

## 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Murashige & Skoog Basal Medium
- **Article number:** 26231
- **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:** Product safety department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 2 Hazards identification

- **Classification of the substance or mixture**



GHS03 Flame over circle

*Ox. Sol. 1 H271 May cause fire or explosion; strong oxidizer.*



GHS08 Health hazard

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

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Oxidizing

*Contact with combustible material may cause fire. Explosive when mixed with combustible material.*

- **Information concerning particular hazards for human and environment:**

*The product has to be labelled due to the calculation procedure of international guidelines.*

- **Classification system:**

*The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.*

- **Label elements**

- **Labelling according to EU guidelines:**

*The product has been classified and marked in accordance with directives on hazardous materials.*

- **Code letter and hazard designation of product:**



Oxidizing

- **Risk phrases:**

*Contact with combustible material may cause fire.  
Explosive when mixed with combustible material.*

- **Safety phrases:**

*Keep out of the reach of children.  
Keep away from heat.*

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/27/2013

Reviewed on 03/27/2013

**Trade name: Murashige & Skoog Basal Medium**

(Contd. of page 1)

If swallowed, seek medical advice immediately and show this container or label.  
Dispose of this material and its container to hazardous or special waste collection point.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 3

Reactivity = 0

The substance possesses oxidizing properties.

· **HMIS-ratings (scale 0 - 4)**



Health = 0

Fire = 3

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 of the substances listed below with nonhazardous additions.

· **Dangerous components:**

7757-79-1	potassium nitrate ⚠ Ox. Sol. 2, H272	42.852%
6484-52-2	ammonium nitrate ⚠ Ox. Sol. 1, H271	37.213%
10043-52-4	calcium chloride ⚠ Eye Irrit. 2, H319	7.492%
7778-77-0	potassium dihydrogenorthophosphate ⚠ Acute Tox. 4, H302	3.834%
7446-20-0	zinc sulfate heptahydrate ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; ⚠ Skin Irrit. 2, H315; STOT SE 3, H335	0.194%
10043-35-3	boric acid ⚠ Repr. 1B, H360	0.14%

· **SVHC**

10043-35-3	boric acid
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## 4 First aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

(Contd. on page 3)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/27/2013

Reviewed on 03/27/2013

**Trade name: Murashige & Skoog Basal Medium**

(Contd. of page 2)

- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Mount respiratory protective device.  
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:** Pick up mechanically.
- **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

- **Handling:**
- **Precautions for safe handling** Prevent formation of dust.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 2-8 °C
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Protect from heat and direct sunlight.  
Protect from humidity and water.
- **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 item 7.

(Contd. on page 4)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/27/2013

Reviewed on 03/27/2013

**Trade name: Murashige & Skoog Basal Medium**

(Contd. of page 3)

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

**10043-35-3 boric acid**

TLV	Short-term value: 6* mg/m <sup>3</sup> Long-term value: 2* mg/m <sup>3</sup> *as inhalable fraction
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· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **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:** Not required.

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

<b>Form:</b>	Solid
<b>Color:</b>	According to product specification

· <b>Odor:</b>	Characteristic
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· <b>Odour threshold:</b>	Not determined.
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· <b>pH-value:</b>	Not applicable.
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· **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
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<b>Boiling point/Boiling range:</b>	Undetermined.
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· <b>Flash point:</b>	Not applicable.
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· <b>Flammability (solid, gaseous):</b>	Contact with combustible material may cause fire.
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(Contd. on page 5)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/27/2013

Reviewed on 03/27/2013

Trade name: Murashige &amp; Skoog Basal Medium

(Contd. of page 4)

· <b>Ignition temperature:</b>	
· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Explosive when mixed with combustible material.
· <b>Explosion limits:</b>	
· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.
· <b>Vapor pressure:</b>	Not applicable.
· <b>Density:</b>	Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with Water:</b>	Soluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
· <b>Dynamic:</b>	Not applicable.
· <b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
· <b>Organic solvents:</b>	0.0 %
· <b>Solids content:</b>	100.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **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:**

7446-20-0 zinc sulfate heptahydrate

Oral	LD50	1260 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

(Contd. on page 6)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/27/2013

Reviewed on 03/27/2013

**Trade name: Murashige & Skoog Basal Medium**

(Contd. of page 5)

· **Additional toxicological information:**

· **Carcinogenic categories**

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

Cobalt Chloride Hexahydrate

Group 2B possibly carcinogenic to humans

· **NTP (National Toxicology Program)**

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 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **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:**

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

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA**

UN1479

· **UN proper shipping name**

· **DOT, IMDG, IATA**

OXIDIZING SOLID, N.O.S.

· **ADR**

1479 OXIDIZING SOLID, N.O.S.

· **Transport hazard class(es)**

· **DOT**



· **Class**

5.1 Oxidising substances.

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/27/2013

Reviewed on 03/27/2013

Trade name: Murashige &amp; Skoog Basal Medium

(Contd. of page 6)

· **Label** 5.1· **ADR**· **Class** 5.1 Oxidizing substances· **Label** 5.1· **IMDG, IATA**· **Class** 5.1 Oxidising substances.· **Label** 5.1· **Packing group**· **DOT, ADR, IMDG, IATA** III· **Environmental hazards:**· **Marine pollutant:** No· **Special precautions for user** Warning: Oxidizing substances· **Danger code (Kemler):** 50· **EMS Number:** F-A,S-Q· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.· **UN "Model Regulation":** UN1479, OXIDIZING SOLID, N.O.S., 5.1, III

## 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):**

6484-52-2 ammonium nitrate

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

7757-79-1 potassium nitrate

6484-52-2 ammonium nitrate

10043-52-4 calcium chloride

7778-77-0 potassium dihydrogenorthophosphate

87-89-8 myo-inositol

10043-35-3 boric acid

Glycine

7681-11-0 potassium iodide

59-67-6 nicotinic acid

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 03/27/2013

Reviewed on 03/27/2013

**Trade name: Murashige & Skoog Basal Medium**

(Contd. of page 7)

58-56-0	pyridoxine hydrochloride
59-43-8	thiamine

· **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)**

10034-96-5 Mangan(II)-sulfat-Monohydrat

D

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

10043-35-3 boric acid

A4

Cobalt Chloride Hexahydrate

0.02; confirmed animal carcinogen

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**



Oxidizing

· **Risk phrases:**

Contact with combustible material may cause fire.

Explosive when mixed with combustible material.

· **Safety phrases:**

Keep out of the reach of children.

Keep away from heat.

If swallowed, seek medical advice immediately and show this container or label.

Dispose of this material and its container to hazardous or special waste collection point.

· **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 MSDS:** Product safety department

(Contd. on page 9)

USA



**Safety Data Sheet**  
*acc. to OSHA HCS*

Printing date 03/27/2013

Reviewed on 03/27/2013

**Trade name: Murashige & Skoog Basal Medium**

(Contd. of page 8)

**· 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*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

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