
MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: AMYLOID RED STAIN

Catalog number: 868, 881A

General use: Stain to demonstrate amyloid deposits.

Product description: Solution of Amyloid Red dye in reagent alcohol and water.

Manufacturer

Anatech Ltd.
1020 Harts Lake Road
Battle Creek, MI 49037
USA

Emergency contact information

Health:	Anatech Ltd.	800-262-8324	8 am - 5 pm ET, M-F
Transportation:	CHEMTREC	800-424-9300	24 hours

2. COMPOSITION AND INFORMATION ON INGREDIENTS

(Note: Percentage composition is withheld as a trade secret.)

<u>Component</u>	<u>CAS #</u>	<u>Exposure limits</u>
Amyloid Red dye (C.I. 29200)	10114-26-6	Not established.
Hydrochloric acid	7647-01-0	5 ppm (OSHA, ACGIH Ceiling)
Ethanol	64-17-5	1000 ppm (OSHA, ACGIH 8 hr TWA)
Sodium chloride	7647-14-5	Generally considered not hazardous.
Disodium phosphate	7558-79-4	Generally considered not hazardous.

3. HAZARDS IDENTIFICATION

Emergency overview

Red liquid.

Irritant to eyes and skin. Not likely to pose a hazard under normal conditions of use.

Potential health effects

(Human health effects only; animal effects in Section 11: Toxicological Information)

Primary route(s) of exposure: Eyes and skin.

Inhalation: Inhalation of vapors during normal conditions of use are not likely to present a health hazard.

Eye: Contact of liquid with eyes may cause irritation.

3. HAZARDS IDENTIFICATION (continued)

Skin: Prolonged or repeated contact with skin may cause irritation.

Ingestion: Ingestion is likely to produce adverse effects on the gastrointestinal system.

Chronic effects: Prolonged or repeated contact may cause drying and cracking of the skin.

Signs and symptoms: Affected skin will be stained pink and appear dry. Effects on the gastrointestinal tract may include nausea, vomiting and diarrhea. Depression of the central nervous system also occurs.

4. FIRST AID MEASURES

Inhalation: Remove victim to fresh air if coughing or difficulty in breathing is experienced. Consult a physician if symptoms persist or worsen. Administer oxygen or artificial respiration as needed.

Eye: Flush eyes for at least 15 minutes in an eyewash station. If symptoms persist after washing, consult a physician.

Skin: Remove contaminated clothing, including footwear; wash before reuse or discard. For minor exposure, wash affected area with water and mild soap, rinsing thoroughly; apply a good quality skin lotion. In cases of prolonged, repeated or extensive exposure, rinse affected area or entire body for at least 15 minutes. For severe conditions, consult a physician.

Ingestion: Call a poison control center immediately. If victim is conscious, have him/her drink several glasses of water to dilute the solution. Induce vomiting only upon the advice of a physician or poison control authority.

5. FIRE FIGHTING MEASURES

Flammable properties

Flash point: 104°F (40°C), closed-cup.

Flammable limit: Not determined.

Autoignition temperature: Not determined.

Flammability classification: Combustible liquid (OSHA).

Flame propagation: None.

Hazardous products of combustion: Carbon monoxide and carbon dioxide.

Extinguishing media: ABC rated portable fire extinguishers should be used. Professional fire fighters may use water spray, dry chemical or carbon dioxide.

Fire fighting instructions: Sealed chemical suits and self contained breathing apparatus are necessary for fighting fires involving substantial volumes of this product.

6. ACCIDENTAL RELEASE MEASURES

The size of a spill is defined in part by the local situation, especially regarding ventilation. At room temperature in a well ventilated room, a few hundred milliliters might be considered a small spill. Wear protective gloves, rubber boots, impermeable aprons and full-face respirators. Use a damp sponge or mop to remove spilled liquid. Wash contaminated area with water. Discard absorbents and other contaminated solids in a receptacle suitable for hazardous chemical waste. Liquid waste may be discarded down the drain with approval by wastewater authorities, or may be removed by a licensed waste hauler.

With large spills, evacuate the area and have an emergency response team perform the cleanup. Have a licensed waste hauler remove contaminated solids and recovered liquid.

Comply with all applicable governmental regulations on spill reporting and on the handling and disposal of hazardous waste.

7. HANDLING AND STORAGE

Handling: Wear a plastic or rubber apron, protective gloves and splash-proof goggles. Avoid contact with skin and eyes.

Storage: Store at room temperature.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering controls: Good general room ventilation is essential.

Personal protective equipment

Respiratory protection: A NIOSH-approved respirator suitable for organic solvents must be used if vapor levels exceed the exposure limits.

Skin protection: Anatech Ltd. recommends nitrile gloves. Do not use latex surgical gloves for protection against any hazardous liquid. An eyewash station and safety shower must be nearby, preferably in the same room, no more than 10 seconds away.

Eye protection: Use of splash-proof goggles. Do not use safety glasses. If a face shield is worn as protection against biohazards, splash-proof goggles also must be used. An eyewash station and safety shower must be nearby, preferably in the same room, no more than 10 seconds away.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Red.

