SECTION 4 : FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with plenty of water for at least 20 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention if irritation persists, or symptoms of overexposure become apparent.
Skin Contact:	Immediately wash skin with plenty of water for at least 20 minutes, while removing contaminated clothing and shoes. Get medical attention especially, if irritation develops, persists, or symptoms of overexposure become apparent.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Keep warm. Get immediate medical attention.
Ingestion:	If swallowed, call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting unless instructed by medical personnel. Get medical attention.

SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION

Catalog No. 12320

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Skin Protection Description:	Wear suitable protective clothing to prevent contact with skin.
Hand Protection Description:	Wear appropriate protective gloves. Consult glove manufacturers for glove permeability data.
Eye/Face Protection:	Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166.
Respiratory Protection:	A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited to airborne concentrations that are typically within 10 times the exposure limit. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHAs 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirators use.
Other Protective:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

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SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

Catalog No. 12320

Physical State/Appearance:	Solid
Color:	Orange or yellow
pH:	6 (5 g/L @ 20°C (68°F))
Flash Point:	No data
Boiling Point:	No data
Melting Point:	>300°C (572°F)
Solubility in Water:	5 g/L @ 20°C (68°F)
Density:	No data
Molecular Formula:	$C_{14}H_{14}N_3NaO_3S$
Molecular Weight:	327.34

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SECTION 10 : STABILITY and REACTIVITY

Catalog No. 12320

Conditions to Avoid:	High temperatures, flames and sparks.
Incompatibilities with Other Materials:	Oxidizing agents.
Possible Decomposition Product:	Carbon monoxide. Oxides of sulphur.

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SECTION 11 : TOXICOLOGICAL INFORMATION

Catalog No. 12320

Methyl Orange :

RTECS Number:	DB6327000
Eye Effect:	No data reported in the cited references as of the revision date.
Skin Effects:	No data reported in the cited references as of the revision date.
Ingestion Effects:	Oral - rat LD50: 60 mg/kg (RTECS)
Inhalation Effects:	No data reported in the cited references as of the revision date.
Mutagenicity:	Human mutation data reported. (RTECS).
Other Toxicological Information:	Intraperitoneal - mouse LD50: 101 mg/kg

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SECTION 12 : ECOLOGICAL INFORMATION

Catalog No. 12320

Ecotoxicity:	LC50 Mysidopsis spp. 3.7 mg/L/96H (DOSE). May be toxic to aquatic organisms.
Bioaccumulation:	Not expected to significantly bioaccumulate and/or bioconcentrate in aquatic organisms. Estimated BCF 30 (HSDB).
Biodegredation:	Not biodegradable in soil and water, BOD 0% after 5 days (HSDB). Readily photodegradable in water (DOSE).
Environmental Stability:	Not expected to cause long-term effects in the environment.

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SECTION 13 : DISPOSAL CONSIDERATIONS

Catalog No. 12320

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in

1. American Chemical Society, STN Easy Online Database
2. Brethericks Reactive Chemical Hazards Database. Version 2.
3. Gassarett and Doulls Toxicology, The Basic Science of Poisons.
4. Hawleys Condensed Chemical Dictionary, Thirteenth Edition
5. IARC monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, WHO International Research on Cancer.
6. Industrial Hygiene and Toxicology, by F.A. Patty.
7. National Library of Medicine, Department of Health and Human Services, Hazardous Substances Data Bank (HSDB).
8. National Toxicology Program (NTP) Eighth Report on Carcinogens, 1997.
9. NIOSH Registry of Toxic Effects of Chemical Substances (RTECS) and Pocket Guide to Chemical Hazards.
10. OSHA Hazard Communication Standard, 1910.1200 and Z Tables.
11. Sax Dangerous Properties of Industrial Materials. Tenth Edition.
12. The Merck Index: An Encyclopedia of Chemicals and Drugs. Merck and Company. Twelfth Edition 1998.
13. Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environmental and Biological Exposure Indices. TLV Booklet, 2001.

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