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

1.1 Product Identifiers
Product Number  PT011
Product Name  Murashige & Skoog Medium
               w/ Vitamins, Sucrose & Agar;
               w/o CaCl₂, IAA & Kinetin

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
Fax No.  +91-22-2500 1607
Mail Id  ptc@himedialabs.com
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;=3 - &lt;=5%</td>
</tr>
<tr>
<td>CAS No. : 7757-79-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No. : 231-818-8</td>
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</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;</td>
<td>&gt;=2 - &lt;=5%</td>
</tr>
<tr>
<td>CAS No. : 6484-52-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC No. : 229-347-8</td>
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<tr>
<td>Component</td>
<td>Classification</td>
<td>Concentration</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td><strong>Manganese sulphate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS No.: 10034-96-5</td>
<td>As Per EC Regulation 1272/2008</td>
<td>&gt;=0.3 - &lt;=0.5%</td>
</tr>
<tr>
<td>EC No.: 232-089-9</td>
<td>STOT SE 3 H272; H315; H319; H335</td>
<td></td>
</tr>
<tr>
<td>Index-No : 025-003-00-4</td>
<td>STOT RE 2; Aquatic Chronic 2 H373; H411</td>
<td></td>
</tr>
<tr>
<td><strong>Boric acid</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS No.: 10043-35-3</td>
<td>As Per EC Regulation 1272/2008</td>
<td>&gt;=0.01 - &lt;=0.02%</td>
</tr>
<tr>
<td>EC No.: 233-139-2</td>
<td>Repr.Tox. 1A, 1B H360</td>
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<tr>
<td>Index-No : 005-007-00-2</td>
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<td></td>
</tr>
<tr>
<td><strong>Potassium iodide</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS No.: 7681-11-0</td>
<td>As Per EC Regulation 1272/2008</td>
<td>&gt;=0.001 - &lt;=0.003%</td>
</tr>
<tr>
<td>EC No.: 231-659-4</td>
<td>Acute Tox.oral 4; Skin Irrit. 2; Eye Irrit. 2A H302; H315; H319</td>
<td></td>
</tr>
<tr>
<td>Index-No :</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Zinc sulphate, heptahydrate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS No.: 7446-20-0</td>
<td>As Per EC Regulation 1272/2008</td>
<td>&gt;=0.01 - &lt;=0.03%</td>
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<tr>
<td>EC No.: 231-793-3</td>
<td>Acute Tox.oral 4; Eye Dam. 1; Aquatic Chronic 1 H302; H318; H410</td>
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<tr>
<td>Index-No : 030-006-00-9</td>
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<td></td>
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<tr>
<td><strong>Copper sulphate</strong></td>
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<tr>
<td>CAS No.: 7758-98-7</td>
<td>As Per EC Regulation 1272/2008</td>
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</tr>
<tr>
<td>EC No.: 231-847-6</td>
<td>Acute Tox.oral 4; Skin Irrit. 2; Eye Irrit. 2A H302; H315; H319 H410</td>
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<tr>
<td><strong>Iron (II) sulphate, 7H2O</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS No.: 7782-63-0</td>
<td>As Per EC Regulation 1272/2008</td>
<td>&gt;=0.05 - &lt;=0.1%</td>
</tr>
<tr>
<td>EC No.: 231-753-5</td>
<td>Acute Tox.oral 4; Skin Irrit. 2 H302;</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>Nicotinic acid</td>
<td>CAS No. :</td>
<td>59-67-6</td>
</tr>
<tr>
<td></td>
<td>EC No. :</td>
<td>200-441-0</td>
</tr>
<tr>
<td></td>
<td>As Per EC Regulation 1272/2008</td>
<td>Eye Irrit. 2A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H319</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, immediately after handling the products 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>5.00 - 6.00</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
Strong reducing agents, Strong acids, Powdered metals

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. Other Decomposition products. No Data Available. In event of fire - refer section 5

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
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

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