

Appendix E: MSDS Sheets on Treatment Chemicals

Antimycin

MATERIAL SAFETY SHEETS

Section 1. Chemical Identification

CATALOG #: A8674
NAME: ANTIMYCIN A FROM STREPTOMYCES SP.

Section 2. Composition/information on Ingredients

CAS #: 1397-94-0
SYNONYMS
ANTIPIRICULLIN * VIROSIN *

Section 3. Hazards Identification

LABEL PRECAUTIONARY STATEMENTS

HIGHLY TOXIC (USA)

VERY TOXIC (EU)

VERY TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.

CALIF. PROP. 65 REPRODUCTIVE HAZARD.

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

Section 4. First-aid Measures

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.

CALL A PHYSICIAN.

IF INHALED, REMOVE TO FRESH AIR. IF BREATHING BECOMES DIFFICULT,

CALL A PHYSICIAN.

IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. CALL A PHYSICIAN.

IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER

FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING

THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.

Section 5. Fire Fighting Measures

EXTINGUISHING MEDIA

CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO

PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

Section 6. Accidental Release Measures

EVACUATE AREA.

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY

RUBBER GLOVES.

SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.

AVOID RAISING DUST.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

Section 7. Handling and Storage

REFER TO SECTION 8.

Section 8. Exposure Controls/personal Protection

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT

GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

SAFETY SHOWER AND EYE BATH.

USE ONLY IN A CHEMICAL FUME HOOD.

Section 9. Physical and Chemical Properties

DATA NOT AVAILABLE

Section 10. Stability and Reactivity

STABILITY

STABLE.

CONDITIONS TO AVOID

PROTECT FROM MOISTURE.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

CARBON MONOXIDE, CARBON DIOXIDE

NITROGEN OXIDES

HAZARDOUS POLYMERIZATION

WILL NOT OCCUR.

Section 11. Toxicological Information

ACUTE EFFECTS

MAY BE FATAL IF INHALED, SWALLOWED, OR ABSORBED THROUGH SKIN. THE TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

RTECS #: CD0350000

ANTIMYCIN A

TOXICITY DATA

ORL-RAT LD50:28 MG/KG	AACHAX -,757,1966
IPR-RAT LD50:810 UG/KG	CNREA8 13,49,1953
SCU-RAT LD50:25 MG/KG	85ERAY 2,1078,1978
ORL-MUS LD50:55 MG/KG	AACHAX -,757,1966
IPR-MUS LD50:820 UG/KG	JAJAAA 11,A26,1958
SCU-MUS LD50:1600 UG/KG	85ERAY 2,1078,1978
IVN-MUS LD50:893 UG/KG	JAJAAA 9,63,1956
ORL-DOG LD50:>5 MG/KG	AACHAX -,757,1966
ORL-RBT LD50:10 MG/KG	AACHAX -,757,1966
ORL-GPG LD50:1800 UG/KG	AACHAX -,757,1966
ORL-PGN LD50:2 MG/KG	AACHAX -,757,1966
ORL-CKN LD50:>160 MG/KG	AACHAX -,757,1966
ORL-QAL LD50:39 MG/KG	AACHAX -,757,1966
ORL-DCK LD50:2900 UG/KG	AACHAX -,757,1966
ORL-DOM LD50:>1 MG/KG	AACHAX -,757,1966
ORL-BWD LD50:5 MG/KG	AACHAX -,757,1966

TARGET ORGAN DATA

LUNGS, THORAX OR RESPIRATION (OTHER CHANGES)

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

Section 12. Ecological Information

DATA NOT YET AVAILABLE.

Section 13. Disposal Considerations

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.

Section 14. Transport Information

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

Section 15. Regulatory Information

EUROPEAN INFORMATION

CAUTION: SUBSTANCE NOT YET FULLY TESTED.

VERY TOXIC

R 26/27/28

VERY TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.

S 45

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

S 36/37/39

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

U.S. INFORMATION

THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

THIS PRODUCT IS OR CONTAINS CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE DEVELOPMENTAL TOXICITY.

CALIFORNIA PROPOSITION 65:

Section 16. Other Information

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA, ALDRICH, FLUKA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.

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Rotenone

Product: 655-422 Prentox® Prenfish™ Toxicant

Material Safety Data Sheet

U.S. Department of Labor (OSHA 29 CFR 1910.1200)

Manufacturer's Name: Prentiss Incorporated

C. B. 2000

Floral Park, NY 11001

Telephone Number: (516) 326-1919

Section 1: Chemical Identification

Product: 655-422 Prentox® Prenfish™ Toxicant

EPA Signal Word: DANGER

Active Ingredient (percent): Rotenone (5 percent) (CAS # 83-79-4)

Other Cube Resins (10 percent) N/A

Chemical Names: Rotenone – N/A

Chemical Class: Mixture

Section 2: Composition/ Information On Ingredients

OSHA ACGIH NTP/IARC/OSHA

Material: PEL TLV Other Carcinogen

Rotenone (TWA) 5 mg/ M₃ (STEL) 10 mg/M₃ No/No/No

(TWA) 5 mg/M₃

Other associated cube resins Not Est. Not Est.

