

School Material Safety Data Sheet

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METHYL RED
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SECTION 1. INTRODUCTORY INFORMATION

MATERIAL NAME AND FORMULA: METHYL RED; $(CH_3)_2NC_6H_4NNC_6H_4COOH$

SYNONYMS: C. I. Acid Red 2; C. I. 13020; *p*-Dimethylaminoazobenzenecarboxylic Acid;
2-[[4-(Dimethylamino) phenyl]azo]benzoic acid

CAS NO.: 0493-52-7

TYPICAL COMPOSITION: Methyl Red, ca 100%

DOT CLASSIFICATION: Not Found

EPA CLASSIFICATION: Not Found

MANUFACTURER'S INFORMATION: Always request material safety data sheets from your chemical supplier. These should indicate the manufacturer's emergency telephone number. See the Resources/Manufacturers Index for some of the larger manufacturers and available telephone numbers.

DESCRIPTION: Methyl red is available as a dark red powder or glistening violet crystals. It is also available as a 0.1% alcoholic indicator solution.

PRELIMINARY INFORMATION: Methyl red has been used as an acid-base indicator. It is less commonly used today because of its easy reduction and resulting fading of color. Methyl red would not be likely to be found in large quantities in schools. Its most common area of use is the chemistry lab. Methyl red appears to present few hazards if used with care and reasonable precautions are taken (see note in sect. 2).



SECTION 2. USE AND STORAGE INFORMATION

— PRELIMINARY PLANNING CONSIDERATIONS —

- **PROVIDE FOR SAFE DISPOSAL OF ALL CHEMICAL WASTE** generated in the lab. Check applicable regulations prior to use.

- Wear safety glasses or goggles and appropriate protective clothing (rubberized apron, etc.) during all experiments.

- Be sure that eyewash station and safety shower are in good working order.

- Wear rubber gloves as needed to avoid repeated or prolonged skin contact with this chemical.

Note: Genium reference 511 characterizes methyl red as a substance "with greater hazardous nature than potential usefulness" and recommends bromphenol blue or bromthymol blue as alternatives. The specific nature of the hazard is not identified.

— USAGE PRECAUTIONS AND PROCEDURES —

- **READ THE LABEL** and follow all precautions.

- Practice good housekeeping to avoid unintentional mixing of incompatible materials. Do not allow residues or dust to build up in the lab or work area.

- For safety, **DO NOT WEAR CONTACT LENSES IN THE LABORATORY**; soft lenses may absorb irritants, and all lenses may concentrate them.

Particles can also adhere to contact lens surfaces and cause corneal damage.

- After working with this material, always wash hands and face before eating, drinking, or smoking.

- Do not smoke in storage or use area.

- Keep methyl red away from strong oxidizing agents and sources of heat or ignition.

- Avoid creating airborne dust conditions.

- Keep this material away from notebooks, textbooks, and personal belongings to avoid contamination and the transport of chemical residues out of the lab/work area.

- Do not let methyl red come into contact with eyes, skin, or clothing. Avoid inhaling the dust or solution mist from this chemical. Do not taste or swallow this substance.

- Clean up spilled material promptly and thoroughly.

- Methyl red indicator prepared in alcohol solution can be a fire hazard; some preparations call for a saturated solution in 50% ethyl alcohol (see Genium School MSDS 180).

— ADDITIONAL INFORMATION —

Methyl red does not polymerize. It is stable at room temperature under normal conditions of handling and storage.

- Incompatible materials include strong oxidizers.

- Bromocresol green may prove to be a suitable alternative to methyl red; it has more color stability and exhibits a sharper color change.

— PREFERRED STORAGE LOCATION AND METHODS —

- Storage area should be cool and well ventilated. Containers should be tightly closed.

- Do not store chemicals alphabetically by name; store them by chemical family, instead, to keep compatibles together.

- Protect all chemical containers from physical damage and keep them out of direct sunlight.

- Do not permit smoking in areas where chemicals are stored.

- Purchase only amounts equivalent to one year's needs.

