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## SECTION 1: COMPANY AND PRODUCT INFORMATION

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### 1.1 Product identifiers

Product name : Manganese Sulfate Monohydrate  
Product code : 41300052  
CAS number : 10034-96-5  
Synonyms : Manganese(II) sulfate monohydrate

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : For research and laboratory use only.

### 1.3 Details of the supplier of the safety data sheet

Address : Genelinx International Inc, dba bioWORLD  
4150 Tuller Rd. Suite 228  
Dublin, OH 43017

Email : info@buffersandreagents.com

Phone : 614-792-8680, Toll free: 1-888-bio-PLUS

Fax : 614-792-8685

### 1.4 Emergency telephone number

Emergency phone : 1-888-bio-PLUS

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## SECTION 2: HAZARDS IDENTIFICATION

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### 2.1 Classification of substance or mixture

Specific target organ toxicity - repeated exposure (Category 2), H373

Acute aquatic toxicity (Category 2), H401

Chronic aquatic toxicity (Category 2), H411

### 2.2 GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Specific target organ toxicity - repeated exposure (Category 2), H373

Acute aquatic toxicity (Category 2), H401

Chronic aquatic toxicity (Category 2), H411

### 2.3 Label elements and precautionary statements

Pictogram :  

Signal word : Warning

Hazard statement(s) : H373 - May cause damage to organs through prolonged or repeated exposure.  
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statement(s) : P260 - Do not breathe dust/fume/gas/mist/vapors/spray.  
P273 - Avoid release to the environment.  
P314 - Get medical advice/attention if you feel unwell.  
P391 - Collect spillage.  
P501 - Dispose of contents/container to an approved waste disposal plant.

## 2.4 Hazards not otherwise classified (HNOC) or not covered by GHS

No unclassified hazards known.

## 2.5 NFPA Rating

Health hazard : 0

Fire hazard : 0

Reactivity hazard : 0

## 2.6 HMIS Rating

Health hazard : 0

Chronic health hazard : \*

Reactivity hazard : 0

Flammability : 0

Physical hazard : 0

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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### 3.1 Substances

Substance	CAS#	EC#	Concentration
Manganese Sulfate Monohydrate M.F: $MnO_4S \cdot H_2O$ M.W: 169.02 g/mol	10034-96-5	232-089-9	<= 100%

### 3.2 Hazardous components & classification

STOT RE 2; Aquatic Acute 2; Aquatic Chronic 2; H373, H411.

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## SECTION 4: FIRST AID MEASURES

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### 4.1 Description of first aid measures

#### General advice

Consult a physician if symptoms are severe or persistent. Provide this data sheet to medical personnel. If product is spilled or leaked, evacuate area.

#### In case of inhalation

If inhaled, move person to fresh air and monitor breathing. If not breathing, give artificial ventilation. Consult a physician if symptoms are severe or persistent.

#### In case of skin contact

Immediately wash with excess soap and water. If spilled on clothing, remove all affected clothing. Consult a physician if symptoms are severe or persistent.

#### In case of eye contact

Flush eyes with water or eye wash solution as a precaution for 15 minutes. Consult a physician if symptoms are severe or persistent.

#### In case of ingestion

Only induce vomiting if recommended by medical personnel. If subject is unconscious, do not give anything by mouth. If conscious, rinse mouth with water. Consult a physician if symptoms are severe or persistent.

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

All known important symptoms are described in Section 2 and/or Section 11. No other important symptoms to report.

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

No special treatment indicated. Provide treatment in accordance with exhibited systems.

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### **SECTION 5: FIREFIGHTING MEASURES**

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#### **5.1 Suitable extinguishing media**

Water spray, alcohol-resistant foam, dry chemical, and carbon dioxide extinguishers are suitable.

#### **5.2 Unsuitable extinguishing media**

No known unsuitable extinguishing media.

#### **5.3 Special hazards arising from the substance**

No special hazards are known to exist regarding combustion of this product.

#### **5.4 Advice for firefighters**

Wear protective gear, such as self-contained breathing apparatus, if necessary.

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### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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

Provide suitable ventilation. Use any necessary personal protective equipment. Avoid contact with skin and eyes, and avoid creation and inhalation of vapor or dust. Keep all unnecessary personnel away.

