1 Identification of the substances/ mixture and of the company/ undertaking

1.1 Product Identifiers

Product Number  PT018
Product Name    Murashige & Skoog Medium
                w/ Vitamins;
                w/o CaCl₂, Sucrose, IAA, Kinetin & Agar
REACH Registration Number Reach registration number is not available for this mixture. According
to REACH regulation EC 1907/2006 this product is exempted from
registration. The annual tonnage does not require a REACH registration
or it is envisaged for a later registration deadline.

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

1.2.1 Relevant identified uses Laboratory chemicals, Manufacture of substances

1.2.2 Uses advised against No data available

1.3 Details of the supplier of the safety data sheet

Produced by    HiMedia Laboratories Private Limited
Address        23, Vadhani Industrial Estate, LBS Marg, Ghatkopar (W), Mumbai - 400 086
                India
Tel. No.       +91-22-2500 0970, +91-22-2500 1607
Mail Id        ptc@himedialabs.com
Fax No.        Website : www.himedialabs.com

1.4 Emergency Tel. No.

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]

Oxidising solids, (Category 3), H272
Acute toxicity, Oral, (Category 4), H302
Skin corrosion or irritation, (Category 2), H315
Serious eye damage or eye irritation, (Category 2A), H319
Specific target organ toxicity, single exposure, Respiratory tract irritation, (Category 3), H335
Hazardous to the aquatic environment, long term hazard, (Category 2), H411
For the full text of the H-Statements mentioned in this Section, See Section 16

2.2 Label elements

Labeling according to Regulation (EC) No.1272/2008

Pictogram
Signal word     Warning
Hazard Statement(s)
H272  May intensify fire; oxidizer
H302  Harmful if swallowed
H315  Causes skin irritation
H319  Causes serious eye irritation
H335  May cause respiratory irritation
H411  Toxic to aquatic life with long lasting effects

Precautionary Statement(s)
P210  Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P273  Avoid release to the environment.
P280  Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331+P310  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.
P305+P351+P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370 + P378  In case of fire: Use suitable extinguishing media for extinction.
P391  Collect spillage. Hazardous to the aquatic environment

2.3 Other Hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3 Composition/Information On Ingredients
3.2 Mixture

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium nitrate</td>
<td>As Per EC Regulation 1272/2008 Ox. Sol. 3 H272</td>
<td>&gt;=40 - &lt;=50%</td>
</tr>
<tr>
<td>CAS No. :</td>
<td>7757-79-1</td>
<td></td>
</tr>
<tr>
<td>EC No. :</td>
<td>231-818-8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>As Per EC Regulation 1272/2008 Ox. Sol. 3; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3 H272; H315; H319; H335</td>
<td>&gt;=30 - &lt;=50%</td>
</tr>
<tr>
<td>CAS No. :</td>
<td>6484-52-2</td>
<td></td>
</tr>
<tr>
<td>EC No. :</td>
<td>229-347-8</td>
<td></td>
</tr>
<tr>
<td>Component</td>
<td>Classification</td>
<td>Concentration</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Manganese sulphate</td>
<td></td>
<td>&gt;=0.3 &lt;=0.5%</td>
</tr>
<tr>
<td>CAS No. : 10034-96-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No. : 232-089-9</td>
<td>As Per EC Regulation 1272/2008</td>
<td>STOT RE 2; Aquatic Chronic 2  H373; H411</td>
</tr>
<tr>
<td>Index-No : 025-003-00-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>As Per EC Directive 67/548/EEC or 1999/45/EC</td>
<td>Xn; Xi; R22; R36/38; R50/53</td>
</tr>
<tr>
<td>Boric acid</td>
<td></td>
<td>&gt;=0.1 &lt;=0.2%</td>
</tr>
<tr>
<td>CAS No. : 10043-35-3</td>
<td>As Per EC Regulation 1272/2008</td>
<td>Repr.Tox. 1A, 1B  H360</td>
</tr>
<tr>
<td>EC No. : 233-139-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index-No : 005-007-00-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>As Per EC Regulation 1272/2008</td>
<td></td>
</tr>
<tr>
<td>Potassium iodide</td>
<td>As Per EC Regulation 1272/2008</td>
<td>&gt;=0.01 &lt;=0.03%</td>
</tr>
<tr>
<td>CAS No. : 7681-11-0</td>
<td>Acute Tox.oral 4; Skin Irrit. 2; Eye Irrit. 2A  H302; H315; H319</td>
<td></td>
</tr>
<tr>
<td>EC No. : 231-659-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>As Per EC Regulation 1272/2008</td>
<td></td>
</tr>
<tr>
<td>Zinc sulphate, heptahydrate</td>
<td>As Per EC Regulation 1272/2008</td>
<td>&gt;=0.1 &lt;=0.3%</td>
</tr>
<tr>
<td>CAS No. : 7446-20-0</td>
<td>Acute Tox.oral 4; Eye Dam. 1; Aquatic Chronic 1  H302; H318; H410</td>
<td></td>
</tr>
<tr>
<td>EC No. : 231-793-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index-No : 030-006-00-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper sulphate</td>
<td>As Per EC Regulation 1272/2008</td>
<td>&gt;=0.0001 &lt;=0.001%</td>
</tr>
<tr>
<td>CAS No. : 7758-98-7</td>
<td>Acute Tox.oral 4; Skin Irrit. 2; Eye Irrit. 2A; Aquatic Chronic 1  H302; H315; H319; H410</td>
<td></td>
</tr>
<tr>
<td>EC No. : 231-847-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron (II) sulphate,7H2O</td>
<td>As Per EC Regulation 1272/2008</td>
<td>&gt;=0.5 &lt;=0.8%</td>
</tr>
<tr>
<td>CAS No. : 7782-63-0</td>
<td>Acute Tox.oral 4; Skin Irrit. 2  H302; H315</td>
<td></td>
</tr>
<tr>
<td>EC No. : 231-753-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Index-No : 026-003-01-4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Component Classification

