



Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	Toxic compound, do not ingest or inhale. Avoid all contact with this material.	

Section I. Chemical Product and Company Identification

Chemical Name	Methyl Orange (0.1% in Water)[for Titration]		
Catalog Number	M0017	Supplier	TCI America 9211 N. Harborgate St. Portland OR 1-800-423-8616
Synonym	Cl# 13025		
Chemical Formula	C ₁₄ H ₁₄ N ₃ NaO ₃ S		
CAS Number	547-58-0 7732-18-5 (water)	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Methyl Orange (0.1% in Water)[for Titration]	547-58-0 7732-18-5 (water)	ca. 0.1% ca. 99.9%	Not available.	Rat LD ₅₀ (oral) 60 mg/kg Mouse LD ₅₀ (intraperitoneal) 101 mg/kg (water) Rat LD ₅₀ (oral) >90 mL/kg Mouse LD ₅₀ (intraperitoneal) 190 gm/kg Mouse LD ₅₀ (intravenous) 25 gm/kg

Section III. Hazards Identification

Acute Health Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Not available. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section IV. 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. 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. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO ₂), sulfur oxides (SO _x). Some metallic oxides.		
Fire Hazards	Not available.		

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Emergency phone number (800) 424-9300

Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.


Section VI. Accidental Release Measures

Spill Cleanup Instructions	Toxic material. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.
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Section VII. Handling and Storage

Handling and Storage Information	TOXIC. Keep locked up. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively.
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Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
	
Exposure Limits	Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Red, Clear.)	Solubility	Soluble in 500 parts water; more soluble in hot water. Practically insoluble in alcohol.
Specific Gravity	1 (water)		
Molecular Weight	327.34	Partition Coefficient	Not available.
Boiling Point	100 °C (212 °F) (water)	Vapor Pressure	Not available.
Melting Point	Not available.	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with strong oxidizing agents.

Section XI. Toxicological Information

RTECS Number	DB6327000 ZC0110000 (water)
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD ₅₀ (oral) 60 mg/kg Mouse LD ₅₀ (intraperitoneal) 101 mg/kg (water) Rat LD ₅₀ (oral) >90 mL/kg Mouse LD ₅₀ (intraperitoneal) 190 gm/kg Mouse LD ₅₀ (intravenous) 25 gm/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Not available. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Acute Toxic Effects Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death.
Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity Not available.

Environmental Fate Methyl orange's production and use as a pH indicator and as a dye for textiles may result in its release to the environment through various waste streams. The ionic state of methyl orange makes this compound essentially non-volatile, therefore methyl orange should exist solely in the particulate phase in the ambient atmosphere. Particulate-phase methyl orange may be physically removed from the air, mainly by wet deposition. An estimated Koc of 240 suggests that methyl orange will have moderate mobility in soil although its ionic nature may result in ion-exchange processes with clay that would retard leaching. The volatilization of the dye from moist soil surfaces to air will not be important as methyl orange is an ionic compound. Based on limited data, this compound is expected to be resistant to aerobic biodegradation in both soil and water; methyl orange was not degraded over 5 days in an aqueous BOD screening test. Under anaerobic conditions, methyl orange should readily biodegrade. It may adsorb to clay sediments and particulate matter in the water due to ion-exchange processes. The loss of the dye from water surfaces by volatilization should not be important due to its ionic nature. The potential for bioconcentration in aquatic organisms is expected to be low based on an estimated BCF value of 30. Occupational exposure may be through inhalation of dusts and dermal contact with this compound at workplaces where methyl orange is produced or used. The general population may be exposed to methyl orange via dermal contact with products containing this compound.

Section XIII. Disposal Considerations

Waste Disposal Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification DOT Class 6.1: Toxic material

PIN Number UN1602

Proper Shipping Name Dyes, liquid, toxic, n.o.s.

Packing Group (PG) III

DOT Pictograms



Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA) This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.

WHMIS Classification (Canada) CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
On DSL

EINECS Number (EEC) 208-925-3
231-791-2 (water)

EEC Risk Statements R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.

Japanese Regulatory Data ENCS No. 5-243; 5-4278; 5-4287

Section XVI. Other Information

Version 1.0
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Notice to Reader

TCl laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.