

MATERIAL SAFETY DATA SHEET

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PRODUCTS: TRIONE® Ninhydrin

Cat. No. T100, T100C, T200

Section I – General

CAS #: Sulfolane [126-33-0]; ninhydrin [485-47-2]; hydrindantin [5950-69-4]; lithium acetate [546-89-4]
FORMULA: U.S. Patent No. 4,274,833
CHEMICAL NAME: Not applicable
SYNONYMS: Not applicable
CHEMICAL FAMILY: Aqueous solution

Section II – Hazardous Ingredients

1: Contains sulfolane, ninhydrin, hydrindantin, and other non-hazardous salts in water

Section III – Physical Data

MELTING POINT: Not applicable
BOILING POINT: 100°C (approx.)
APPEARANCE & ODOR: Yellow solution with vinegar-like odor
SOLUBILITY: Aqueous solution
AIR & LIGHT SENSITIVE: Yes

Section IV – Toxicity Data

RTECS #: Sulfolane: XN0700000; ninhydrin: NK5425000
RTECS NAME: Sulfolane (tetramethylene sulfone); ninhydrin
REVIEWS: Acute toxicity study for ninhydrin: Breton, J.C., *et al.*, *Compt. Rend. Soc. Biol.* **151**(1957) 719; for sulfolane: Smyth, H.F., *et al.*, *Am. Ind. Hyg. Assoc. J.* **30**(1962) 470. Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data are presented here. Refer to actual entry in RTECS for complete information.

Section V – Health Hazards and First Aid

ACUTE EFFECTS: Will irritate skin, eyes, mucous membranes, upper respiratory tract. Skin contact will stain skin purple (fade in 1–3 days). Can irritate the upper respiratory tract and cause repeated sneezing. Hazardous if ingested; may produce central nervous system stimulation, followed by depression. Early to moderate central nervous system depression may be evidenced by headache, dizziness, and nausea; in extreme cases, unconsciousness and death may occur.

CHRONIC EFFECTS: Repeated skin or eye contact can cause burns or skin rash. Some individuals have an immediate asthmatic reaction to exposure while others develop a sensitivity over a period of months or years. Once sensitized from repeated exposure, most people will sneeze when exposed to the ninhydrin solution. For ninhydrin, LD₅₀ ip in mice: 78 mg/kg; for sulfolane, LD₅₀ orally in rats: 1.54 mL/kg.

- EYE CONTACT:** Immediately flush with plenty of water for at least 15 minutes; assure adequate flushing by separating eyelids with fingers. Call a physician.
- SKIN CONTACT:** Wash with water and soap. Purple stain will fade in 1–3 days. Launder ninhydrin-contaminated clothing prior to re-use.
- INGESTION:** If victim is unconscious, do not give liquids. Otherwise, rinse mouth with water, insuring rinse is not swallowed. Give no more than 2 glasses of water and induce vomiting by giving 30cc (2 tablespoons) syrup of IPECAC. If IPECAC is unavailable, induce vomiting by touching finger to back of victim's throat. Keep victim's head below hips while vomiting. Call a physician immediately.

Section VI – Fire and Explosion Hazards

- FLASHPOINT:** Not flammable
- EXTINGUISHING MEDIA:** Water spray; dry chemical; carbon dioxide; alcohol or polymer foam.
- FIREFIGHTING PROCEDURE:** Wear self-contained breathing apparatus and protective clothing to protect contact with skin and eyes.
- UNUSUAL HAZARDS:** Emits toxic fumes (sulfur oxides & carbon monoxide) under fire conditions.
- EXPLOSIVE PROPERTIES:** Non-explosive

Section VII – Reactivity

- GENERAL:** Stable
- INCOMPATIBILITIES:** Primary and secondary amines will cause non-hazardous contamination of TRIONE, as will exposure to air or light. Avoid strong oxidizing agents.
- HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS:** Sulfur oxides (corrosive & toxic) may be released with combustion.

Section VIII – Spill or Leak Procedures

- SPILL PROCEDURE:** Wear safety goggles and rubber gloves. Absorb with dry inert material (vermiculite, sawdust, etc.) Wash spill-site with soap and water.
- WASTE DISPOSAL:** This product may be mixed or dissolved in a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local regulations.

Section IX – Precautions for Handling and Storage

- SAFETY EQUIPMENT:** Chemical safety goggles, laboratory coat, rubber gloves, safety-shower with eye-wash, NIOSH / MSHA approved respirator.
- HANDLING PROCEDURES:** Avoid eye and skin contact and inhalation. Do not ingest. Wear safety glasses and gloves. Wash thoroughly after handling.
- STORAGE PROCEDURES:** Keep tightly closed. Store at room temperature. Do not refrigerate.

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