**For personal protection see section 8**

#### **6.2 Environmental precautions**

Prevent product from entering public sewers and waterways.

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

Use inert absorbent material to absorb any spilled or leaked product. Keep in suitable, closed containers for disposal.

**For proper disposal see section 13**

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### **SECTION 7: HANDLING AND STORAGE**

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#### **7.1 Precautions for safe handling**

Provide suitable ventilation. Wear any necessary personal protective equipment.

**For precautions see section 2**

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

Storage conditions : Store upright, closed container in arid, ventilated environment.  
Hygroscopic.  
Storage class (TRGS 510): Non Combustible Solids.

Incompatible materials : Strong oxidizing agents are incompatible with this product.

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 8.1 Control parameters

Manganese Sulfate Monohydrate; CAS No.: 10034-96-5

C: 5 mg/m<sup>3</sup>. Basis: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants. Remarks: Ceiling limit is to be determined from breathing-zone air samples.  
TWA: 0.200000 mg/m<sup>3</sup>. Basis: USA. ACGIH Threshold Limit Values (TLV). Central Nervous System impairment, adopted values or notations enclosed are those for which changes are proposed in the NIC, see Notice of Intended Changes (NIC), varies.  
TWA: 1 mg/m<sup>3</sup>. Basis: USA. NIOSH Recommended Exposure Limits.  
ST: 3 mg/m<sup>3</sup>. Basis: USA. NIOSH Recommended Exposure Limits.  
TWA: 0.100000 mg/m<sup>3</sup>. Basis: USA. ACGIH Threshold Limit Values (TLV). Remarks: Central Nervous System impairment, 2015 Adoption, varies.  
TWA: 0.02 mg/m<sup>3</sup>. Basis: USA. ACGIH Threshold Limit Values (TLV). Remarks: Central Nervous System impairment, 2015 Adoption, varies.  
TWA: 0.1 mg/m<sup>3</sup>. Basis: USA. ACGIH Threshold Limit Values (TLV). Remarks: Central Nervous System impairment, not classifiable as a human carcinogen, varies.  
TWA: 0.02 mg/m<sup>3</sup>. Basis: USA. ACGIH Threshold Limit Values (TLV). Remarks: Central Nervous System impairment, not classifiable as a human carcinogen, varies.  
PEL: 0.2 mg/m<sup>3</sup>. Basis: California permissible exposure limits for chemical contaminants (Title 8, Article 107).

### 8.2 Engineering controls

Follow good industrial hygiene and safety practices when handling product.

### 8.3 Personal protective equipment

- Eye/face protection : Use only government-approved safety glasses with side-shields.
- Skin protection : Use gloves when handling product. Inspect gloves before use to ensure suitability for use. Remove without exposing skin to the gloves outer surface. Discard used gloves according to all pertinent laws and/or current good practices (cGXP). Wash hands with soap and water.
- Body protection : Wear appropriate clothing. Ensure clothing is in good condition, with no holes or tears. When selecting clothing, consider the concentration and amount of substance to be handled.
- Respiratory protection : Use only approved respirators and components which comply with CDC and NIOSH (US) or CEN (EU) regulations. Required only when vapors or aerosols are created.
- Control of environmental exposure : Prevent product from entering the environment, especially through public sewers or waterways.
- General hygiene considerations : Comply with general industrial hygiene practice guidelines.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 Information on basic physical and chemical properties

a)	Appearance	: Light Red
b)	Physical states	: Solid
c)	Odor	: Not available
d)	Odor threshold	: Not available
e)	Melting point	: 700°C
f)	Boiling point range	: Not available
g)	pH	: 3.0-3.5 at 50 g/l @ 20°C
h)	Density	: Not available
i)	Flash point	: Not available
j)	Evaporation rate	: Not available
k)	Flammability	: Not available
l)	Upper/lower flammability or explosive limits:	: Not available
m)	Vapor pressure	: Not available
n)	Vapor density	: Not available
o)	Relative density	: Not available
p)	Water solubility	: Not available
q)	Partition coefficient:n-octanol/water	: Not available
r)	Autoignition temperature	: Not available
s)	Decomposition temperature	: Not available
t)	Kinematic viscosity	: Not available
u)	Explosive properties	: Not available
v)	Oxidizing properties	: Not available
w)	Solubility in other solvents	: Not available
x)	Surface tension	: Not available

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## SECTION 10: STABILITY AND REACTIVITY

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### 10.1 Reactivity

No special reactivity is known.

