

ARKACHEM

SAFETY DATA SHEET (SDS) — 16-SECTION FORMAT

METHYLISOTHIAZOLINONE (MIT)

This document is an ARKACHEM-prepared, science-based SDS-style safety information sheet. It is not a manufacturer-issued SDS and does not certify a particular batch, grade, purity, particle-size distribution, impurity profile, regulatory status, or conformity to USP/EP/BP/FCC or other specifications. Where a property depends on grade, composition, particle size, stereochemistry, hydration state, or supplier, that limitation is stated. If a relevant datum is unavailable or not applicable, it is identified as such rather than estimated.

Product identifier	METHYLISOTHIAZOLINONE (MIT)
CAS No.	2682-20-4
Formula	C4H5NOS
Molecular weight	115.15 g/mol
Synonyms	2-Methyl-4-isothiazolin-3-one; 2-methyl-4-isothiazolin-3-one; MIT
Supplier / responsible party	ARKACHEM — general safety information; product-specific supplier details should be taken from the commercial invoice/SDS.

1. IDENTIFICATION

Recommended use	Raw material for industrial, cosmetic, pharmaceutical, food or other applications only where the actual grade and applicable regulations permit.
Restrictions on use	Do not use outside the intended application or contrary to applicable laws, product specifications, or supplier instructions.
Emergency information	For a real incident, contact local emergency/poison-control services and provide the actual product label and supplier SDS.

2. HAZARD(S) IDENTIFICATION

General hazard summary	Potent preservative/biocide with significant skin sensitization potential. Concentrated material can cause severe skin and eye irritation or damage. Harmful exposure can occur by inhalation, ingestion or skin contact.
GHS / CLP classification	Commonly classified as hazardous, including skin sensitization and serious eye/skin hazards; exact classification depends on concentration, purity and jurisdiction. Commercial preservative solutions may have additional hazards from solvents and co-actives.
Signal word / pictograms	Do not assign a universal label from this general sheet where classification varies by grade, concentration or jurisdiction. The actual product label/SDS controls.
Other hazards	Dust, heat, contamination, incompatibility, or grade-specific impurities may create hazards not captured by a generic substance description.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance / mixture	The material identified above is treated as a substance where chemically discrete; for natural UVCB materials or commercial polymers, composition is intrinsically complex.
Identity data	CAS: 2682-20-4; Formula: C4H5NOS; Molecular weight: 115.15 g/mol
Impurities / additives	No batch-specific impurity profile is asserted. For commercial grades, consult the actual specification and supplier SDS/COA.

4. FIRST-AID MEASURES

Inhalation	Inhalation: fresh air and medical assessment if symptomatic.
Skin contact	Remove contaminated clothing. Wash affected area thoroughly with water and mild soap. Obtain medical attention if irritation, sensitization, burns or persistent symptoms occur.
Eye contact	Rinse cautiously with clean water for at least several minutes. Remove contact lenses if easy to do. Continue rinsing. Seek medical evaluation for persistent pain, redness or visual disturbance.
Ingestion	Rinse mouth. Do not induce vomiting unless directed by medical personnel or poison-control services. Seek medical advice for significant ingestion or symptoms.
Most important symptoms	Symptoms are material-specific and are summarized in Section 11. Delayed or severe symptoms require professional medical assessment.

Medical attention / special treatment	Treat symptomatically unless a material-specific antidote or procedure is known to medical personnel.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Use extinguishing media appropriate to the surrounding fire. Thermal decomposition may generate irritating/toxic fumes including nitrogen-, sulfur- and carbon-containing products. Firefighters should use SCBA in significant fires.
Unsuitable media	No universal restriction; avoid extinguishing methods that spread burning molten material or generate dangerous dust clouds.
Specific hazards	Thermal decomposition products depend on the chemical structure and conditions. Combustible organics may produce carbon oxides and irritating fumes; inorganic materials may generate mineral or phosphorus-containing products.
Firefighter PPE	Use protective clothing and self-contained breathing apparatus where smoke, decomposition products, dust or oxygen-deficient atmospheres may occur.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Restrict access. Wear chemical-resistant gloves, eye/face protection and suitable respiratory protection if aerosol may form. Prevent entry into drains. Absorb with compatible inert material and collect in closed containers.
Environmental precautions	Prevent uncontrolled discharge to drains, soil and surface waters. Large releases should be reported/managed according to local requirements.
Containment / cleanup	Use compatible non-sparking tools where flammable dust/vapor is possible. Place recovered material in suitable closed containers. Do not mix unknown residues with incompatible waste.
Secondary hazards	Dust clouds, slippery hydrated polymers, hot/molten waxes, and ignition sources may create secondary hazards depending on material.

7. HANDLING AND STORAGE

Safe handling	Use good industrial hygiene. Avoid unnecessary skin/eye contact and inhalation of dust, vapor or aerosol. Do not eat, drink or smoke while handling. Wash hands after work.
Storage	Store tightly closed, cool and well ventilated, away from incompatible chemicals. Follow supplier temperature and concentration specifications for solutions.
Incompatibilities	Keep away from strong oxidizers and any material specifically identified as incompatible for the actual substance. For mixtures/formulations, use the supplier SDS.
Packaging	Use the original compatible packaging where possible; keep containers properly labeled and closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits	No universal single occupational limit should be assumed. Use closed handling, local exhaust and strict skin/eye protection. Prevent aerosol generation.
Engineering controls	Prefer enclosure, local exhaust ventilation, dust collection and process automation over reliance on PPE alone.
Respiratory protection	Use a properly selected particulate/vapor respirator when engineering controls are insufficient and where a risk assessment requires it. Respirator selection must follow local occupational-safety rules.
Eye/face protection	Safety glasses with side shields for routine handling; chemical splash goggles or face shield where splashing or corrosive/irritant concentrates are possible.
Skin protection	Chemical-resistant gloves selected for the actual chemical and contact time. Protective clothing for industrial handling; thermal gloves for hot/molten waxes.
Hygiene	Provide eyewash and safety shower facilities where significant exposure is possible. Remove contaminated clothing and launder before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless to pale yellow liquid/solid depending on purity and formulation
Odor	Characteristic, grade-dependent
Water solubility	Soluble in water; commercial formulations are commonly aqueous
Molecular weight	115.15 g/mol
Melting point	Approximately 42–43 °C for pure MIT; formulation values differ
Boiling/decomposition	Not reliably represented by a single value for commercial solutions

