

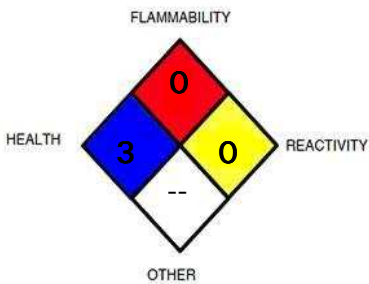




## MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification	
<b>Product Name:</b>	Hygromycin B Solid
<b>Product #:</b>	H-1012
<b>Synonyms:</b>	Antihelmycin, Hydromycin B, Hygromix 2.4 Hygromix-8, Hygromycin /b, Hygrovetine
<b>Supplier:</b>	A.G. Scientific, Inc. 6450 Lusk Blvd E102 San Diego CA 92121 Tele# + 858-452-9925 Fax# + 858-452-9926
<b>Emergency Tele#:</b>	Chemtrec, Tele# in USA 1-800-424-9300, International 1-703-527-3887

Section 2: Composition / Information on Ingredients					
Component	CAS#	EC #	%	Classification	R Phrases
<b>Hygromycin B</b>	31282-04-9	250-545-5	> 25 %	T +, Xi, Xn	R26/27/28 R37/38 R41
<b>Water (H2O)</b>	7732-18-5	231-791-2	> 25 %	-	-

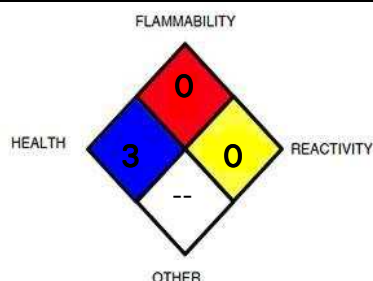
Section 3: Hazards Identification	
<b>Symbols</b>	  6 Toxic
<b>HMIS Classification</b>	

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## NFPA Classification



## Section 4: First Aid Measures

<b>General Overview:</b>	Avoid contact, wear suitable protective clothing, gloves and eye/face protection. Do not breathe vapor.
<b>Inhalation:</b>	If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing give artificial respiration, seek medical attention.
<b>Skin:</b>	Wash immediately with water for 15 minutes. Remove contaminated clothing. Wash contaminated clothing before reuse. Seek medical attention if symptoms appear.
<b>Eyes:</b>	In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes. Remove contacts. Assure adequate flushing of the eyes by separating the eyelids with fingers.
<b>Ingestion:</b>	If swallowed, wash out mouth with water provided person is conscious. DO NOT induce vomiting. Seek medical attention if symptoms appear. Loosen tight clothing like collar, tie, belt or waistband.
<i>See section 11 for more detailed information on health effects &amp; symptoms</i>	

## SECTION 5: Fire Fighting Measures

<b>Flammability of the product:</b>	N/A
<b>Extinguishing Media:</b>	Dry Chemical Powder for SMALL FIRES and carbon dioxide or water spray, fog or foam for LARGE FIRES. Do not use water jet.
<b>Hazardous thermal (de)composition products:</b>	These products are carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO, NO <sub>2</sub> ..).
<b>Special Fire Fighting Procedures:</b>	Wear self-contained breathing apparatus (SCBA) and protective clothing to prevent contact with skin and eyes. Be sure to use an approved/certified respirator or equivalent.
<b>Flash Point:</b>	N/A

## Section 6: Accidental Release Measures

<b>Personal Precautions:</b>	Use Personal Protection Equipment. Splash goggles. Full suit. Boots. Gloves. Avoid dust formation.
<b>Environmental</b>	Do not let product enter drains.





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<b>Precautions:</b>	
<b>Methods for Clean-up:</b>	Sweep up & shovel into suitable disposal container. Ventilate area and wash spill site after material pickup is complete.

