

1 Identification

- **Product identifier**
- **Trade name:** YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride
- **Article number:** 4027112
- **Application of the substance / the mixture** For Research Use Only
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
United States
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Repr. 1B H360 May damage fertility or the unborn child.



GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
p-Aminobenzoic Acid
Zinc Sulfate
Boric Acid
Calcium Chloride Dihydrate
- **Hazard statements**
Harmful if swallowed.
Causes skin irritation.

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 1)

Causes serious eye damage.

May damage fertility or the unborn child.

· **Precautionary statements**

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

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention.

Rinse mouth.

IF ON SKIN: Wash with plenty of water.

Take off contaminated clothing and wash it before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 1

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *3

Fire = 1

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture: consisting of the following components.

· **Dangerous components:**

CAS: 150-13-0 EINECS: 205-753-0 RTECS: DG1400000	p-Aminobenzoic Acid	2.5-<10%
CAS: 10043-35-3 EINECS: 233-139-2 RTECS: ED4550000	Boric Acid	5.5-<10%

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 2)

CAS: 7446-20-0 EINECS: 231-793-3 RTECS: ZH5300000	Zinc Sulfate	2.5-<10%
CAS: 10034-96-5 EINECS: 232-089-9 RTECS: OP0893500	Manganese Sulfate Monohydrate	2.5-<10%
CAS: 10035-04-8 EINECS: 233-140-8 RTECS: EV9810000	Calcium Chloride Dihydrate	2.5-<10%
CAS: 7681-11-0 EINECS: 231-659-4 RTECS: TT2975000	Potassium Iodide	1-2.5%
CAS: 59-67-6 EINECS: 200-441-0 RTECS: QT0525000	nicotinic acid	1-2.5%

· Non-Hazardous Ingredients

CAS: 7758-11-4 EINECS: 231-834-5	Potassium Phosphate Dibasic Anhydrous, ACS Grade	10-50%
CAS: 7487-88-9 EINECS: 231-298-2 RTECS: OM4500000	magnesium sulphate	10-50%
CAS: 87-89-8 EINECS: 201-781-2 RTECS: NM7520800	D-myo-Inositol, cell culture reagent	2.5-<10%

4 First-aid measures

· Description of first aid measures

- **After inhalation:** If breathed in, supply fresh air. If not breathing, give artificial respiration. Consult a Doctor.
- **After skin contact:** Wash off with soap and plenty of water. Consult a Doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Never give anything by mouth to an unconscious person. Rinse mouth with water. If symptoms persist consult a Doctor.

· Information for doctor:

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· Extinguishing media

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

US

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 3)

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **Methods and material for containment and cleaning up:**

Use neutralizing agent.

Pick up mechanically, dispose contaminated material as waste according to Section 13.

· **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.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

7758-11-4	Potassium Phosphate Dibasic Anhydrous, ACS Grade	13 mg/m ³
7487-88-9	magnesium sulphate	20 mg/m ³
150-13-0	p-Aminobenzoic Acid	15 mg/m ³
10043-35-3	Boric Acid	6 mg/m ³
7446-20-0	Zinc Sulfate	27 mg/m ³
10034-96-5	Manganese Sulfate Monohydrate	9.2 mg/m ³
7631-95-0	Sodium Molybdate	3.2 mg/m ³
10035-04-8	Calcium Chloride Dihydrate	16 mg/m ³
7681-11-0	Potassium Iodide	1.3 mg/m ³

· **PAC-2:**

7758-11-4	Potassium Phosphate Dibasic Anhydrous, ACS Grade	140 mg/m ³
7487-88-9	magnesium sulphate	220 mg/m ³
150-13-0	p-Aminobenzoic Acid	69 mg/m ³
10043-35-3	Boric Acid	23 mg/m ³
7446-20-0	Zinc Sulfate	170 mg/m ³
10034-96-5	Manganese Sulfate Monohydrate	15 mg/m ³
7631-95-0	Sodium Molybdate	17 mg/m ³
10035-04-8	Calcium Chloride Dihydrate	170 mg/m ³
7681-11-0	Potassium Iodide	15 mg/m ³

· **PAC-3:**

7758-11-4	Potassium Phosphate Dibasic Anhydrous, ACS Grade	830 mg/m ³
7487-88-9	magnesium sulphate	1,300 mg/m ³
150-13-0	p-Aminobenzoic Acid	410 mg/m ³
10043-35-3	Boric Acid	830 mg/m ³
7446-20-0	Zinc Sulfate	1,000 mg/m ³
10034-96-5	Manganese Sulfate Monohydrate	90 mg/m ³
7631-95-0	Sodium Molybdate	100 mg/m ³
10035-04-8	Calcium Chloride Dihydrate	1,100 mg/m ³
7681-11-0	Potassium Iodide	87 mg/m ³

US

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 4)

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Thorough dedusting.
- **Information about protection against explosions and fires:** No special requirements.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 15-30 °C
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Further information about storage conditions:**
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see Section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

150-13-0 p-Aminobenzoic Acid	
WEEL	Long-term value: 5 mg/m ³
10043-35-3 Boric Acid	
TLV	Short-term value: 6* mg/m ³ Long-term value: 2* mg/m ³ *as inhalable fraction
10034-96-5 Manganese Sulfate Monohydrate	
PEL	Ceiling limit value: 5 mg/m ³ as Mn
REL	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³ as Mn
TLV	Long-term value: 0.02* 0.1* mg/m ³ as Mn; *respirable **inhalable fraction
7681-11-0 Potassium Iodide	
TLV	Long-term value: 0.01* ppm *as inhalable fraction and vapor

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
- **Breathing equipment:** Not required.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 5)

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant 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

· 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 can not 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.