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotinic acid</td>
<td>As Per EC Regulation 1272/2008 Eye Irrit. 2A H319</td>
<td>&gt;=0.01 - &lt;=0.02%</td>
</tr>
<tr>
<td>CAS No.</td>
<td>59-67-6</td>
<td></td>
</tr>
<tr>
<td>EC No.</td>
<td>200-441-0</td>
<td></td>
</tr>
</tbody>
</table>

### 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 off with soap and plenty of 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

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

#### 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

Magnesium oxides, Sulphur oxides, Sodium oxides, Iron oxides, Calcium Oxide, Cobalt oxides, Copper oxides, Manganese oxides, Molybdenum oxides, Oxides of Phosphorus, Potassium oxides, Zinc oxides

#### 5.3 Precautions for fire-fighters

Cool closed containers exposed to fire with water spray.

#### 5.4 Further information

Wear self-contained breathing apparatus for firefighting if necessary.

### 6 Accidental Release Measures
6.1 **Personal precautions, protective equipment and emergency procedures**
Use personnel protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 **Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into environment must be avoided.

6.3 **Methods and materials for containment and cleaning up**
Keep in suitable, closed containers for disposal. Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**
For disposal see Section 13.

---

7 **Handling and Storage**

7.1 **Precautions for safe handling**
Avoid formation of dust and aerosols. Avoid exposure Obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from heat and source of ignition.

7.2 **Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): Oxidizing Solids

**Recommended Storage Temperature** : 2 - 8°C

7.3 **Specific end uses**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

---

8 **Exposure Controls/Personal Protection**

8.1 **Control parameters**

8.2 **Exposure controls**

*Appropriate engineering controls*
Handle in accordance to general industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

*Personal protective equipment*

**Eye/face protection**
Safety glasses with side-shields conforming to EN 166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Have eye-washing facilities readily available where eye contact can occur.

**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 89/686/EEC and the standard EN 374 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 particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Environment exposure controls**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

---

### 9 Physical and chemical properties

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White to off-white, homogenous powder</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>3.5 - 4.5</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (Solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Soluble after boiling in distilled water</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 9.2 Other safety information

No data available

---

### 10 Stability and Reactivity

#### 10.1 Reactivity

No data available

#### 10.2 Chemical stability

Stable under recommended storage conditions.

#### 10.3 Possibility of hazardous reactions

No data available

#### 10.4 Conditions to avoid

No data available

#### 10.5 Incompatible materials

No data available
10.6 **Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions - Nitrogen oxides (NOx), Sulphur oxides, Oxides of phosphorus,. Potassium oxides, Magnesium oxide, Cobalt/cobalt oxides, Calcium oxide, Copper oxides

11 **Toxicological Information**

11.1 **Information on toxicological effects**

*Acute toxicity*

No data available

Remarks : No data available

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 - repeated exposure*

No data available

*Aspiration hazard*

No data available

**Additional Information**

RTECS : Not Applicable

12 **Ecological Information**

12.1 **Toxicity**

No data available

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) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
12.6 Other adverse effects

13 Disposal Considerations
13.1 Waste treatments methods
Product
Dispose of as unused product.
13.2 Contaminated packaging
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in
igniting as this material is highly flammable. Contact a licenced professional waste disposal service to
dispose off this material.

14 Transport Information
14.1 UN-No
14.2 UN proper shipping name
ADNR : Nitrates, inorganic, n.o.s.
ADR : Nitrates, inorganic, n.o.s.
IATA_C : Nitrates, inorganic, n.o.s.
IATA_P : Nitrates, inorganic, n.o.s.
IMDG : Nitrates, inorganic, n.o.s.
RID : Nitrates, inorganic, n.o.s.
14.3 Transport hazard class(es)
ADNR : 5.1 ADR : 5.1 IATA_C : 5.1 IATA_P : 5.1 IMDG : 5.1 RID : 5.1
14.4 Packaging group
ADNR : II ADR : II IATA_C : II IATA_P : II IMDG : II RID : II
14.5 Environmental hazards
ADR : NO IMDG : Marine Pollutant : NO IATA_C : NO
14.6 Special precautions for use
No data available

15 Regulatory Information
This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
15.1 Safety health and environment regulations/legislation specific for the substance or
mixture
15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out.

16 Other information
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
H360 May damage fertility or the unborn child
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
Repr. Tox. 1A, 1B Reproductive toxicity, Category 1A, 1B
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
R22 Harmful if swallowed.
R36/38 Irritating to eyes and skin.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse. Effects in the aquatic environment.
N Dangerous for the environment
Xi Irritant
Xn Harmful

Further Information

Copyright 2010 HiMedia Laboratories Pvt. Ltd. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. HiMedia Laboratories, shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.