Material safety data sheet
according to 1907/2006/EG, Article 31

GENAXXON bioscience

Product number : M3126	Product name :	Hygromycin B

1. Identification of the substance/preparation and of the company

1.1. Product identifier

Product Name: Hygromycin B
Catalogue Number: M3126
CAS Number: 31282-04-9
EC Number: 250-545-5
REACH No.: A registration number is not available for this substance as it is a mixture.

1.2. Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
Application of the substance/the preparation
Cell culture applications
Antibiotic for research usage

Not approved for human or animal diagnostic or therapeutic procedures.
Not for household use.
Not for consumption

1.3. Details of the supplier of the safety data sheet
Manufacturer /Supplier:
Genaxxon bioscience GmbH, Söflinger Str. 70, 89077 Ulm/Germany.
Tel.: +49 (0)731 3608 123, info@genaxxon.com

Further information available from: General Management
Emergency telephone number:
Poison Information Centre Mainz, Germany, Tel.: +49 (0)6131 19240 / 24 h

NOTE: If this product is a kit or supplied with more than one material, please refer to the MSDS for each component for hazard information.

Product Use:
This products are for laboratory research use only and are not intended for human or animal diagnostics, therapeutics or other clinical uses.

2. Hazardous identification

2.1. Classification of the substance/preparation/mixture
Classification according to Regulation (EC) No 1272/2008

Acute Tox. 2	H300	Fatal if swallowed.
Acute Tox. 2	H310	Fatal in contact with skin.
Acute Tox. 1	H330	Fatal if inhaled.
Eye Dam. 1	H318	Causes serious eye damage.
Resp. Sens. 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled

2.2. Label elements
Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labeled according to the CLP regulation.
Hazard Pictograms

GHS05 GHS07 GHS08

Signal word: Danger

Hazard determining components of labelling:
hygromycin B
Hazard statement(s)

H300 + H310 + H330	Fatal if swallowed, in contact with skin or if inhaled.
H318	Causes serious eye damage
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P304 + P341	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

2.3. Other hazards
Results of PBT and vPvB assessment

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PBT: Not applicable.
vPvB: Not applicable

3. Composition/information on ingredients

3.2. Chemical characterisation: Mixtures
Description: aqueous solution

Component	Classification	Concentration
Hygromycin B		
CAS No.: 21282-04-9 EC No.: 250-545-5	Acute Tox. 2 - H300 Fatal if swallowed. Acute Tox. 2 - H310 Fatal in contact with skin. Acute Tox. 1 - H330 Fatal if inhaled. Eye Dam. 1 - H318 Causes serious eye damage. Resp. Sens. 1 - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.	>5% - <7%

Additional information: For the wording of the listed hazard phrases refer to section 16.

4. First-aid measures

4.1. Description of first aid measures
General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Remove breathing equipment only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Involve doctor immediately.
After inhalation:
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
After skin contact:
Call a doctor immediately.
Immediately wash with water and soap and rinse thoroughly.
Immediately remove any clothing soiled by the product.
After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing:
Rinse out mouth.
Call a doctor immediately.
4.2. Most important symptoms and effects, both acute and delayed: No further relevant information available.

5. Fire-fighting measures

5.1. Extinguishing media
Suitable extinguishing agents:
Water Spray. Carbon Dioxide. Dry chemical powder, or appropriate foam. Fight larger fires with water spray or alcohol resistant foam.
5.2. Special hazards arising from the substance or mixture:
Formation of toxic gases is possible during heating or in case of fire.
In case of a fire, the following can be released:
Carbon oxides (CO, CO2)
Nitrogen oxides (NOx),
Non-combustible
5.3. Advice for fire fighters:
Protective equipment:
Mouth respiratory protective device.
Wear self-contained respiratory protective device.
Additional information:
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Contain escaping vapours with water.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid breathing vapours, mist or gas.
Avoid substance contact.
Ensure adequate ventilation.
Use respiratory protective device against the effects of fumes/dust/aerosol.

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6.2. Environmental precautions: Do not allow product to enter sewage system, surface or ground water.
Discharge into the environment must be avoided.