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Powder
Color:	Indeterminate
Odor:	Indeterminate
Odor threshold:	Not determined.

· pH-value: Not applicable.

· Change in condition

Boiling point/Boiling range: Undetermined.

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not determined.

· Ignition temperature:

Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: See section 10

· Explosion limits:

Lower:	Not Applicable
Upper:	Not Applicable

· Vapor pressure: Not applicable.

· Density: Not Applicable

· Relative density: Not determined.

(Contd. on page 7)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 6)

- | | |
|--|--|
| · Vapor density | Not applicable. |
| · Evaporation rate | Not applicable. |
| · Solubility in / Miscibility with Water: | Not Determined
Insoluble. |
| · Partition coefficient (n-octanol/water): Not determined. | |
| · Viscosity: | |
| Dynamic: | Not applicable. |
| Kinematic: | Not applicable. |
| · Solvent content: | |
| Organic solvents: | 0.0 % |
| VOC content: | 0.0 g/l / 0.00 lb/gl |
| · Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

· LD/LC50 values that are relevant for classification:

10043-35-3 Boric Acid

Oral	LD50	3450 mg/kg (mouse)
		2660 mg/kg (rat)

7446-20-0 Zinc Sulfate

Oral	LD50	200 mg/kg (mouse)
		1260 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)

150-13-0	p-Aminobenzoic Acid	3
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(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 7)

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**· **Aquatic toxicity:****10043-35-3 Boric Acid**Oral LC50 / 96 h 1021 mg/L (*Lepomis macrochirus*)· **Persistence and degradability** No further relevant information available.· **Behavior in environmental systems:**· **Bioaccumulative potential** No further relevant information available.· **Mobility in soil** No further relevant information available.· **Additional ecological information:**· **General notes:**

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even extremely small quantities leak into the ground.

· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**· **Recommendation:**

Can not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**· **Recommendation:** Discard must be made according to official regulations.

14 Transport information

· **UN-Number**· **DOT, ADR, IMDG, IATA**

UN3077

· **UN proper shipping name**· **DOT**

Environmentally hazardous substances, solid, n.o.s. (Zinc Sulfate, Manganese Sulfate Monohydrate)

· **ADR**

3077 Environmentally hazardous substances, solid, n.o.s. (Zinc Sulfate, Manganese Sulfate Monohydrate)

· **IMDG**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Sulfate, Manganese Sulfate Monohydrate), MARINE POLLUTANT

(Contd. on page 9)

Safety Data Sheet


acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 8)

· IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Sulfate, Manganese Sulfate Monohydrate)
· Transport hazard class(es) · DOT, ADR, IMDG, IATA	
	
· Class · Label	9 Miscellaneous dangerous substances and articles 9
· Packing group · DOT, ADR, IMDG, IATA	III
· Environmental hazards: · Marine pollutant: · Special marking (ADR): · Special marking (IATA):	Product contains environmentally hazardous substances: Zinc Sulfate Yes (DOT) Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree)
· Special precautions for user · Danger code (Kemler): · EMS Number: · Stowage Category · Stowage Code	Warning: Miscellaneous dangerous substances and articles 90 F-A,S-F A SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Quantity limitations · Remarks:	On passenger aircraft/rail: No limit On cargo aircraft only: No limit Special marking with the symbol (fish and tree).
· ADR · Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· UN "Model Regulation":	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (ZINC SULFATE, MANGANESE SULFATE MONOHYDRATE), 9, III

US

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 9)

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

10034-96-5 Manganese Sulfate Monohydrate

· **TSCA (Toxic Substances Control Act):**

7758-11-4 Potassium Phosphate Dibasic Anhydrous, ACS Grade

7487-88-9 magnesium sulphate

87-89-8 D-myo-Inositol, cell culture reagent

150-13-0 p-Aminobenzoic Acid

10043-35-3 Boric Acid

7647-14-5 Sodium Chloride

7681-11-0 Potassium Iodide

67-03-8 Thiamine Hydrochloride

59-67-6 nicotinic acid

58-56-0 Pyridoxine Hydrochloride

137-08-6 D-Pantothenic Acid Calcium Salt

83-88-5 riboflavin

59-30-3 Folic Acid

58-85-5 D-Biotin

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

10043-35-3 Boric Acid

I (oral)

10034-96-5 Manganese Sulfate Monohydrate

D

· **TLV (Threshold Limit Value established by ACGIH)**

10043-35-3 Boric Acid

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 10)

· Hazard pictograms



· Signal word Danger

· Hazard-determining components of labeling:

p-Aminobenzoic Acid
Zinc Sulfate
Boric Acid
Calcium Chloride Dihydrate

· Hazard statements

Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
May damage fertility or the unborn child.

· Precautionary statements

Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Specific treatment (see on this label).
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
If skin irritation occurs: Get medical advice/attention.
Rinse mouth.
IF ON SKIN: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Quality Control Dept.

· Date of preparation / last revision 04/13/2017 / -

· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)

(Contd. on page 12)

Safety Data Sheet
acc. to OSHA HCS

Printing date 04/13/2017

Reviewed on 04/13/2017

Trade name: YNB w/o Ammonium Sulfate, Copper Sulfate, Ferric Chloride

(Contd. of page 11)

HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Repr. 1B: Reproductive toxicity – Category 1B

US