

## Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

### 1 Identification

- **Product identifier**
- **Trade name:** YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)
- **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

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



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
 Zinc Sulfate heptahydrate  
 Boric Acid
- **Hazard statements**  
 Causes skin irritation.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

(Contd. of page 1)

*Causes serious eye damage.*

*May damage fertility or the unborn child.*

**· Precautionary statements**

*Obtain special instructions before use.*

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

*Wash thoroughly after handling.*

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

*If on skin: Wash with plenty of water.*

*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.*

*IF exposed or concerned: Get medical advice/attention.*

*Specific treatment (see on this label).*

*Take off contaminated clothing and wash it before reuse.*

*If skin irritation occurs: Get medical advice/attention.*

*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%
CAS: 7446-20-0 EINECS: 231-793-3 RTECS: ZH5300000	Zinc Sulfate heptahydrate	≥3-≤10%
CAS: 10034-96-5 RTECS: OP0893500	Manganese Sulfate Monohydrate	≥2.5-<10%

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

		(Contd. of page 2)
CAS: 7631-95-0 EINECS: 231-551-7	Sodium Molybdate	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%

## 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Consult your Doctor. Show the safety data sheet to the Doctor. Away from the dangerous area.
- **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:** If symptoms persist consult 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.

## 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	13 mg/m <sup>3</sup>
-----------	---------------------------------------	----------------------

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

(Contd. of page 3)

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

**· PAC-2:**

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

**· PAC-3:**

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

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Thorough dedusting.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **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.

US

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

(Contd. of page 4)

## 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.

<b>150-13-0 p-Aminobenzoic Acid</b>	
WEEL	Long-term value: 5 mg/m <sup>3</sup>
<b>10043-35-3 Boric Acid</b>	
TLV	Short-term value: 6* mg/m <sup>3</sup> Long-term value: 2* mg/m <sup>3</sup> *as inhalable fraction
<b>10034-96-5 Manganese Sulfate Monohydrate</b>	
PEL	Ceiling limit value: 5 mg/m <sup>3</sup> as Mn
REL	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup> as Mn
TLV	Long-term value: 0.02* 0.1** mg/m <sup>3</sup> as Mn; *respirable **inhalable fraction
<b>7631-95-0 Sodium Molybdate</b>	
PEL	Long-term value: 5 mg/m <sup>3</sup> as Mo
TLV	Long-term value: 0.5 mg/m <sup>3</sup> as Mo; respirable fraction
<b>7681-11-0 Potassium Iodide</b>	
TLV	Long-term value: NIC-0.015** mg/m <sup>3</sup> , (0.01*) ppm NIC-Skin; *inhalable fraction & vapor **inhal.;

· **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.

Store protective clothing separately.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

· **Breathing equipment:** Not required.

· **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.

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

(Contd. of page 5)

*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:**

<b>Form:</b>	Powder
<b>Color:</b>	Indeterminate
<b>Odor:</b>	Indeterminate
<b>Odor threshold:</b>	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

**Boiling point/Boiling range:** Undetermined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** See section 10

· **Explosion limits:**

<b>Lower:</b>	Not Applicable
<b>Upper:</b>	Not Applicable

· **Vapor pressure:** Not applicable.

· **Density:** Not Applicable

· **Relative density** Not determined.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with** Not Determined

· **Water:** Not determined.  
Insoluble.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

**Dynamic:** Not applicable.

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

(Contd. of page 6)

<b>Kinematic:</b>	Not applicable.
<b>Solvent content:</b>	
<b>VOC content:</b>	0.00 %
<b>Solids content:</b>	100.0 %
<b>Other information</b>	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.  
Avoid contact with acids. Contact liberates a toxic gas.
- **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:

##### ATE (Acute Toxicity Estimate)

Oral	LD50	2,096 mg/kg
Dermal	LD50	106,660 mg/kg (rat)
Inhalative	LC50/4 h	14,948 mg/L (rabbit)

##### 7446-20-0 Zinc Sulfate heptahydrate

Oral	LD50	200 mg/kg (mouse)
		1,260 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:  
Irritant

#### · Carcinogenic categories

#### · IARC (International Agency for Research on Cancer)

150-13-0	p-Aminobenzoic Acid	3
----------	---------------------	---

#### · NTP (National Toxicology Program)

None of the ingredients is listed.

