/kg (rat)

LD50 Dermal: 461.54 mg/kg (estimate, calculation method)

LC50 Inhalation: 0.7708 mg/L (estimate, calculation method)

May cause skin sensitization.

**Carcinogenicity:** Picric Acid CAS#88-89-1 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop. 65.

**CAS#64-17-5 Ethyl Alcohol: RTECS#: KQ6300000**

LD50 Oral: 10470 mg/kg (rat)

LD50 Dermal: Not available

LC50 Inhalation: 124.7 mg/L 4h (rat)

Draize test, rabbit, eye: 500 mg/24h Mild Irritant.

Skin: Repeated exposure may cause skin dryness or cracking.

Ethyl Alcohol overexposure may lead to headache, dizziness, tiredness, nausea, and vomiting.

**Carcinogenicity:** Ethyl Alcohol CAS#64-17-5 is not listed by OSHA. Ethyl Alcohol is listed by IARC (Group 1, Carcinogenic to Humans), NTP (Known Carcinogen), and ACGIH (A3, Animal Carcinogen). Ethyl Alcohol is listed by California Prop. 65 as a developmental carcinogen (alcoholic beverages).

**CAS#67-56-1 Methyl Alcohol: RTECS#: PC1400000**

LD50 Oral: 100.1 mg/kg (expert judgement)

LD50 Dermal: 300.1 mg/kg (expert judgement)

LC50 Inhalation: 3.1 mg/L 4h vapor (expert judgement)

**Investigated as a mutagen, reproductive effector.**

Draize test, rabbit, eye: 100 mg/24h Moderate Irritant.

Draize test, rabbit, skin: 20 mg/24h Moderate Irritant.

**Carcinogenicity:** Methyl Alcohol CAS#67-56-1 is not listed by IARC, NTP, ACGIH, or OSHA. Methyl Alcohol is listed by California Prop. 65 as a developmental carcinogen.

**Information on the likely routes of exposure:** Routes of entry anticipated: oral, dermal, inhalation, and eye.

**Epidemiology:** Not available.

**Teratogenicity:** Not available.

**Reproductive Effects:** Pig (oral) – testes, epididymis, sperm duct (Orange G)

**Developmental Effects:** Not available.

**Neurotoxicity:** Not available.

**Mutagenicity:** Cytogenetic analysis, hamster ovary (Orange G)

**Specific Organ Toxicity, Single Exposure:** Respiratory system, central nervous system, optic nerve.

**Specific Organ Toxicity, Repeated Exposure:** Kidney, liver, spleen, blood.

**Symptoms associated with exposure:** Corrosive material. Picric acid causes skin irritation and it may be absorbed through the skin. May cause itching, rashes, hives, redness, burning sensation. Picric acid has been shown to cause symptoms when absorbed

through the skin; like those when ingested. Will cause eye irritation and may result in corneal injury leading to blindness. If swallowed, may cause gastrointestinal tract irritation with abdominal pain, nausea, vomiting, diarrhea, dizziness, headache, and stomach irregularities. May affect behavior/central nervous system (vertigo, headache, stupor, tremor, convulsions), cardiovascular system, metabolism, kidneys/urinary system (anuria, oliguria, renal lesions, hemorrhagic nephritis), liver (acute hepatitis, jaundice). Prolonged or repeated skin contact may cause allergic or sensitization dermatitis. Prolonged or repeated exposure can defat the skin and lead to irritation, cracking, and/or dermatitis. May cause conjunctivitis in the eyes and yellow staining of the skin and eyes. This is also called "yellow vision". Eye contact may result in corneal damage, blindness, pain, irritation, watering, redness, tearing, blurred or double vision. Causes damage to organs if in contact with skin, if inhaled, or if swallowed.

**The toxicological properties of this material have not been thoroughly investigated.**

## Section 12 - Ecological Information

**Ecotoxicity:** Do not release to the environment. Do not release to drains. Toxic to aquatic life with long lasting effects. May cause long-term adverse effects to the environment.

**CAS#64-17-5 Ethyl Alcohol:**

LC50, freshwater fish: 14200 mg/L 96h (pimephales promelas)(fathead minnow)

EC50, freshwater algae: 275 mg/L 72h (chlorella vulgaris)

EC50, water flea: 9268 mg/L 48h

EC50, water flea: 10800 mg/L 24h

IC50, bacteria: >1000 mg/L 3h (activated sludge)

EC50, microtox: 34634 mg/L 30min (photobacterium phosphoreum)

EC50, microtox: 35470 mg/L 5min (photobacterium phosphoreum)

**CAS#67-56-1 Methyl Alcohol:**

LC50, freshwater fish: 15400 mg/L 96h flow-through (lepomis macrochirus)(bluegill)

LC50, freshwater fish: 19000 mg/L 96h (oncorhynchus mykiss)(rainbow trout)

EC50, water flea: 18260 mg/L 96h semi-static (daphnia magna)

ErC50, algae: 22000 mg/L 96h static (pseudokirchneriella subcapitata)(green algae)

IC50, bacteria: >1000 mg/L 3h (activated sludge)

**Persistence and degradability:** Not available.

**Bio-accumulative potential:** Not available.

**Mobility:** Will likely be mobile in the environment due to its water solubility and volatility.

## Section 13 - Disposal Considerations

**DISPOSAL:** Dispose of in accordance with all federal, state, and local regulations.

## Section 14 – Transport Information

### **DOT**

Proper shipping name: Flammable Liquids, Corrosive, N.O.S. (SD Alcohol & Picric Acid Solution)

UN2924

PG II

Hazard Class 3, 8

## Section 15 - Regulatory Information

### **Canada Regulatory Information**

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the SDS contains all the information required by the CPR.

## Section 16 - Additional Information

**SDS Creation Date:** 4-29-22

**Revision #1:** 8-21-24

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Rowley Biochemical, Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages, howsoever arising, even if Rowley Biochemical, Inc. has been advised of the possibility of such damages.*