6.3. Methods and materials for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Clean up affected area.

6.4. Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7. Handling and storage

7.1. Precautions for safe handling:
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Avoid contact with skin and eyes.
Prevent formation of aerosols.
Any unavoidable deposit of dust must be regularly removed.
Information about fire – and explosion protection:
Keep respiratory protective device available.
The product is not flammable.

7.2. Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: Keep receptacles tightly sealed.
Store only in the original receptacle.
Information about storage in one common storage facility: No special measures required.
Further information about storage conditions:
Store under lock and key and with access restricted to technical experts or their assistants only.
Keep container tightly sealed.
Accessible for authorised persons only.
Recommended storage temperature: +2°C to +8°C
Storage class: 13

7.3. Specific end use(s): No further relevant information available.

8. Exposure controls/personal protection

8.1. Control parameters
Ingredients with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
Additional information: The lists valid during the making were used as basis.

8.2. Exposure controls:
Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Avoid contact with eyes and skin.
Store protective clothing separately.
Vacuum clean contaminated clothing. Do not blow or brush off contamination.
Immediately remove all soiled and contaminated clothing.
Respiratory protection:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Filter ABEK
Protection of hands:

Protective gloves (EN 374)

The glove material has to be impermeable and resist ant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

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Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
For the permanent contact gloves made of the following materials are suitable:
Nitrile rubber, NBR
Recommended thickness of the material: ≥0.11 mm
Value for permeation: Level: >480 min.

As protection from splashes gloves made of the following materials are suitable:
Nitrile rubber, NBR
Recommended thickness of the material: ≥0.11 mm
Value for the permeation: Level ≥480 min.
Eye/face protection: Safety glasses

Gauze goggles

Body protection:
Use protective suit.
Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Information	
Appearance	
Form:	Fluid
Colour:	Colouless to slightly yellow
Odour:	Odourless
pH value at 20°C:	Not determined
Change in conditions	
Melting point/Melting range:	Undetermined
Boiling point/Boiling range:	Undetermined
Flash point:	Not applicable
Flammability (solid, gaseous):	Product is not flammable
Decomposition temperature:	Not determined
Self-ignition:	Product is not self-igniting
Danger of explosion:	Product does not present an explosion hazard
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapour pressure:	Not applicable
Density (20°C):	1.00g/cm3
Bulk density at 20°C:	Not determined
Solubility in / Miscibility with	
(water, 20°C):	Soluble
Partition coefficient (n-octanol/water):	Not determined
Viscosity:	
Dynamic:	Not applicable
Kinematic:	Not applicable
Solvent content:	
Organic solvents:	0.0%
VOC (EC)	0.00%

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9.2. Other information:
Appearance:
Form: Liquid
Important information on protection of health and environment, and on safety.
Explosive properties: Product does not present an explosion hazard.
Change in condition
Evaporation rate: Not applicable.

Information with regard to physical hazard classes

Explosives:	Void ·
Flammable gases:	Void ·
Aerosols:	Void ·
Oxidising gases:	Void ·
Gases under pressure:	Void ·
Flammable liquids:	Void ·
Flammable solids:	Void ·
Self-reactive substances and mixtures:	Void ·
Pyrophoric liquids:	Void ·
Pyrophoric solids:	Void
Self-heating substances and mixtures:	Void ·
Substances and mixtures, which emit flammable gases in contact with water:	Void ·
Oxidising liquids:	Void ·
Oxidising solids:	Void ·
Organic peroxides:	Void ·
Corrosive to metals:	Void ·
Desensitised explosives:	Void

10. Stability and reactivity

10.1. Reactivity: No further relevant information available.
10.2. Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3. Possibility of hazardous reactions: No dangerous reactions known.
10.4. Conditions to avoid: No further relevant information available.
10.5. Incompatible materials: No further relevant information available.
10.6. Hazardous decomposition products: In the event of fire: See chapter 5 of this data sheet.

11. Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Fatal if swallowed, in contact with skin or if inhaled.
LD50/LC50 values relevant for classification
LD/LC50 values relevant for classification: Quantitative data on the toxicological effect of this product are not available.
LD50/LC50 values relevant for classification

Components	Type	Value	Species
31282-04-9 hygromycin B			
Oral	**LD50**	13mg/kg (rat)	
Dermal	**LD50**	55mg/kg (rabbit)	
Inhalative	**LC50/4 h**	0.0022mg/L (rat)	

Primary irritant effect
Skin corrosion/irritation: Based on available data, the classification criteria are not met.
Serious eye damage/irritation: Based on available data, the classification criteria are not met.
After inhalation: No irritant effect.
Respiratory or skin sensitization: Based on available data, the classification criteria are not met..
CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: May damage the unborn child.
STOT-single exposure: Based on available data, the classification criteria are not met.
STOT-repeated exposure: Based on available data, the classification criteria are not met.
Aspiration hazard: Based on available data, the classification criteria are not met.

11.2. Information on other hazards
Endocrine disrupting properties: None of the ingredients is listed.

12. Ecological Information

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12.1. Toxicity
Aquatic toxicity: No further relevant information available
12.2. Persistence and degradability: No further relevant information available
12.3. Bioaccumulative potential: No further relevant information available.
12.4. Mobility in soil: No further relevant information available
12.5. Results of PBT and vPvB assessment
PBT: Not applicable
vPvB: Not applicable

12.6. Endocrine disrupting properties: The product does not contain substances with endocrine disrupting properties.
12.7. Other adverse effects
Additional ecological information

General notes:
Water hazard class 1 (German Regulation) (Self-assessment): hazardous for water. Do not allow product to reach ground water, water course or sewage system.

13. Disposal considerations

13.1. Waste treatment methods
Recommendation:
Chemicals must be disposed of in compliance with the respective national regulations.
Must not be disposed together with household garbage.
Do not allow product to reach sewage system.
Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations. Packagings that may not be cleansed are to be disposed of in the same manner as the product.
Recommended cleaning agents: Water, if necessary together with cleansing agents.

14. Transport information

14.1. UN-Number
ADR/RID, ADN, IMDG, IATA: 2810

14.2. UN proper shipping name
ADR/RID, ADN, IMDG, IATA: ADR/RID: Giftiger Organischer Flüssiger Stoff, N.A.G. (Hygromycin B)
IMDG: Toxic Liquid, Organic, N.O.S. (Hygromycin B)
IATA: Toxic Liquid, Organic, n.o.s. (Hygromycin B)
Passenger Aircraft: Not permitted for transport.

14.3. Transport hazard class(es)

ADR/RID, ADN, IMDG, IATA:
Class 6.1

14.4. Packaging group
ADR/RID, IMDG, IATA: 6.1

14.5. Environmental hazards:
Marine pollutant: No

14.6. Special precautions for user: Not applicable

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable

Transport/Additional information: Not dangerous according to the above specifications.

UN "Model Regulation": UN 2810

15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU
Named dangerous substances - ANNEX I: Substance is not listed
DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II: None of the ingredients is listed. ·
REGULATION (EU) 2019/1148 ·
Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3)): None of the

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ingredients is listed. ·
Annex II - REPORTABLE EXPLOSIVES PRECURSORS: None of the ingredients is listed.

Regulation (EC) No 273/2004 on drug precursors: None of the ingredients is listed.

Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors: None of the ingredients is listed.

National regulations:
Other regulations, limitations and prohibitive regulations

Substances of very high concern (SVHC) according to REACH, Article 57: None of the ingredients is listed. ·

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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. 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. Genaxxon bioscience GmbH, shall not be held liable for any damage resulting from handling or from contact with the above product.

Disclaimer
This product is for R&D use only. Not for drug, household or other uses.

Abbreviations and Acronyms:

ACAO-TI: Technical Instructions by the “International Civil Aviation Organization” (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS: Chemical Abstracts Service (division of the American Chemical Society)
EINECS: European Inventory of Existing Commercial Chemical Substances
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
GHS: Globally Harmonized System of Classification and labeling of Chemicals
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the “International Air Transport Association” (IATA)
ICAO: International Civil Aviation Organization
IMDG: International Maritime code for Dangerous Goods
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 2: Acute toxicity – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 1: Acute toxicity – Category 1
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1