Aromatic Petroleum Solvent (Supplier recommendation 100 ppm)

(CAS # 64742-94-5)

(Not to exceed 80 percent)

Contains the following ingredients, by weight (typical):

Naphthalene (CAS # 91-20-3) 9.9 percent (TWA) 10 ppm

1,2,4-trimethylbenzene (CAS # 95-63-6) 1.7 percent (TWA) 25 ppm

Acetone (CAS # 67-64-1) (not to exceed 7.5 percent) (TWA) 250 ppm

Emulsifier #1 (CAS # N/A) 1.5 percent N/D

Emulsifier #2 (CAS # N/A) 4.5 percent N/D

Section 3: Hazards Identification

Clear liquid with mild odor. Fatal if inhaled. May be fatal if swallowed.

Harmful if absorbed through skin. Causes substantial but temporary eye injury.

Causes skin irritation. This pesticide is extremely toxic to fish.

Potential Health Effects:

Primary Routes of Entry: Inhalation, ingestion, skin and eye contact.

Product: 655-422 Prentox® Prenfish™ Toxicant

Health Hazards (Acute and Chronic): Causes mucous membrane irritation.

Chronic exposure can cause damage to liver and/or kidneys. May be fatal if swallowed. May cause eye injury. Causes skin irritation. Do not get in eyes, on skin or on clothing. Toxicity of other components: This product contains an

aromatic solvent. Inhalation of solvent vapors at high concentrations are irritating to the eyes and respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness, and other central nervous system effects, including death. Aspiration of solvent during vomiting may cause mild to severe pulmonary injury, possibly progressing to death. Frequent or prolonged skin contact may irritate and cause dermatitis. Skin contact may aggravate an existing dermatitis condition. Emulsifiers may cause severe eye injury.

Signs and Symptoms of Overexposure: Can cause skin irritation. Ingestion or inhalation can cause numbness, nausea, vomiting and tremors.

Medical Conditions Generally Aggravated by Exposure: None known.

Section 4: First Aid Measures

If swallowed, call a physician or Poison Control Center. Do not induce vomiting. This product contains aromatic petroleum solvent. Aspiration may be a hazard. Promptly drink a large quantity of milk, egg white, and gelatin solution, or if these are not available, water. Avoid alcohol.

If inhaled, remove victim to fresh air. If not breathing, administer artificial respiration, preferably by mouth to mouth. Get medical attention.

If on skin, wash with plenty of soap and water. Get medical attention if irritation persists.

If in eyes, flush eyes with plenty of water. Get medical attention if irritation persists.

Section 5: Fire Fighting Measures

Fire and Explosion

Flash Point (Method Used): 60° F. Closed cup.

Flammable Limits: LEL: 1.8 UEL: 11.7 (Solvent--approximate)

NFPA Hazard Ratings: Health: 3 Flammability: 4 Reactivity: 0

Extinguishing Media: CO₂, foam, dry chemical, or water spray.

Special Fire Fighting Procedures: Do not inhale smoke. Use self-contained breathing apparatus and protective clothing. This product is extremely toxic to fish, and is toxic to birds and other wildlife, prevent spread of contaminated runoff.

Unusual Fire and Explosion Hazards: When heated to decomposition, product emits acrid smoke and fumes.

Flammability Classification/Rating:

NFPA/OSHA Class: I

NFPA Rating (Fire): 4

Section 6: Accidental Release Measures

Wear protective equipment, as required, to prevent contact with product or its vapors. Cover the spilled material with generous amounts of absorbent material, such as clay, diatomaceous earth, sand or sawdust.

Sweep the contaminated absorbent onto a shovel and put the sweepings into a salvage drum. Dispose of wastes as below. Place any leaking container into a similar drum or glass container. Mark the drum or container with name of

product, ingredient statement, precautionary statements and signal word. Contact us for replacement label. This product is extremely toxic to fish. Fish kills are expected at recommended rates. Keep it out of lakes, streams or ponds except under use conditions.

Product: 655-422 Prentox® Prenfish™ Toxicant

Section 7: Handling and Storage

Do not contaminate water, food or feed by storage or disposal. Store in a dry place away from temperature extremes. Avoid inhalation of vapors. Harmful if swallowed, inhaled or absorbed through skin. Avoid contact with skin. Wear clean protective clothing.

Other precautions: Periodically inspect stored materials.

Section 8: Exposure Controls/Personal Protection

Respiratory protection: Mixers and handlers: Do not inhale. Use NIOSH certified respirator for organic vapor protection.

Ventilation:

Local Exhaust: As required to meet TLV.

Special: Not applicable.

Mechanical: As required to meet TLV.

Other: Not applicable.

Protective Gloves: Chemical resistant.

Eye Protection: Safety glasses, face shield or goggles.

