

MATERIAL SAFETY DATA SHEET

CYTOSEAL™ 280

RICHARD-ALLAN SCIENTIFIC

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24 hours Everyday

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1. SUBSTANCE IDENTIFICATION

SUBSTANCE: **Cytoseal™ 280 Mounting Medium**

CATALOG NUMBER: 8311-4

TRADE NAMES/SYNONYMS: Cytoseal™ 280 Mounting Medium, Accumount 280 Mounting Medium

CHEMICAL FAMILY: Aromatic Hydrocarbon,

2. COMPOSITION AND INGREDIENTS INFORMATION

Total aromatic content:

Toluene	CAS# 108-88-3	<55%
Acrylic Resin	CAS# 28262-63-7	<40%
Antioxidant	CAS# 128-37-0	
Butyl Benzyl Phthalate	CAS# 85-68-7	

3. HAZARDS INFORMATION

NFPA RATINGS (SCALE 0-4):

Health=2

Fire=3

Reactivity=0

Cytoseal™ 280 is a mixture of acrylic resin suspended in toluene. The toluene content is approximately 55%. Cytoseal™ 280 is a colorless, viscous solution with a characteristic aromatic odor. Cytoseal™ can be toxic if swallowed. Systemic effects by inhalation are most commonly seen. Symptoms from mild exposure may include dizziness, weakness, euphoria, headache, nausea and vomiting. Repeated or prolonged exposure increases the toxic effects.

Primary Routes of Exposure: Inhalation, Ingestion, Skin and Eye contact.

Acute Effects: Acute effects due to inhalation or ingestion range from headache, nausea, vomiting, tightness of the chest and staggering due to visual blurring, tremors, shallow and rapid respiration and ventricular irregularities. Kidney or liver damage may occur.

Chronic Effects: Repeated or prolonged exposure to toluene may cause headaches, loss of appetite, drowsiness, nervousness and pallor. Continued repeated inhalation of toluene to the point of euphoria has caused irreversible encephalopathy with ataxia, tremulousness, emotional lability and diffused cerebral atrophy.

Potential Health Effects:

- Inhalation: May cause dizziness, headache, nausea or vomiting.
- Eye contact: May cause severe irritation and damage to eyes.
- Skin contact: May cause skin irritation.
- Ingestion: Harmful, may be fatal if swallowed. May cause nausea or vomiting.

4. FIRST-AID PROCEDURES

Inhalation: Remove from exposure area to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. Keep affected person warm and at rest. Get medical attention immediately.

Eye Contact: Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains (at least 15-20 minutes). Get medical attention immediately.

Skin Contact: Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention if irritation persists.

Ingestion: If swallowed, **do not induce vomiting**. If vomiting does occur, insure victim's head is lower than hips in order to prevent aspiration. Call a physician immediately.

ANTIDOTE: No specific antidote. Treat symptomatically and supportively.

5. FIREFIGHTING PROCEDURES

FIRE AND EXPLOSION HAZARD: Flammable Liquid

FLASH POINT: 45°F (7°C)

UPPER EXPLOSIVE LIMIT: For Toluene 7%

LOWER EXPLOSIVE LIMIT: For Toluene 1.27%

FIRE FIGHTING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR REGULAR FOAM (1993 Emergency Response Guidebook, DOT P 5800.5). FOR LARGER FIRES, USE WATER SPRAY, FOG OR REGULAR FOAM (1993 Emergency Response Guidebook, DOT P 5800.5).

FIRE RESPONSE PROCEDURES: Provide respiratory protection by wearing a self-contained breathing apparatus. Use water spray to reduce vapors and keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors form explosive mixtures with air. Vapor may travel a considerable distance to a source of ignition and flash back. Not soluble with water.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Remove all ignition sources. Wear protective equipment, appropriate gloves, safety glasses and apron. Ventilate area of spill or leak. Stop leak if you can do it without risk. Take up with sand or other absorbent material and place into sealed containers for later disposal.

LARGE SPILL: Wear an approved respirator. Follow the above procedure and dike far ahead of spill for later disposal. Keep unnecessary people away; isolate hazard area and restrict entry. No smoking, flames or flares in hazard area. If spill is very large, call fire department immediately.

7. HANDLING AND STORAGE

General Handling: FLAMMABLE: Store in a cool, dry place away from heat, sparks and open flames. Do not get into eyes. Avoid contact with skin and clothing. Avoid breathing vapor. Keep containers tightly closed and in an upright position to prevent leakage. Use only adequate ventilation. Wash hands thoroughly after handling. Do not store next to oxidizing materials. Since emptied containers retain product residues, assume emptied containers to have the same hazard qualities as full containers.

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

VENTILATION: Provide local exhaust or general dilution ventilation to meet published exposure limits. Ventilation equipment must be explosion-proof.

RESPIRATOR: In the event of a very large spill, an appropriate respirator should be worn for clean up procedures.

FOR FIRE FIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

Any self-contained breathing apparatus that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-NEED pressure mode.

CLOTHING: Employee should wear protective outer garment when spill or splattering is likely.

GLOVES: Employee must wear resistant gloves for prolonged or repeated contact with this substance.

EYE PROTECTION: Employee must wear splash-proof or dust-resistant safety goggles to prevent eye contact with this substance.

EMERGENCY EYE WASH: Where there is any possibility that an employee's eyes and/or skin may be exposed to this substance, the employer should provide an eye wash fountain and quick drench shower within the immediate work area for emergency use. Protective eye equipment should meet the requirements for protective clothing and equipment in 29 CFR 1910.1048(H).