(Contd. on page 8)

US

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

(Contd. of page 7)

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

None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **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

- |                                  |   |
|----------------------------------|---|
| · <b>UN-Number</b>               | UN3077  |
| · <b>DOT, ADR, IMDG, IATA</b>    |   |
| · <b>UN proper shipping name</b> | Environmentally hazardous substance, solid, n.o.s. (Zinc Sulfate heptahydrate, Manganese Sulfate Monohydrate)                   |
| · <b>DOT</b>                     |   |
| · <b>ADR</b>                     | 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Sulfate heptahydrate, Manganese Sulfate Monohydrate)              |
| · <b>IMDG</b>                    | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Sulfate heptahydrate, Manganese Sulfate Monohydrate), MARINE POLLUTANT |
| · <b>IATA</b>                    | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Sulfate heptahydrate, Manganese Sulfate Monohydrate)                   |

(Contd. on page 9)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

(Contd. of page 8)

· **Transport hazard class(es)**

· **DOT, ADR, IMDG, IATA**



· **Class**

9 Miscellaneous dangerous substances and articles

· **Label**

9

· **Packing group**

· **DOT, ADR, IMDG, IATA**

III

· **Environmental hazards:**

Product contains environmentally hazardous substances: Zinc Sulfate heptahydrate

· **Marine pollutant:**

Yes (DOT)

Symbol (fish and tree)

· **Special marking (ADR):**

Symbol (fish and tree)

· **Special marking (IATA):**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Miscellaneous dangerous substances and articles

· **Danger code (Kemler):**

90

· **EMS Number:**

F-A,S-F

· **Stowage Category**

A

· **Stowage Code**

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**

On passenger aircraft/rail: No limit

On cargo aircraft only: No limit

· **Remarks:**

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)**

5 kg

· **Excepted quantities (EQ)**

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 SUBSTANCE, SOLID, N.O.S. (ZINC SULFATE HEPTAHYDRATE, MANGANESE SULFATE MONOHYDRATE), 9, III

US

(Contd. on page 10)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

(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	ACTIVE
7487-88-9	magnesium sulphate	ACTIVE
87-89-8	D-myo-Inositol	ACTIVE
150-13-0	p-Aminobenzoic Acid	ACTIVE
10043-35-3	Boric Acid	ACTIVE
7631-95-0	Sodium Molybdate	ACTIVE
7647-14-5	Sodium Chloride	ACTIVE
7681-11-0	Potassium Iodide	ACTIVE
58-56-0	Pyridoxine Hydrochloride	ACTIVE
59-67-6	nicotinic acid	ACTIVE
67-03-8	Thiamine Hydrochloride	ACTIVE
137-08-6	D-Pantothenic Acid Calcium Salt	ACTIVE
83-88-5	riboflavin	ACTIVE
58-85-5	D-Biotin	ACTIVE
59-30-3	Folic Acid	ACTIVE

· **Hazardous Air Pollutants**

10034-96-5	Manganese Sulfate Monohydrate
------------	-------------------------------

· **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.

(Contd. on page 11)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 02/07/2020

Reviewed on 02/07/2020

**Trade name: YNB w/o Ammonium Sulfate w/o Copper Sulfate w/o Ferric Chloride (Powder)**

(Contd. of page 10)

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

· **Hazard pictograms**



GHS05    GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

Zinc Sulfate heptahydrate

Boric Acid

· **Hazard statements**

Causes skin irritation.

Causes serious eye damage.

May damage fertility or the unborn child.

· **Precautionary statements**

Obtain special instructions before use.

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

Wash thoroughly after handling.

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

If on skin: Wash with plenty of water.

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.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Take off contaminated clothing and wash it before reuse.

If skin irritation occurs: Get medical advice/attention.

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** 02/07/2020 / -

· **Abbreviations and acronyms:**

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Repr. 1B: Reproductive toxicity – Category 1B