## SECTION 7: Handling & Storage

<b>Storage:</b>	+4°C. Keep container tightly closed and in a well ventilated area. Do not store above +4°C. Toxic.
<b>Handling:</b>	Use only in area provided with appropriate exhaust ventilation. Keep away from heat and source of ignition. Empty containers pose a fire risk, evaporate residue under fume hood. Ground all equipment containing material. Do not breathe dust.

## SECTION 8: Exposure controls / Personal Protection

<b>Respiratory Protection:</b>	 <p>Wear appropriate government (NIOSH/MSHA) approved respirator. Do not breathe vapor.</p>	
<b>Skin and Body:</b>	  <p>Chemical-resistant gloves and lab coat/other protective clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling.</p>	
<b>Eyes:</b>	 <p>Safety goggles.</p>	
<b>Ventilation/Engineering Measures:</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.	
<b>Hygiene:</b>	Wash hands after handling compound and before eating, smoking, using lavatory and at	

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	the end of the day.
<b>Other:</b>	Contains no substances with occupational exposure limit values.

## SECTION 9: Physical and Chemical Properties

<b>Appearance &amp; Odor:</b>	Solid
<b>Color:</b>	Light Yellow
<b>Formula:</b>	C <sub>20</sub> H <sub>37</sub> N <sub>3</sub> O <sub>13</sub>
<b>Molecular Wt.</b>	527.53 g/mole
<b>Melting Pt.</b>	N/A
<b>Boiling Pt.</b>	100°C
<b>Density:</b>	N/A
<b>Vapor Pressure:</b>	N/A
<b>Evaporation Rate:</b>	N/A
<b>Vapor Density:</b>	N/A
<b>Water Solubility:</b>	Soluble
<b>Flash Point:</b>	Non flammable
<b>Autoignition Temp:</b>	N/A

## SECTION 10: Stability and Reactivity

<b>Stability:</b>	Stable
<b>Hazardous decomposition products:</b>	Thermal decomposition may produce Carbon Monoxide, Carbon Dioxide, and Nitrogen Oxides.
<b>Materials to Avoid:</b>	Strong oxidizing agents
<b>Conditions to avoid:</b>	Exposure to air or moisture over prolonged periods.

## SECTION 11: Toxicological Information

<b>RTECS#:</b>	WK2130000
<b>ACUTE Toxicity:</b>	<p>VERY TOXIC</p> <p>LD<sub>50</sub>: Oral - rat - 13 mg/kg LD<sub>50</sub>: Inhalation - rat - 4 h - 2.22 mg/l LD<sub>50</sub>: Intraperitoneal - rat - 63 mg/kg LD<sub>50</sub>: Intravenous - mouse - 6 mg/kg LD<sub>50</sub>: Intraperitoneal - guinea pig - 13 mg/kg LD<sub>100</sub>: Oral - rat - 13 MG/KG</p> <p>May be fatal if inhaled, swallowed, or absorbed through skin. Strong sensitizer. Causes severe eye irritation, lachrymator. Causes skin irritation.</p> <p>Material is irritating to mucous membranes and upper respiratory tract. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Exposure can cause: Conjunctivitis, Dermatitis.</p>

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	Target organs: mucous membranes, skin, eyes. Sense Organs and special senses (other olfaction effects) Sense Organs and special senses (Conjunctiva irritation) Behavioral (aggression) Ears
<b>CHRONIC Toxicity:</b>	Chronic exposure may cause nausea, vomiting, at higher exposure can cause unconsciousness. Repeated exposure can cause hearing loss. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.
<b>Chronic Exposure:</b> Carcinogen: Mutagen: Teratogen: Reproductive:	N/A N/A N/A N/A

## SECTION 12: Ecological Information

<b>Ecotoxicity:</b>	N/A
<b>Mobility:</b>	N/A
<b>Persistence and degradability:</b>	N/A
<b>Bioaccumulative potential:</b>	N/A
<b>Other adverse effects:</b>	N/A
<b>Corrosivity Characteristic:</b>	N/A
<b>General Notes:</b>	Do not allow undiluted product or large quantities of it to reach groundwater , water course or sewer system. Do not allow materials to be released into the environment without proper government permits.