Odor: Faint alcohol.

Physical state: Liquid.

pH: 6.8 - 7.2.

Vapor pressure: Not determined.

Vapor density: Not determined.

Boiling point: Not determined.

9. PHYSICAL AND CHEMICAL PROPERTIES (continued)

Freezing point: Not determined.

Solubility in water: Complete.

Specific gravity: Not determined.

10. STABILITY AND REACTIVITY

Chemical stability: Stable.

Conditions to avoid: None.

Incompatibility with other materials: Strong oxidants.

Hazardous decomposition products: Carbon oxides.

Hazardous polymerization: None.

11. TOXICOLOGICAL INFORMATION

The following data are from studies using 100% ethanol.

Acute eye effects: 500 mg administered into rabbit eyes for 24 hours produced moderate irritation.

Acute skin effects: Draize test on rabbit skin of 20 mg for 24 hours produced moderate irritation.

Acute oral effects: OSHA considers chemicals to be toxic if their LD₅₀ is at or below 500 mg/kg. LD₅₀ is the dose killing 50% of the test animals in a given time (usually 4 hours). LD₅₀ was 7,060 mg/kg in rats, 3,450 mg/kg in mice and 6,300 mg/kg in rabbits.

Acute inhalation effects: OSHA considers chemicals to be toxic if their LC₅₀ is at or below 20 mg/kg. LC₅₀ is the airborne concentration killing 50% of the test animals. LC₅₀ was 20,000 ppm/10 hours in rats. In man, ethanol produces severe toxic effects at 8,000 ppm and symptoms of illness at 2,000 ppm.

Chronic effects/carcinogenicity: Chronic ethanol ingestion is associated with liver cancer.

Teratology: None known.

Reproductive effects: Ethanol has been linked to birth defects in humans.

Mutagenicity: None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity: The following data are from studies using 100% ethanol.

Toxicity threshold (cell multiplication inhibition test):

Bacteria

Pseudomonas putida: 6,500 mg/l

Algae

Microcystis aeruginosa: 1,450 mg/l

Scenedesmus quadricauda: 5,000 mg/l

12. ECOLOGICAL INFORMATION (continued)

Protozoa

Entosiphon sulcatum: 65 mg/l
Uronema parduczi: 6,120 mg/l

Fish

Fingerling trout: 24 hr LC₅₀: 11,200 mg/l, flow through system

Cheek chub: LD₀: 24 hr in Detroit river water: 7,000 mg/l

LD₁₀₀: 24 hr in Detroit river water: 9,000 mg/l

LC₅₀ > 7,000 mg/l

Guppy: 7 day LC₅₀ = 11,050 mg/l

Fathead minnow: static bioassay in Lake Superior water at 18°C - 22°C (1, 24, 48, 72, 96 hours) >18,000, 18,000, 13,480, 13,480, 13,480 mg/l respectively.

Biological Oxygen Demand (BOD), 5 day: = 37-74% ThOD

Chemical Oxygen Demand (COD) = 90-97% ThOD

Environmental fate: Components will readily biodegrade.

13. DISPOSAL CONSIDERATIONS

Amyloid Red Stain is ignitable.

Drain disposal is the recommended method of disposal, based on ecotoxicity and biodegradation information given in Section 12, provided approval is granted by local wastewater treatment authorities.

As an alternative to drain disposal, use a licensed hazardous waste hauler.

Canadian disposal regulations generally parallel those in the United States.

Regardless of the method chosen for disposal, be sure to follow federal, state (provincial) and local regulations. Proper waste disposal is the generator's responsibility.

14. TRANSPORTATION INFORMATION

Packaging for hazardous air shipments must meet the specifications as required by the current edition of *International Air Transportation Association (IATA) Dangerous Goods Regulations*.

DOT (ground): Not regulated.

DOT (air) and IATA: **Proper Shipping Name:** Flammable liquid, n.o.s. (ethanol)
UN #: 1993
Hazard Class: 3
Packing Group: III

15. REGULATORY INFORMATION

OSHA (USA): Under the Hazard Communication Standard and the Laboratory Standard, this product is a hazardous material: it is an irritant and it is combustible.

The OSHA Standards cited above mandate that exposed workers receive proper training in the properties of this product, work practices involved with its handling and disposal, and interpretation of its MSDS.

FDA (USA): Amyloid Red Stain is for in vitro diagnostic use as a stain in histology.

EPA (USA): Amyloid Red Stain is ignitable and is a reportable substance under SARA Title III.

16. OTHER INFORMATION

Label warnings: Avoid contact with eyes to prevent irritation. Avoid contact with skin to prevent staining.

NFPA (National Fire Protection Association) Rating:

General note: This rating is applicable only to safeguard the lives of individuals who may be concerned with fires occurring in an industrial plant or storage location. The ratings provide information to emergency personnel on whether to evacuate the area or how to perform control procedures. It is not descriptive of hazards under normal conditions of occupational use, and is even less applicable to anticipated laboratory-scale use.

Health 1: Materials that, under emergency conditions, can cause significant irritation.

Flammability 2: Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

Instability 0: Materials that are normally stable even under fire conditions.