

MATERIAL SAFETY DATA SHEET



Section 1: Product & Company Identification

Product Name:	Hygromycin B Solution
Product #:	H-1012
Synonyms:	Antihelmycin, Hydromycin B, Hygromix 2.4 Hygromix-8, Hygromycin /b, Hygrovetine
Supplier:	A.G. Scientific 6450 Lusk Blvd E102 San Diego CA 92121 Tele# + 858-452-9925 Fax# + 858-452-9926
Emergency Tele#:	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
Hygromycin B	31282-04-9	250-545-5	> 25 %	T+, Xi, Xn	R26/27/28 R37/38 R41
Water (H2O)	7732-18-5	231-791-2	> 25 %	-	-

Section 3: Hazards Identification

	Highly toxic (USA) Very Toxic (EU) Irritating respiratory system and skin. Risk of serious damage to eyes
Symbols:	 
Risk Phrases:	R 26/27/28: Very Toxic by inhalation, in contact with skin and if swallowed. R 37/38: Irritating to respiratory system and skin. R 41: Risk of serious damage to eyes.

Section 4: First Aid Measures

General Overview:	Avoid contact, wear suitable protective clothing, gloves and eye/face protection. Do not breathe vapor.
Inhalation:	If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing give artificial respiration, seek medical attention.



Skin:	Wash immediately with water for 15 minutes. Remove contaminated clothing. Wash contaminated clothing before reuse. Seek medical attention if symptoms appear.
Eyes:	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.
Ingestion:	If swallowed, wash out mouth with water provided person is conscious. Do not induce vomiting. Seek medical attention if symptoms appear.
	<i>See section 11 for more detailed information on health effects & symptoms</i>

SECTION 5: Fire Fighting Measures

Extinguishing Media:	Carbon Dioxide, Dry Chemical Powder or Appropriate Foam.
Unusual Fire & Explosion Hazards:	Emits Toxic Fumes under Fire Condition.
Special Fire Fighting Procedures:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Flash Point:	Non-flammable

Section 6: Accidental Release Measures

Personal Precautions:	Use Personal Protection Equipment. Wear Self-contained breathing apparatus, rubber boots and heavy rubber gloves.
Environmental Precautions:	Evacuate area.
Methods for Clean-up:	For solid material sweep up & shovel into suitable disposal container. For liquids absorb with sand or vermiculite, and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: Handling & Storage

Storage:	+4°C
Handling:	Use only in area provided with appropriate exhaust ventilation
Safe Handling Advice:	Wear personal protective equipment
Incompatible Products:	Oxidizing and spontaneously flammable products

SECTION 8: Exposure controls / Personal Protection



Respiratory Protection:	Wear appropriate government (NIOSH/MSHA) approved respirator. Do not breathe vapor.
Skin:	Chemical-resistant gloves and other protective clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling.
Eyes:	Safety goggles.
Ventilation:	Use only in a chemical fume hood
Other:	Keep product container tightly closed. Store in a cool dry place. Do not eat, drink or smoke at work. Safety Shower & eye bath available. Soiled clothing and footwear must be taken off at once and removed from room. Destroy contaminated leather shoes and leather gloves.

SECTION 9: Physical and Chemical Properties

Appearance & Odor:	Liquid
Physical State:	
Formula:	$C_{20}H_{37}N_3O_{13}$
Molecular Wt.	M.W. 527.53
Product #:	H-1012
Melting Pt.	n/a
Boiling Pt.	100°Celsius
Density:	n/a
Vapor Pressure:	n/a
Evaporation Rate:	n/a
Vapor Density:	n/a
Solubility (in water):	Soluble
Flash Point:	Non flammable
Autoignition Temp:	n/a

SECTION 10: Stability and Reactivity

Stability:	Stable
Polymerization:	Hazardous polymerization will not occur.
Hazardous decomposition products:	Thermal decomposition may produce Carbon Monoxide, Carbon Dioxide, and Nitrogen Oxides.
Materials to Avoid:	Oxidizing agents
Conditions to avoid:	Exposure to air or moisture over prolonged periods.

