

**1 Identification of the substances/ mixture and of the company/ undertaking****1.1 Product Identifiers**

Product Number M110

Product Name **B<sub>12</sub> Assay Agar, Using *E.coli* Mutant Culture (Harrison et al. Medium)**

REACH Registration Number This product is a mixture. Reach registration number is not available for this mixture.

**1.2 Relevant identified uses of the substance or mixture and uses advised against****1.2.1** Relevant identified uses Laboratory Chemicals, Analytical Purpose, Biochemical Analysis**1.3 Details of the supplier of the safety data sheet**

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Emergency Tel. No. Please contact the regional HiMedia representation in your country

**2 Hazards Identification****2.1 Classification of the substance or mixture****CLP Classification-Regulation (EC) No. 1272/2008[EU-GHS/CLP]**

Acute toxicity, Oral, (Category 4), H302

Serious eye damage or eye irritation, (Category 2A), H319

**2.2 Label elements****Labeling according to Regulation (EC) No.1272/2008**

Pictogram

Signal word Warning

Hazard Statement(s)

H319 Causes serious eye irritation

Precautionary Statement(s)

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 IF eye irritation persists: Get medical advice/attention.

**2.3 Other Hazards**

None

### 3 Composition/Information On Ingredients

#### 3.2 Mixture

Component	Classification	Concentration
Ammonium chloride		
CAS No. : 12125-02-9 EC No. : 235-186-4 Index-No : 017-014-00-8	<b>As Per EC Regulation 1272/2008</b> Acute Tox.oral 4; Eye Irrit. 2A H302; H319	>=1.0 - <=10.0%

Component	Classification	Concentration
Ammonium nitrate		
CAS No. : 6484-52-2 EC No. : 229-347-8	<b>As Per EC Regulation 1272/2008</b> Ox. Sol. 3; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3 H272; H315; H319; H335	>=1.0 - <=10.0%

Component	Classification	Concentration
Copper sulphate		
CAS No. : 7758-98-7 EC No. : 231-847-6	<b>As Per EC Regulation 1272/2008</b> Acute Tox.oral 4; Skin Irrit. 2; Eye Irrit. 2A; Aquatic Chronic 1 H302; H315; H319; H410	>=0.001 - <=0.01%

Component	Classification	Concentration
Ferrous sulphate		
CAS No. : 7720-78-7 EC No. : 231-753-5 Index-No : 026-003-00-7 Molecular Formula : FeSO <sub>4</sub>	<b>As Per EC Regulation 1272/2008</b> Acute Tox.oral 4; Skin Irrit. 2; Eye Irrit. 2A H302; H315; H319	>=0.001 - <=0.01%

Component	Classification	Concentration
Zinc sulphate		
CAS No. : 7446-19-7 EC No. : 231-793-3	<b>As Per EC Regulation 1272/2008</b> Eye Dam. 1; Aquatic Chronic 1 H318; H410	>=0.001 - <=0.01%

Component	Classification	Concentration
Calcium chloride, anhydrous		
CAS No. : 10043-52-4 EC No. : 233-140-8	<b>As Per EC Regulation 1272/2008</b> Eye Irrit. 2A H319	>=0.001 - <=0.01%

Component	Classification	Concentration
Manganese chloride anhydrous		
CAS No. : 7773-01-5 EC No. : 231-869-6	<b>As Per EC Regulation 1272/2008</b> Acute Tox.oral 4; Eye Dam. 1; STOT RE 2; Aquatic Chronic 2 H302; H318; H373; H411	>=0.001 - <=0.01%

Refer Section 16 for complete statement of H codes and its classification

## 4 First Aid Measures

### 4.1 Description of first aid measures

#### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### **In case of skin contact**

Wash with plenty of soap and water. Consult a physician.

#### **In case of eye contact**

Rinse immediately with plenty of water for at least 15 minutes. Consult a physician.

#### **If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

No data available.

### 4.3 Indication of immediate medical attention and special treatment needed

No data available

## 5 Fire Fighting Measures

### 5.1 Extinguishing media

#### **Suitable extinguishing media**

Use water spray, alcohol- resistant foam, dry chemical or carbon dioxide

#### **Unsuitable extinguishing media**

No data available.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Potassium oxides,, Hydrogen chloride gas

### 5.3 Precautions for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary

### 5.4 Further information

No data available

## 6 Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.  
Evacuate personnel to safe areas.

## **6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## **6.3 Methods and materials for containment and cleaning up**

Soak up with inert adsorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

## **6.4 Reference to other sections**

For disposal see Section 13.

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# **7 Handling and Storage**

## **7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Normal measures for preventive fire protection.

## **7.2 Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Recommended Storage Temperature :** On receipt store between 2-8°C

## **7.3 Specific end uses**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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# **8 Exposure Controls/Personal Protection**

## **8.1 Control parameters**

Components with workplace control parameters

## **8.2 Exposure controls**

### ***Appropriate engineering controls***

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the products.

### ***Personal protective equipment***

#### ***Hygiene measure***

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with the product.

#### ***Eye/face protection***

Tightly fitting safety goggles; Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

#### ***Skin protection***

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425/EEC and the standard EN ISO 374-1/2016 derived from it.

