

Safety Data Sheet

MacFarlane's Working Solution

Section 1 - Chemical Product and Company Identification

SDS Name: MacFarlane's Working Solution

Catalog Numbers: F-380-6A

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

H290-Corrosive to metals: 1

H302-Acute toxicity, oral: 4

H314-Skin corrosion/irritation: 1B

H317-Sensitisation, skin: 1A

H318-Serious eye damage/eye irritation: 1

H370-Specific target organ toxicity, single exposure: 1

H372-Specific target organ toxicity, repeated exposure: 1

86% of the mixture consists of ingredients of unknown acute dermal toxicity.

10% of the mixture consists of ingredients of unknown acute inhalation toxicity.

Pictograms or Hazard symbols and Hazard statement(s):



Signal Word: Danger

Hazard statements:

H225-Highly flammable liquid and vapour

H290-May be corrosive to metals

H302-Harmful if swallowed

H314-Causes severe skin burns and eye damage
H317-May cause an allergic skin reaction
H318-Causes serious eye damage
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.
P234-Keep only in original packaging.
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.
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 or doctor/physician if you feel unwell.
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.
P308+P311-If exposed or concerned: Call a Poison Center/doctor.
P310-Immediately call a Poison Center or doctor/physician.
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.
P390-Absorb spillage to prevent material damage.
P403+P235-Store in a well-ventilated place. Keep cool.
P405-Store locked up.
P406-Store in corrosive resistant/container with a resistant inner liner.
P501-Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent
12501-23-4	Phosphotungstic Acid Hydrate	10 w/v
88-89-1	Picric Acid	1 w/v

64-17-5	Ethyl alcohol	76 v/v
67-56-1	Methyl alcohol	4 v/v

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. Call a physician.

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

Oral Exposure: If swallowed, seek 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, phosphorous oxides, nitrogen oxides, phosphorous trihydride (phosphine), and formaldehyde.

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: 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.

NOTE: Static discharge could act as an ignition source.

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.

Methods for Cleaning up: Absorb with inert material such as sand, earth, or vermiculite. Do NOT absorb with combustible material such as saw dust or cellulosic material. Carefully sweep up and containerize for proper disposal. Use only non-sparking tools. Use explosion-proof equipment and 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. Store in a cool, dry, and well-ventilated area. Keep in a tightly closed and non-metal container. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting/equipment. Use proper grounding procedures to avoid static electricity. Protect from heat. Keep away from incompatible materials. Vapors heavier than air may travel considerable distance and ignite or explode.

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.

NOTE: Static discharge could act as an ignition source.

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:

Evaporation Rate: Not available
Flammability (solid, gas): Not available
Partition coefficient: n-octanol/water: Not available
Auto-ignition 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.

Conditions to Avoid: Avoid direct sunlight and extremely high or low temperatures. Avoid all possible sources of ignition (spark or flame). Keep away from hot surfaces and avoid incompatible materials.

Incompatibilities with Other Materials: Strong oxidizing agents, strong bases, reducing agents, acids, alkali metals, heavy metals, heavy metal salts, various plastics, 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, and potassium dioxide.

Hazardous Decomposition Products: Carbon oxides, phosphorous oxides, nitrogen oxides, phosphorous trihydride (phosphine), and formaldehyde.

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#12501-23-4 Phosphotungstic Acid Hydrate:

LD50 Oral: 300-2000 mg/kg (rat)

LD50 Dermal: Not available

LC50 Inhalation: Not available

Carcinogenicity: Phosphotungstic Acid Hydrate CAS#12501-23-4 is not listed by IARC, NTP, ACGIH, OSHA, or California Prop 65.

CAS#88-89-1 Picric Acid:

LD50 Oral: 307.69 mg/kg (calculation method)

LD50 Oral: 200 mg/kg (rat)

LD50 Dermal: 461.54 mg/kg (calculation method)

LD50 Intraperitoneal: 56.3 mg/kg (mouse)

LC50 Inhalation: 0.7708 mg/L (calculation method)

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 (rat) 4h

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 only).

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

LD50 Oral: 100.1 mg/kg

LD50 Dermal: 300.1 mg/kg

LC50 Inhalation: 3.1 mg/L 4h (rat)

May cause skin and eye irritation.

Methyl Alcohol may cause blindness: Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea, and vomiting.

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, eye.

Epidemiology: Not available.

Teratogenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects: Not available.

Neurotoxicity: Not available.

Mutagenicity: Not available.

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

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

Symptoms associated with exposure: Prolonged or repeated exposure can defat the skin and lead to irritation, cracking, and/or dermatitis. Eye contact may result in corneal damage, blindness, pain, irritation, watering, redness, blurred or double vision. Causes damage to organs if in contact with skin, if inhaled or if swallowed. May cause cough, shortness of breath, headache, nausea, vomiting.

Note: Picric acid causes skin irritation and it may be absorbed through the skin. It 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. Toxic if swallowed. May cause gastrointestinal tract irritation with abdominal pain, nausea,

vomiting, and diarrhea. 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. Causes serious eye irritation. May cause conjunctivitis in the eyes and yellow staining of the skin and eyes. May cause corneal injury. May cause a strange visual effect known as "yellow-tainted vision."

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. May cause long-term adverse effects to the environment.

CAS#12501-23-4 Phosphotungstic Acid Hydrate:

EC50, water flea: 70.8 mg/L 48h static (daphnia magna)

EC50, bacteria: >1000 mg/L 3h static (activated sludge)

EC50, algae: 7.8 mg/L 72h static (pseudokirchneriella subcapitata)(green algae)

CAS#64-17-5 Ethyl Alcohol:

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

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

EC50, water flea: 9268 mg/L 48h, 10800 mg/L 24h

EC50, water flea: 10800 mg/L 24h

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: >10000 mg/L 96h (pimephales promelas)(fathead minnow)

EC50, water flea: >10000mg/L 24h

EC50, algae: 22000 mg/L 96h static (pseudokirchneriella subcapitata)(green algae)

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

EC50, microtox: 39000 mg/L 25min

EC50, microtox: 40000 mg/L 15min

EC50, microtox: 43000 mg/L 5min

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 & Phosphotungstic Acid Solution)

UN2924

PG II

Hazard class 3 (flammable), 8 (corrosive)

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: 10-24-22

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.