SECTION 11: Toxicological Information

Component:	Hygromycin B RTECS#: WK2130000
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ACUTE Toxicity:	<p>TOXIC.</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>												
CHRONIC Toxicity:	<p>Chronic exposure may cause nausea, vomiting, at higher exposure can cause unconsciousness. Repeated exposure can cause hearing loss.</p> <p>To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.</p>												
<p>Chronic Exposure:</p> <p>Carcinogen:</p> <p>Mutagen:</p> <p>Teratogen:</p> <p>Reproductive:</p>	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>												
Toxicity Data:	<table border="0"> <tr> <td>IHL-RAT LC₅₀: 2220 UG/M3/4H</td> <td>GISAAA 38(5),11, 1973</td> </tr> <tr> <td>IPR-RAT LC₅₀: 63 MG/KG</td> <td>GISAAA 38(5), 11, 1973</td> </tr> <tr> <td>ORL-MUS LD₅₀: 46000 Units/KG</td> <td>PCJOAU 1, 396, 1967</td> </tr> <tr> <td>IVN-MUS LD₅₀: 6 MG/KG</td> <td>85GDA2 1,202, 1980</td> </tr> <tr> <td>IPR-GPG LD₅₀: 13 MG/KG</td> <td>GISAAA 38(5),11, 1973</td> </tr> <tr> <td>ORL-RAT LD₁₀₀: 13 MG/KG</td> <td></td> </tr> </table>	IHL-RAT LC ₅₀ : 2220 UG/M3/4H	GISAAA 38(5),11, 1973	IPR-RAT LC ₅₀ : 63 MG/KG	GISAAA 38(5), 11, 1973	ORL-MUS LD ₅₀ : 46000 Units/KG	PCJOAU 1, 396, 1967	IVN-MUS LD ₅₀ : 6 MG/KG	85GDA2 1,202, 1980	IPR-GPG LD ₅₀ : 13 MG/KG	GISAAA 38(5),11, 1973	ORL-RAT LD ₁₀₀ : 13 MG/KG	
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Target Organs:	<p>Sense Organs and special senses (other olfaction effects)</p> <p>Sense Organs and special senses (Conjunctiva irritation)</p> <p>Behavioral (aggression)</p> <p>Ears</p>												

SECTION 12: Ecological Information

Ecotoxicity:	N/A
Mobility:	N/A
Persistence and degradability:	N/A
Bioaccumulative potential:	N/A
Other adverse effects:	N/A

SECTION 13: Disposal Considerations

Residue Waste or	<i>Only professional staff trained in such techniques must undertake waste disposal.</i>
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Unused product:	<i>Observe all appropriate federal, provincial or state and local regulations.</i> The material for disposal should be mixed with, or dissolved in, a combustible solvent and burnt in a chemical incinerator equipped with an afterburner and scrubber.
Contaminated Packaging:	Do not re-use empty containers

SECTION 14: Transportation Information

UN ID#:	3172
ADR / RID (LAND)	Proper shipping name: Toxins, extracted from living sources, liquid, n.o.s. Hazard Class: 6.1, toxic substances, inhalation Packaging Group: II Classification Code: T1 HIN: 6.1B
IMDG/IMO (SEA)	Proper shipping name: Toxins, extracted from living sources, liquid, n.o.s. Hazard Class: 6.1 Packaging Group: II Marine Pollutant: No Severe Marine Pollutant: no
IATA/DGR (AIR)	Proper shipping name: Toxins, extracted from living sources, liquid, n.o.s. Hazard Class: 6.1 IATA Label: Toxic Packaging Group: II
Special Provisions:	

SECTION 15: Regulatory Information

EU Information:	Very Toxic, Irritant: T, Xi
	 
Risk Phrases:	R 26/27/28: Very Toxic by inhalation, in contact with skin and if swallowed. R 37/38: Irritating to respiratory system and skin. R 41: Risk of serious damage to eyes.
Safety Phrases:	S 23: Do not breathe vapor. S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28: After contact with skin, wash with copious amounts of water. S 36/37/39: Wear suitable protective clothing, gloves and eye/face protection.



	S45: In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).
CAS#	31282-04-9
EC#	250-545-5
US Regulations:	California Proposition 65: This product is or contains chemical(s) known to the state of California to cause developmental toxicity.
HCS Classification:	N/A
WHMIS (Canada):	Class D-1A: material causing immediate and serious toxic effects (Very Toxic). Class D-2A: material causing other toxic effects (Very Toxic).
OTHER:	OEL = MAK OEL-Russia: STEL 0.001 MG/M3; Skin Jan 1993 NOHS 1974: HZD M2770; NIS 1; TNF 71; NOS 1; TNE 357

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.*