

# MATERIAL SAFETY DATA SHEET

MSDS DATE: 02/12/05

FILE NO.: ALX-380-009

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## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

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**PRODUCT NAME:** Actinomycin D  
**SYNONYMS:** Actinomycin IV; Actinomycin C1; Dactinomycin  
**PRODUCT CODES:** ALX-380-009

**MANUFACTURER:** ALEXIS Corporation  
**ADDRESS:** Industriestrasse 17  
CH-4415 Lausen

**TELEPHONE:** +41 61 926 8989  
**FAX PHONE:** +41 61 926 8979  
**WEBSITE:** www.axxora.com

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## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

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<u>Formula:</u>	<u>CAS #</u>	<u>EC #</u>	<u>Annex I Index #</u>
C <sub>62</sub> H <sub>86</sub> N <sub>12</sub> O <sub>16</sub>	50-76-0	200-063-6	N/A

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## SECTION 3: HAZARDS IDENTIFICATION

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**ACUTE HEALTH EFFECTS:** VERY TOXIC. Fatal by ingestion. Harmful by inhalation or skin absorption.

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## SECTION 4: FIRST AID MEASURES

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**EYES:** Rinse immediately with plenty of water for 15 minutes. Check for and remove any contact lenses. Seek medical attention if symptoms appear.

**SKIN:** Wash immediately with water for 15 minutes. Remove contaminated clothing. Seek medical attention if symptoms appear.

**INGESTION:** Rinse mouth with water. Do not induce vomiting. Seek medical attention if symptoms appear. Provide MSDS and label information if possible.

**INHALATION:** Take into fresh air. If breathing is difficult, administer oxygen. Get medical attention.

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## SECTION 5: FIRE FIGHTING MEASURES

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**EXTINGUISHING MEDIA:** Water spray, water foam, polymer foam, dry chemical powder. Do not use water jet.

**SPECIAL FIRE FIGHTING PROCEDURES:** In case of fire, watch out for the formation of toxic smoke and gases. Wear self-contained respiration equipment. Prevent contact with skin and eyes.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** May be combustible at high temperatures.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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**PERSONAL PRECAUTIONS:** Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**SMALL SPILL AND LEAK:** Use appropriate tools to put the spilled solid in a convenient waste disposal container.

**LARGE SPILL AND LEAK:** Poisonous solid. Stop leak if without risk. Do not get water inside container. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

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## SECTION 7: HANDLING AND STORAGE

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**HANDLING AND STORAGE:** Keep locked up. Keep away from heat, sources of ignition and incompatibles such as oxidizing agents. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Avoid contact with skin and eyes; do not breathe dust. Avoid prolonged or repeated exposure. Immediately remove all contaminated clothing. Wash hands before breaks and after work. Avoid eating, drinking and storage of food in the work room. Store tightly sealed at +4°C. Hygroscopic. Protect from light.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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**ENGINEERING CONTROLS:** Use only in chemical fume hood. Safety shower and eye bath.  
**VENTILATION:** Government approved respirator.  
**EYE PROTECTION:** Chemical safety goggles.  
**SKIN PROTECTION:** Compatible gloves, protective lab coat or clothing.  
**SECTION 8 NOTES:** Wash thoroughly after handling. Wash contaminated clothing before reuse.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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**APPEARANCE:** Red shiny crystals.  
**ODOR:** N/A  
**pH AS SUPPLIED:** N/A  
**BOILING POINT:** N/A  
**MELTING POINT:** N/A  
**FREEZING POINT:** N/A  
**VAPOR PRESSURE (mmHg):** N/A  
**VAPOR DENSITY (AIR = 1):** N/A  
**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** N/A  
**EVAPORATION RATE:** N/A  
**BASIS (=1):** N/A  
**SOLUBILITY:** Soluble in DMSO, 100% ethanol or methanol.  
**MOLECULAR WEIGHT:** 1255.5

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## SECTION 10: STABILITY AND REACTIVITY

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**STABILITY:** Stable. Avoid strong oxidizing agents, acids, alkalis. Hygroscopic. Protect from light.  
**HAZARDOUS DECOMPOSITION:** Carbon monoxide, carbon dioxide, nitrogen oxides.  
**HAZARDOUS POLYMERIZATION:** Will not occur.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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**RTECS # :** AU1575000  
**TOXICOLOGICAL INFORMATION:** VERY TOXIC. Fatal by ingestion. Exposure may cause nausea, headache and vomiting. May cause damage to kidneys, liver, gastrointestinal tract, bone marrow and muscle tissue. May cause tumors. To the best of our knowledge, the toxicological properties have not been thoroughly investigated.  
**LD50:** Rat [Oral]: 7.2 mg/kg.  
**CHRONIC EXPOSURE:** Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.  
**CHRONIC EXPOSURE-CARCINOGEN:** NIOSH: Classified none. IARC: Classified 3 (not classified for human).  
**CHRONIC EXPOSURE-MUTAGEN:** Not available.  
**CHRONIC EXPOSURE-TERATOGEN:** Not available.

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## SECTION 12: ECOLOGICAL INFORMATION

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**ECOLOGICAL INFORMATION:** N/A  
**PRODUCTS OF DEGRADATION:** Products of degradation are less toxic than the product itself.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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**WASTE DISPOSAL METHOD:** Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## SECTION 14: TRANSPORT INFORMATION

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**INTERNATIONAL TRANSPORT REGULATIONS:**  
**LAND – ROAD/RAILWAY:** ADR/RID: Not available.  
**SEA:** IMDG: Not available.  
**AIR:** IATA-DGR: Not available.  
**SPECIAL PROVISIONS FOR TRANSPORT:** N/A

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## SECTION 15: REGULATORY INFORMATION

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES:

**SYMBOL OF DANGER:** T+, very toxic  
**R-PHRASES:** R28 - Very toxic if swallowed.  
**S-PHRASES:** S28.1 - After contact with skin, wash immediately with plenty of water.  
S36/37 - Wear suitable protective clothing and gloves.  
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**U.S. FEDERAL REGULATIONS:** Not available.

**HCS CLASSIFICATION:** CLASS: May cause cancer.  
CLASS: Highly toxic  
CLASS: Target organ effects.

**STATE REGULATIONS:** California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Actinomycin D, Streptomyces sp.  
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Actinomycin D, Streptomyces sp.  
Pennsylvania RTK: Actinomycin D, Streptomyces sp.: (special hazard, generic environmental hazard)  
Massachusetts RTK: Actinomycin D, Streptomyces sp.  
New Jersey: Actinomycin D, Streptomyces sp.

**WHMIS (CANADA):** CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).  
CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

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## SECTION 16: OTHER INFORMATION

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**DISCLAIMER:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Alexis Corporation shall not be held liable for any damage resulting from handling or from contact with the above product.

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