EXPOSURE GUIDELINES

For Toluene:

ACGIH TLVs	TWA	50ppm (188 mg/m ₃)
OSHA PELs	TWA	100ppm (375 mg/m ₃)
OSHA PELs	STEL/CEIL	150ppm (360 mg/m ₃)
NIOSH RELs	TWA	100ppm (375 mg/m ₃)
NIOSH RELs	STEL/CEIL	150ppm (560 mg/m ₃)
DFG MAKs	TWA	50ppm (190 mg/m ₃)

9. PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION: Colorless liquid with a characteristic aromatic odor

SPECIFIC GRAVITY: 0.97 Kg/l

BOILING POINT: 231°F (110°C)

VAPOR PRESSURE: Approx. 47mm/Hg @68°F

SOLUBILITY IN WATER: Insoluble

VAPOR DENSITY: Heavier than air

EVAPORATION RATE (Butyl Acetate = 1): Slower than ether

FLASHPOINT: 45°F (7°C)

10. STABILITY AND REACTIVITY INFORMATION

REACTIVITY: Cytoseal™ Mounting Medium is stable in closed containers under normal temperatures and pressures; Toluene may evaporate on exposure to air.

INCOMPATIBILITIES: **Strong Acids, Oxidizing materials.**

Toluene may cause an explosive reaction with 1,3-dichloro-5, 5-dimethyl-2, 4-imidazolidione; dinitrogen tetraoxide; concentrated nitric acid; H₂SO₄ + HNO₃; N₂O₄; AgClO₄; BrF₃; UF₃; sulfur dichloride. May form an explosive mixture with tetranitromethane. Can react violently with oxidizing materials

DECOMPOSITION: Thermal decomposition products may release acrid smoke and irritating fumes.

POLYMERIZATION: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

11. TOXICOLOGICAL INFORMATION

TOLUENE:

IRRITATION DATA: 300 ppm eye-human; 870 µg eye-rabbit mild; 2 mg/24 hours eye-rabbit severe; 100mg/30 seconds rinsed eye-rabbit mild; 435 mg skin-rabbit mild; 500 mg skin-rabbit moderate; 20 mg/24 hours skin-rabbit moderate.

TOXICITY DATA: 200 ppm inhalation-human TCLO; 100 ppm inhalation-man TCLO; 26,700 ppm/1 hour inhalation-rat LC50; 400 ppm/24 hours inhalation-mouse LC50; 55,000 ppm/40 minutes inhalation-rabbit LCLO; 1600ppm inhalation-guinea pig LCLO; 12,124 mb/Kg skin-rabbit LD50; 50 mg/Kg oral-human LDLO; 636 mg/Kg oral-rat LD50; 2250 mg/Kg subcutaneous-mouse LD50; 1960 mg/Kg intravenous-rat LD50; 130 mg/Kg intravenous-rabbit LDLO; 500 mg/Kg intraperitoneal-guinea pig LD50; 1332 mg/Kg intraperitoneal-rat LD50; 59 mg/Kg intraperitoneal-mouse LD50; 1750 mg/Kg intraperitoneal-mammal LDLO; 6900 mg/Kg unreported-rat LD50; 2000 mg/Kg unreported-mouse LD50; mutagenic data (RTECS); reproductive effects data (RTECS).

12. ECOLOGICAL INFORMATION

Acute Effects: Acute toxic effects may include the death of animals, birds, or fish, and death or low growth rate in plants. Acute effects are seen two to four days after animals or plants come in contact with a toxic chemical substance. Toluene has moderate acute toxicity to aquatic life. Toluene has caused leaf membrane damage in plants.

Chronic Effects: Chronic toxic effects may include shortened lifespan, reproductive problems, lower fertility, and changes in appearance and behavior. Chronic effects can be seen long after first exposure(s) to a toxic chemical. Toluene has moderate chronic toxicity to aquatic life. (AQUIRE Database, ERL-Duluth, U.S. EPA, Phytotox)

13. DISPOSAL GUIDELINES

Dispose mounting media as toluene, an EPA hazardous waste. Hazardous waste numbers: U220 (toxic), D001 (ignitable). Follow local state and federal regulations.

14. TRANSPORT INFORMATION

Proper shipping name: TOLUENE SOLUTIONS

Hazard class or Division: 3

Identification Numbers: UN1294

Packing Group: II

Label(s) required (if not excepted): None, Exception 1 liter or less (LTD. QTY.)

Special Provisions: Packaging authorizations: Exceptions: 173.150
Non-bulk packaging: 173.202
Quantity Limitations: Passenger aircraft or railcar: 5L
Cargo aircraft only: 60L

15. REGULATORY INFORMATION

SARA TITLE III (Superfund Amendment and Reauthorization Act)

SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355)- Not Listed

SECTION 311: Hazard Categorization (40 CFR 370)- Acute, Chronic, and Fire

SECTION 313: Toxic Chemicals Listing (40 CFR 372.65)- Listed as a toxic chemical

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

SECTION 102(A) Hazardous Substances (40 CFR 302.4)- Listed

Reportable Quantity - 1,000 pounds.

SECTION 101(14) Reportable Quantity: 1,000 lbs.

RCRA (Resource Conservation and Recovery Act.)

40 CFR 261.33 Hazardous Waste Number: U220

NJ-RTK (New Jersey- State Right To Know)

Environmental Hazardous Substance List: Listed, Substance # 1866

TSCA (Toxic Substance Control Act)

Toluene is listed on the TSCA Inventory.

16. OTHER INFORMATION

Cytoseal™ 280, as manufactured by Richard-Allan Scientific is intended for legal use in laboratories and manufacturing environments.