## SECTION 13: Disposal Considerations

<b>Residue Waste or Unused product:</b>	<i>Only professional staff trained in such techniques must undertake waste disposal. Observe all appropriate federal, provincial or state and local regulations.</i>
<b>Contaminated Packaging:</b>	Do not re-use empty containers. Dispose of as unused product.







## SECTION 14: Transportation Information

<b>UN ID#:</b>	UN2811
<b>ADR / RID (LAND):</b>  <b>Hazard Class:</b> <b>Packaging Group:</b>	  6.1B II



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<b>Proper shipping name:</b> <b>Classification Code:</b> <b>Label:</b>	Toxins, extracted from living sources, solid, n.o.s. (Hygromycin B) T1 6
<b>DOT regulations:</b>	 
<b>Hazard Class:</b> <b>Identification number:</b> <b>Packaging Group:</b> <b>Proper shipping name:</b> <b>Label:</b>	6 UN2811 II Toxins, extracted from living sources, solid, n.o.s. (Hygromycin B) 6
<b>IMDG/IMO (SEA):</b>	 
<b>Hazard Class:</b> <b>Identification number:</b> <b>Packaging Group:</b> <b>Marine Pollutant:</b> <b>Severe Marine Pollutant:</b>	6 UN2811 II No No
<b>IATA/DGR (AIR):</b>	 
<b>IATA Class:</b> <b>UN/ID Number:</b> <b>Label:</b> <b>Packaging Group:</b> <b>Proper shipping name:</b>	6 2811 6 II Toxins, extracted from living sources, solid, n.o.s. (Hygromycin B)
<b>Special Provisions:</b>	N/A

## SECTION 15: Regulatory Information

<b>EU Regulations:</b>	Very toxic, Irritant.
<b>SYMBOLS:</b>	  T+, Xi, Xn
<b>Risk Phrases:</b>	R26/27/28: Very toxic by inhalation, in contact with skin and if swallowed. R37/38: Irritating to respiratory system and skin. R41: Risk of serious damage to eyes.
<b>Safety Phrases:</b>	S23: Do not breathe vapor. S26: In case of contact with eyes, rinse immediately with plenty of water and seek

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	<p>medical advice.            S28: After contact with skin, wash with copious amounts of water.            S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.</p>
<b>CAS#</b>	31282-04-9
<b>EC#</b>	250-545-5
<b>US Regulations:</b>	<p>TSCA. No products were found.            California Proposition 65: This product is known to cause developmental toxicity.</p>
<b>HCS Classification:</b>	N/A
<b>U.S. Federal Regulations:</b>	<p>OSHA: Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Respiratory sensitizer, Irritant            TSCA: No products were found.            SARA 302/304/311/312 extremely hazardous substances: No products were found            SARA 302/304 emergency planning and notification: No products were found.            SARA 302/304/311/312 hazardous chemicals: No products were found.            SARA 311/312 MSDS distribution-chemical inventory-hazard identification: Acute Health Hazard, Chronic Health Hazard            SARA 313 toxic chemicals notification and release reporting: No products were found.            Clean Water Act (CWA) 307: No products were found.            Clean Water Act (CWA) 311: No products were found.            Clean Air Act (CAA) 112 accidental release prevention: No products were found.            Clean Air Act (CAA) 112 regulated flammable substances: No products were found.            Clean Air Act (CAA) 112 regulated toxic substances: No products were found.</p>
<b>WHMIS (Canada):</b>	<p>Class D-1A: Very toxic. Material causing immediate and serious toxic effects.            Class D-2A: Very toxic. Material causing other toxic effects.</p>

## SECTION 16: Other Information

**LIABILITY STATEMENT:** *The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. A.G. Scientific shall not be held liable for any damages resulting from handling or from contact with the above product. A.G. Scientific products are for research purposes only. Not for human use or consumption.*