#### ***Body protection***

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### ***Respiratory protection***

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to

engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Environment exposure controls**

Do not empty into drains.

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**9 Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

Appearance	Cream to yellow coloured homogeneous free flowing powder
Odour	No data available
Odour Threshold	No data available
pH	7.00 - 7.40
Melting/freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	No data available
Flammability (Solid, gas)	No data available
Vapour pressure	No data available
Relative density	No data available
Water Solubility	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Vapour density	No data available
Thermal decomposition	No data available

**9.2 Other safety information**

No data available

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**10 Stability and Reactivity**

**10.1 Reactivity**

No data available

**10.2 Chemical stability**

No data available

**10.3 Possibility of hazardous reactions**

No data available

**10.4 Conditions to avoid**

No data available

**10.5 Incompatible materials**

Strong oxidizing agents

**10.6 Hazardous decomposition products**

Refer Section 5.2. Other Decomposition products not known.

## **11 Toxicological Information**

### **11.1 Information on toxicological effects**

#### ***Acute toxicity***

No data available

#### ***Skin corrosion/irritation***

No data available

#### ***Serious eye damage/eye irritation***

No data available

#### ***Respiratory or skin sensitisation***

No data available

#### ***Germ cell mutagenicity***

No data available

#### ***Carcinogenicity***

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### ***Reproductive toxicity***

No data available

#### ***Specific target organ toxicity- single exposure***

No data available

#### ***Aspiration hazard***

No data available

#### ***Potential Health Effects***

##### ***Inhalation***

REFER SECTION 2

##### ***Skin***

REFER SECTION 2

##### ***Eyes***

REFER SECTION 2

##### ***Ingestion***

REFER SECTION 2

#### ***Additional Information***

RTECS : No data available

### **11.2 Components**

#### **Ammonium nitrate**

##### ***Acute oral toxicity***

LD50 rat: 2,462 mg/kg

Symptoms: Nausea, Vomiting, Diarrhoea, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

(OECD Test Guideline 401)

##### ***Acute inhalation toxicity***

LC50 rat: > 88.8 mg/l; 4 h (IUCLID)

Symptoms: Inhalation may lead to the formation of oedemas in the respiratory tract.

(OECD Test Guideline 401)

#### **Additional Information:**

RTECS:BR9050000

*Further information:*

After absorption of large quantities:

Symptoms: Methaemoglobinaemia with headache, cardiac arrhythmia, drop in blood pressure, dyspnoea, and spasms, key symptom: cyanosis (blue colouration of the blood). The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting and diarrhoea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis and haemolysis.

**Ammonium Chloride**

*Acute Oral Toxicity*

Rat LD50: 1,650 mg/kg

*Irritation and corrosion*

Skin - rabbit - No skin irritation

Eyes - rabbit - Eye irritation

Sensitisation -Non sensitizer

*Chronic exposure*

IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

*Signs and Symptoms of Exposure*

No data available

*Potential Health Effects*

*Inhalation*

May be harmful if inhaled. May cause respiratory tract irritation.

*Skin*

May be harmful if absorbed through skin. May cause skin irritation.

*Eyes*

Causes eye irritation.

*Ingestion*

Harmful if swallowed

**Ferrous sulphate**

*Acute Oral Toxicity*

Mouse LD50: 1.520 mg/kg

**Additional Information**

RTECS: NO8510000

**Copper sulphate**

*Acute oral toxicity*

Rat LD50: 482 mg/kg

*Acute dermal toxicity*

Rat LD50:>2000 mg/kg

*Skin irritation*

Rabbit Result: Non irritant

*Eye irritation*

Rabbit Result: Highly irritating

*Skin sensitization*

Guinea pig Result: Non sensitizing

*Genetic toxicity(in-vitro)*

Ames test  
Result: Negative (As Per OECD Test Guideline 471)  
*Genetic toxicity(in-vivo)*  
Mouse Micronucleus assay  
Result: Negative  
*Carcinogenicity*  
Rat Result: Negative  
*Toxicity to Reproduction*  
No data available  
*Teratogenicity*  
No data available

**Additional information:**

RTECS: GL8800000

**Calcium chloride**

*Acute oral toxicity*  
Rat LD50 : 1,000 mg/kg  
(As per IUCLID)  
*Acute dermal toxicity*  
Rat LD50 : 2,630 mg/kg  
(As per IUCLID)  
*Skin irritation*  
Rabbit  
Result : No irritation  
(As per OECD Test Guideline 404)  
*Eye irritation*  
Rabbit  
Result: Eye irritation  
(As per OECD Test Guideline 405)  
Causes serious eye irritation.