pH	Grade/formulation-dependent
Stability	Sensitive to formulation conditions; follow supplier specifications

10. STABILITY AND REACTIVITY

Reactivity	No unusual reactivity should be assumed under recommended storage; grade-specific behavior must be verified.
Chemical stability	Stable under normal recommended storage conditions unless otherwise stated in the grade-specific SDS.
Conditions to avoid	Excessive heat, ignition sources for combustible materials, moisture where moisture-sensitive, and uncontrolled dust generation.
Incompatible materials	Strong oxidizers and any grade-specific incompatibilities identified by the supplier.
Hazardous decomposition	Depends on material; organic products can form carbon oxides and irritating fumes; inorganic products can form decomposition products characteristic of their elements.
Hazardous polymerization	Not expected for the listed materials under normal storage; carbomer is already a crosslinked polymer.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure	Inhalation, skin contact, eye contact and ingestion depending on handling.
Acute toxicity	Strong skin sensitizer. Repeated contact can cause allergic contact dermatitis. Concentrated exposure may cause significant eye/skin injury. Toxicity data must be interpreted for pure MIT versus commercial dilute mixtures.
Skin corrosion/irritation	Material-specific; see Section 2 and actual supplier classification.
Serious eye damage/irritation	Dusts and concentrated solutions can cause mechanical or chemical irritation depending on material.
Respiratory/skin sensitization	Material-specific; particularly relevant for sensitizing preservatives and some natural products.
Germ cell mutagenicity / carcinogenicity / reproductive toxicity	Do not assign a positive or negative classification without material-specific authoritative data. Consult the current supplier SDS and regulatory assessment for the exact grade.
STOT / aspiration hazard	Evaluate according to the actual substance and exposure scenario; not all endpoints are applicable to solids or waxes.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Biocidal activity means uncontrolled release can adversely affect aquatic organisms and microbial communities. Prevent environmental discharge.
Persistence and degradability	Material-specific. Natural waxes may biodegrade over time; inorganic salts/minerals persist physically; antimicrobial preservatives/actives may have significant biological effects.
Bioaccumulation	No universal conclusion should be made without material-specific data.
Mobility in soil	Depends on solubility, particle size and sorption behavior.
Other adverse effects	Prevent concentrated releases, particularly for biocidal actives, phosphates and fine mineral dusts.

13. DISPOSAL CONSIDERATIONS

Waste treatment	Treat concentrated MIT and contaminated absorbents as chemical waste. Do not discharge concentrated material to wastewater.
Contaminated packaging	Empty packaging should be handled according to local rules and residual contamination. Do not reuse containers for food, pharmaceuticals or unrelated materials unless properly decontaminated and legally permitted.
Sewage / drains	Do not discharge concentrated material or process residues to drains unless specifically permitted and known to be compatible with the wastewater system.

14. TRANSPORT INFORMATION

UN number / proper shipping name	Verify for the actual product and shipment. Many of these materials are not regulated as dangerous goods when shipped as conventional solids, but flammable or concentrated formulations may differ.
Transport hazard class / packing group	Not assigned generically here where classification depends on form, quantity or jurisdiction.
Environmental hazards	Evaluate marine-pollutant/environmental classification from the actual regulatory classification.
Special precautions	Transport classification is formulation- and concentration-dependent. Commercial mixtures must be checked against their actual SDS before shipment.

15. REGULATORY INFORMATION

General	Use restrictions for MIT in cosmetics vary by jurisdiction and product type. Cosmetic use concentrations must not be inferred from this SDS; consult current regulatory limits and the actual formulation.
GHS / OSHA	This document follows the 16-section SDS structure. Regulatory classification must be established for the actual product, composition, market and revision of the applicable law.
Chemical inventories	Inventory status varies by jurisdiction and substance identity. Check the applicable national inventory before import/use.
Pharmacopeial / food / cosmetic claims	A raw material should not be labeled USP, EP, BP, FCC, food grade, pharmaceutical grade or cosmetic grade solely on the basis of this general SDS. Verify COA and specification.

16. OTHER INFORMATION

Preparation basis	Prepared by ARKACHEM from general scientific/occupational safety information and public authoritative references. It is intended as a practical safety information document, not a substitute for the manufacturer/importer SDS.
Revision	Comprehensive 16-section edition; current preparation date: 15 September 2026.
Key references	PubChem Methylisothiazolinone; ECHA/CLP-type classification resources; cosmetic safety assessments; UN GHS guidance.
Important limitation	Where data are unavailable, conflicting, grade-dependent or jurisdiction-dependent, this document deliberately avoids inventing a numerical value. The current supplier SDS and COA for the actual batch remain the primary documents for identity, composition, specifications and regulatory classification.
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DOCUMENT STATUS: GENERAL ARKACHEM SAFETY INFORMATION — NOT A MANUFACTURER-ISSUED SDS