### 10.2 Chemical stability

Product is stable when stored and used as recommended.

### 10.3 Stability note(s)

Avoid exposing the product to moisture.

### 10.4 Polymerization

No known polymerization.

### 10.5 Possibility of hazardous reactions

No hazardous reactions are known.

### 10.6 Incompatible materials

Strong oxidizing agents are incompatible with this product.

### 10.7 Hazardous decomposition products

Sulfur oxides and manganese oxides can form if fire occurs.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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### 11.1 Acute toxicity

LD50 Oral : No toxicity data available.

LD50 Dermal : No toxicity data available.

LC50 Inhalation : No toxicity data available.

### 11.2 Skin corrosion/irritation

No skin/corrosion irritation data available.

### 11.3 Serious eye damage/eye irritation

No eye damage/irritation data available.

### 11.4 Respiratory or skin sensitization

No sensitization data available.

### 11.5 Germ cell mutagenicity

No mutagenicity data available.

### 11.6 Carcinogenicity

IARC : Product and components are not regulated by the IARC.

ACGIH : Product and components are not regulated by the ACGIH.

NTP : Product and components are not regulated by the NTP.

OSHA : Product and components are not regulated by OSHA.

### 11.7 Reproductive toxicity

Can cause spermatogenesis (Male mouse).

### 11.8 Specific target organ toxicity – single exposure

No specific organ toxicity data available.

### 11.9 Specific target organ toxicity – repeated exposure

May cause damage to organs through prolonged or repeated exposure.

### 11.10 Aspiration hazard

No aspiration hazard data available.

### 11.11 Additional Information

RTECS: OP0893500.

Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds. Prolonged or repeated inhalation may cause pneumonia.

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## SECTION 12: ECOLOGICAL INFORMATION

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### 12.1 Toxicity

No ecological toxicity data available.

## 12.2 Aquatic toxicity

No aquatic toxicity data available.

## 12.3 Persistence and degradability

No persistence/degradability data available.

## 12.4 Bioaccumulative potential

No bioaccumulation data available.

## 12.5 Mobility in soil

No soil mobility data available.

## 12.6 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment is not required/was not conducted.

## 12.7 Other adverse effect

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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### 13.1 Product

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult and adhere to local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 13.2 Packaging

Packaging should be disposed of in the same manner as unused product.

### 13.3 Recommendation

Disposal must be made according to official regulations.

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## SECTION 14: TRANSPORTATION INFORMATION

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### 14.1 DOT (US)

Not a dangerous good under DOT(US) regulations.

### 14.2 IMDG

UN#3077

Class: 9

Packing Group: III

EMS-No.: F-A, S-F

Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Manganese Sulfate Monohydrate).

Marine pollutant: Yes.

### 14.3 IATA

UN#3077

Class: 9

Packing Group: III

Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Manganese Sulfate Monohydrate).

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5 L for liquids or > 5 kg for solids.

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## SECTION 15: REGULATORY INFORMATION

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### 15.1 SARA

SARA 302: This product and components are not subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This product contains components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313:

Manganese Sulfate Monohydrate CAS No.: 10034-96-5.

SARA 311/312: Chronic Health Hazard

### 15.2 Clean water act (CWA)

No chemicals are present in this product that are subject to regulation under the Clean Water Act.

### 15.3 Right to know components

Massachusetts : No chemicals are present which require disclosure under the Massachusetts Right to Know Act.

Pennsylvania : Manganese Sulfate Monohydrate CAS No.: 10034-96-5.

New Jersey : Manganese Sulfate Monohydrate CAS No.: 10034-96-5.

California : This product contains no chemicals which are known to the State of  
proposition 65 California to cause cancer, or birth defects or other reproductive harm.  
components

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## SECTION 16: OTHER INFORMATION

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### 16.1 Disclaimer

This product is offered by Plantmedia for research, laboratory or further manufacturing use. Not for human use or consumption. The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchant-ability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall buffersandreagents.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if buffersandreagents.com has been advised of the possibility of such damages.

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### 16.2 Preparation Information

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