**Additional Information**

RTECS: EV9800000

Zinc Sulphate, Heptahydrate  
Acute Oral Toxicity  
Rat LD50: 1,260 mg/kg (As Per RTECS)  
Additional information  
RTECS: ZH5300000

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**12 Ecological Information**

**12.1 Toxicity**

No data available

**Components**

**Ammonium chloride**

*Toxicity to fish*



Oncorhynchus mykiss (rainbow trout)LC50: 42.91 mg/l; 96 h  
(AS per ECHA)

Cyprinus carpio (Carp) LC50:209.00 mg/l;96 h

Lepomis macrochirus (Bluegill sunfish) EC10:4.28 mg/l; 30 d  
(As per ECHA)

*Toxicity to daphnia and other aquatic invertebrates*

Daphnia magna (Water flea)EC50: > 100 mg/l; 48 h  
(As per ECHA)

Daphnia magna (Water flea)LC50: 161 mg/l - 48 h

*Toxicity to algae*

Chlorella vulgaris (Fresh water algae)EC50: 1,300 mg/l; 5 d  
(As per ECHA)

*Toxicity to bacteria*

EC50 activated sludge: 1,310 mg/l; 0.5 h  
(OECD Test Guideline 209)

## **Components**

### **Ferrous sulphate**

*Toxicity to fish*

Brook trout (Salvelinus fontinalis) LC 50: 0.41 mg/l ; 96h

*Toxicity to daphnia and other aquatic invertebrates*

Water flea (Daphnia magna) EC 50:6.15 mg/l;48h

## **Components:**

### **Ammonium Nitrate**

*Toxicity to fish*

LC50 Cyprinus carpio (Carp): 74 mg/l; 48 h (IUCLID)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 555 mg/l(IUCLID)

*Toxicity to algae*

IC50 Scenedesmus quadricauda (Green algae): 83 mg/l(IUCLID)

## **Component:**

### **Copper sulphate**

*Toxicity to fish*

Oncorhynchus mykiss Flow through test LC50: 200 µg/L;96h

*Toxicity to aquatic invertebrates*

Daphnia magna(Water flea) Static test LC50: 7 µg/L;48h

*Toxicity to aquatic alga and cyanobacteria*

Phaeodactylum tricornutum Static test EC10: 2.9 µg/L;72h

*Toxicity to terrestrial arthropods*

Folsomia fimetaria EC10 :688mg/kg;21d

## **Components**

### **Calcium chloride**

*Toxicity to fish*

Lepomis macrochirus (Bluegill sunfish) LC50 : 10,650 mg/l; 96 h

(As per IUCLID)

*Toxicity to daphnia and other aquatic invertebrates*

Daphnia magna (Water flea) EC50 : 144 mg/l; 48 h

(As per IUCLID)

*Toxicity to algae*

Algae IC50 : 3,130 mg/l; 120 h

(As per IUCLID)

Components

Zinc Sulphate, Heptahydrate

Toxicity to fish

Oncorhynchus mykiss (rainbow trout) LC50: 0.1 mg/l; 96 h

(As Per ECOTOX Database)

Toxicity to algae

Scenedesmus quadricauda (green algae) IC50: 0.52 mg/l; 5 d

(As Per IUCLID)

## **12.2 Persistence and degradability**

No data available

## **12.3 Bioaccumulative potential**

No data available

## **12.4 Mobility in soil**

No data available

## **12.5 PBT and vPvB assessment**

This preparation contains no substance considered to be persistent, bioaccumulating or toxic (PBT) at levels of 0.1% or higher.

## **12.6 Other adverse effects**

No data available

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## **13 Disposal Considerations**

### **13.1 Waste treatments methods**

**Product**

Offer surplus and non-recyclable solutions to a licenced disposal company. Contact a licenced professional waste disposal service to dispose off this material.

### **13.2 Contaminated packaging**

Dispose of as unused product.

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## **14 Transport Information**

### **14.1 UN-No**

ADNR : ADR : IATA\_C : IATA\_P : IMDG : RID :

### **14.2 UN proper shipping name**

ADNR : Not dangerous goods

ADR : Not dangerous goods

IATA\_C : Not dangerous goods

IATA\_P : Not dangerous goods  
IMDG : Not dangerous goods  
RID : Not dangerous goods

**14.3 Transport hazard class(es)**

ADNR : - ADR : - IATA\_C : - IATA\_P : - IMDG : - RID : -

**14.4 Packaging group**

ADNR : ADR : IATA\_C : IATA\_P : IMDG : RID :

**14.5 Environmental hazards**

ADNR : No ADR : No IMDG : Marine pollutant No IATA\_C : No IATA\_P : No RID : No

**14.6 Special precautions for use**

No data available

**15 Regulatory Information**

This safety datasheet complies with the requirements of Regulation(EC) No. 1907/2006.

**15.1 Safety health and environment regulations/legislation specific for the substance or mixture**

No data available

**15.2 Chemical Safety Assessment**

No data available

**16 Other information**

Text of H codes and classification mentioned in section 3

H272	May intensify fire; oxidizer
H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects
Acute Tox.oral 4	Acute toxicity, oral, Category 4
Aquatic Chronic 1	Hazardous to the aquatic environment, long term hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, long term hazard, Category 2
Eye Dam. 1	Serious eye damage or eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage or eye irritation, Category 2A
Ox. Sol. 3	Oxidising solids, Category 3
Skin Irrit. 2	Skin corrosion or irritation, Category 2
STOT RE 2	Specific target organ toxicity, repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity, single exposure, Respiratory tract irritation, Category 3

**Further Information**

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