- Store with compatible materials on sturdy shelving. Store away from oxidizing agents.

SECTION 3. SPILLS AND DISPOSAL PROCEDURES

IF MATERIAL IS SPILLED:

- Ventilate area of spill.

- Clean up spilled material promptly and thoroughly.

- Cleanup personnel should wear personal protective equipment to prevent skin or eye contact and inhalation of dust or vapor.

- For liquid (solution) spills, cover material with an inert solid absorbent (vermiculite, dry sand, etc.) and scoop it into an appropriate container (with a secure lid) for disposal in accordance with existing regulations. Dike the spill area with an inert absorbent material, as needed, to contain the spilled material.

- Spilled alcoholic solutions of methyl red can present a fire hazard; eliminate all possible sources of ignition and provide maximum ventilation, as well.

DISPOSAL OF SMALL QUANTITIES:

NOTE: Emptied containers could contain chemical residues; handle with care.

- Your supplier should be able to provide detailed disposal recommendations. Follow all applicable regulations for disposal of methyl red.

FOR THE DISPOSAL OF LARGER AMOUNTS contact a licensed disposal company.

SECTION 4: HEALTH HAZARDS

Methyl red has not been identified as a known or suspected carcinogen by the NTP, IARC, or OSHA.

Current OSHA PEL and ACGIH TLV: 8-hr TWA: Not Found

LD₅₀, Oral, TD₀₁: 12 g/kg (57 Weeks, Continuous)

- Health hazards from methyl red in a school situation, involving small quantities, seem to be unlikely.
- Irritation to eyes, skin, and nasal passages, especially in sensitive individuals, are possible from contact or inhalation.
- No acute or chronic effects of methyl red have been reported in the references consulted.

SECTION 5: FIRST AID PROCEDURES

Eye contact:

- Flush eyes promptly, including under the eyelids, with plenty of running water. Continue for at least 15 minutes.
- Get medical attention if irritation continues.*

Skin contact:

- Wash exposed areas of skin with soap and water.
- Get medical attention if irritation occurs.*

Inhalation:

- Remove victim to fresh air; restore/support his breathing as necessary.
- Get medical help if victim is breathing with difficulty or coughing.*

Ingestion:

- Rinse victim's mouth thoroughly with water. Contact medical personnel.*
- Do not induce vomiting unless instructed by a physician to do so.
- Never give anything by mouth to someone who is unconscious or convulsing.

* Get medical help (in school, paramedic, or community) for further treatment, observation, and support after first aid.

SECTION 6: FIRE PROCEDURES AND DATA

- Methyl red is a combustible solid and therefore a slight fire hazard when exposed to heat or flame. Toxic and/or irritating products of decomposition of methyl red may also be present in a fire situation. Alcoholic solutions of methyl red present an additional fire hazard.
- Extinguishing media: carbon dioxide, water fog, dry chemical, or alcohol type of foam.
- A water spray may be used to cool fire-exposed containers and disperse vapors.

HAZARDOUS DECOMPOSITION PRODUCTS INCLUDE: Toxic and/or irritating oxides of nitrogen and carbon.

FLASH POINT: Not Found

AUTOIGNITION TEMPERATURE: Not Found

FLAMMABILITY LIMITS IN AIR (Vol %): Not Found

SECTION 7: PHYSICAL DATA

BOILING POINT (@ 1 atm.): Not Found

VAPOR PRESSURE (@ 20°C, mm Hg): Negligible

SOLUBILITY IN WATER: Insoluble*

INDICATOR COLOR (0.1% Alcoholic Soln.): pH4.4: Red; pH 6.2: Yellow

DENSITY: Not Found

MELTING POINT: Begins to melt at 356°F (180°C)

FORMULA WEIGHT: 269.29

% VOLATILE: ca 0

*Soluble in alcohol, ether, and glacial acetic acid.

REFERENCES: Genium Industrial MSDS 639 (11/87) and references 1, 5, 7, 73, 81-94, 103, 506, 510, 511, 521.

(see glossary for titles)

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