Other protective clothing or equipment: Wear long pants, long sleeved shirt or other body covering clothes. Avoid skin or eye contact.

Work/Hygienic practices: Wash thoroughly after handling and before eating or smoking. Remove contaminated clothing and wash thoroughly before reuse.

Section 9: Physical and Chemical Properties

Appearance: Amber Liquid

Odor: Aromatic Solvent Odor

Boiling Point: N/D

Specific Gravity (H₂O = 1): 0.9226

Vapor Pressure (mmHg): N/D

Melting Point: N/D

Vapor Density (Air = 1): N/D

Evaporation Rate (Butyl Acetate = 1): N/D

Solubility in Water: Emulsifies.

Section 10: Stability and Reactivity

Stability: Stable.

Conditions to avoid for stability: None.

Incompatibility: Strong acids and oxidizers.

Hazardous Decomposition or Byproducts: CO, CO₂

Hazardous Polymerization: Will not occur.

Conditions to avoid for Hazardous Polymerization: None.

Product: 655-422 Prentox® Prenfish™ Toxicant

Section 11: Toxicological Information

Acute Toxicity/Irritation Studies:

(The following data were developed with Prenfish)

Ingestion: Oral LD₅₀ 55.3 mg/Kg (Rat – female)

264 mg/Kg (Rat – male)

178 mg/Kg (Rat – overall)

Dermal: >2020 mg/Kg (Rabbit) (Slightly toxic)

Inhalation: 4-hour LC₅₀ 0.048 mg/l. (Rat) (Highly toxic)

Eye Contact: Moderately irritating (Rabbit)

Skin Contact: Moderately irritating (Rabbit)

Skin Sensitization: Non-sensitizing (Guinea Pig)

(The following data were developed with rotenone technical)

Mutagenic Potential: Rotenone was not mutagenic when tested.

Reproductive Hazard Potential: Rotenone had no reproductive effects when tested

Chronic/Subchronic Toxicity Studies:

Cancer Information: Rotenone was not carcinogenic when tested in rats and mice.

Toxicity of Other Components:

Petroleum solvent: The supplier reports that inhalation of high vapor concentrations (over 1,000 ppm) may cause nervous system effects such as headaches, dizziness, anesthesia, and respiratory tract irritation.

Surfactant: Causes severe eye irritation, which could lead to permanent eye damage. Prolonged or repeated skin contact may cause discomfort and local redness. Mist can irritate the respiratory tract, experienced as nasal discomfort and discharge with chest pain and coughing.

Target Organs: Eyes, skin, respiratory tract.

Section 12: Ecological Information

Summary of Effects: This product is extremely toxic to fish. Fish kills are expected at recommended rates. Consult your State Fish and Game Agency before applying this product to public waters to determine if a permit is needed for such an application. Do not contaminate untreated water when disposing of equipment washwaters.

Section 13: Disposal Considerations

Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Pesticide wastes are toxic.

Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

Product: 655-422 Prentox® Prenfish™ Toxicant

Section 14: Transport Information

DOT Classification: Pesticide liquid, flammable, toxic, n.o.s. (Acetone, Rotenone)

Hazard Class: 3, PG I

Subsidiary hazard class: 6.1

DOT Shipping Label: Poison and/or Toxic

Note: For transport purposes (49FR Part 173.132), the calculated 1-hour LC50 (Rat) is: 0.192 mg/L

Section 15: Regulatory Information

SARA Title III Classification:

Section 311/312:

Acute health hazard

Fire hazard

Section 313 Chemicals:

Aromatic Petroleum Solvent (Supplier recommendation 100 ppm) (CAS # 64742-94-5)

(Not to exceed 80 percent)

Contains the following ingredients, by weight (typical):

Naphthalene (CAS # 91-20-3) 9.9 percent (TWA) 10 ppm

1,2,4-trimethylbenzene (CAS # 95-63-6) 1.7 percent (TWA) 25 ppm

This product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III and of 40 CFR 372. Any copies or redistribution of this MSDS must include this notice.

Proposition 65: This product does not contain any chemical which is known to the State of California to cause cancer or birth defects or other reproductive harm.

CERCLA Reportable Quantity (RQ): None.

RCRA Classification: Ignitable.

TSCA Status: Registered pesticide, exempt from TSCA regulation. All ingredients are on the TSCA inventory.

Other: Rotenone

Illinois toxic substance

Massachusetts Hazardous Substance

New Jersey Special Health Hazardous Substance

Pennsylvania Workplace Hazardous Substance

Acetone

Massachusetts Hazardous Substance

New Jersey Environmental Hazardous Substance

New Jersey Special Health Hazardous Substance

New Jersey Workplace Hazardous Substance

Pennsylvania Workplace Hazardous Substance

Product: 655-422 Prentox® Prenfish™ Toxicant

Section 16: Other Information

NFPA Hazard Ratings: Health: 3 0 Least

Flammability: 4 1 Slight

Reactivity: 0 2 Moderate

3 High

4 Severe

Date Prepared: August 10, 2000

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The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.