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| Name of the Product | Murashige & Skoog Modified Medium w/ CaCl₂ & Nitsch vitamins; w/o Sucrose & Agar |
| Code No. | PT 1044 |
| Section 1 : Chemical Identification | |
| Code No. | : PT 1044 |
| Name of the Product | : Murashige & Skoog Modified Medium w/ CaCl ₂ & Nitsch vitamins; w/o Sucrose & Agar |
| Produced by | : Central Drug House Pvt. Ltd. |
| Address | : 7/28 Vardaan House, Darya Ganj, New Delhi (INDIA) |
| Tel. No. | : 00 91 11 49404040 |

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| Section 2 | Hazards Identification |
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| 2.1 | <p>Classification of the substance or mixture CLP Classification-Regulation (EC) No. 1272/2008[EU-GHS/CLP] Oxidising solids, (Category 3), H272 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 3), H412 For the full text of the H-Statements mentioned in this Section, See Section 16</p> |
| 2.2 | <p>Label elements Labeling according to Regulation (EC) No.1272/2008</p> <div style="text-align: center;">   </div> <p>Pictogram Signal word Warning Hazard Statement(s) H272 May intensify fire; oxidizer H315 Causes skin irritation H319 Causes serious eye irritation H335 May cause respiratory irritation H412 Harmful to aquatic life with long lasting effects</p> <p>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. 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.</p> |
| 2.3 | <p>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.</p> |

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| Section 3 | Composition/Information On Ingredients |
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| 3.1 | <p>Mixture</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Component</th> <th style="width: 30%;">Classification</th> <th style="width: 30%;">Concentration</th> </tr> </thead> <tbody> <tr> <td>Potassium nitrate</td> <td></td> <td></td> </tr> <tr> <td>CAS No. :</td> <td>7757-79-1</td> <td rowspan="2" style="text-align: center;">>=40 - <=50%</td> </tr> <tr> <td>EC No. :</td> <td>231-818-8</td> </tr> <tr> <td></td> <td>As Per EC Regulation 1272/2008</td> <td></td> </tr> <tr> <td></td> <td>Ox. Sol. 3 H272</td> <td></td> </tr> </tbody> </table> | Component | Classification | Concentration | Potassium nitrate | | | CAS No. : | 7757-79-1 | >=40 - <=50% | EC No. : | 231-818-8 | | As Per EC Regulation 1272/2008 | | | Ox. Sol. 3 H272 | |
|-------------------|---|---------------|----------------|---------------|-------------------|--|--|-----------|-----------|--------------|----------|-----------|--|---------------------------------------|--|--|-----------------|--|
| Component | Classification | Concentration | | | | | | | | | | | | | | | | |
| Potassium nitrate | | | | | | | | | | | | | | | | | | |
| CAS No. : | 7757-79-1 | >=40 - <=50% | | | | | | | | | | | | | | | | |
| EC No. : | 231-818-8 | | | | | | | | | | | | | | | | | |
| | As Per EC Regulation 1272/2008 | | | | | | | | | | | | | | | | | |
| | Ox. Sol. 3 H272 | | | | | | | | | | | | | | | | | |



Material Safety Data Sheet

| Component | Classification | Concentration |
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| Ammonium nitrate | | |
| CAS No. : 6484-52-2 EC No. : 229-347-8 | As Per EC Regulation 1272/2008 Ox. Sol. 2; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3 H272; H315; H319; H335 As Per EC Directive 67/548/EEC or 1999/45/EC O (gas); Xi R8; R36/37/38 | >=30 - <=40% |
| Calcium chloride, anhydrous | | |
| CAS No. : 10043-52-4 EC No. : 233-140-8 | As Per EC Regulation 1272/2008 Eye Irrit. 2A H319 | >=7 - <=9% |
| Manganese sulphate | | |
| CAS No. : 10034-96-5 EC No. : 232-089-9 Index-No : 025-003-00-4 | As Per EC Regulation 1272/2008 STOT RE 2; Aquatic Chronic 2 H373; H411 | >=0.3 - <=0.5% |
| Boric acid | | |
| CAS No. : 10043-35-3 EC No. : 233-139-2 Index-No : 005-007-00-2 | As Per EC Regulation 1272/2008 Repr.Tox. 1A, 1B H360 | >=0.1 - <=0.2% |
| Potassium iodide | | |
| CAS No. : 7681-11-0 EC No. : 231-659-4 | As Per EC Regulation 1272/2008 Acute Tox.oral 4; Skin Irrit. 2; Eye Irrit. 2A H302; H315; H319 | >=0.01 - <=0.02% |
| Zinc sulphate, heptahydrate | | |
| CAS No. : 7446-20-0 EC No. : 231-793-3 Index-No : 030-006-00-9 | As Per EC Regulation 1272/2008 Acute Tox.oral 4; Eye Dam. 1; Aquatic Chronic 1 H302; H318; H410 | >=0.1 - <=0.3% |
| Copper sulphate pentahydrate | | |
| CAS No. : 7758-99-8 | As Per EC Regulation 1272/2008 H302; H315; H319; H410 | >=0.0005 - <=0.0006% |



| Component | Classification | Concentration |
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| Cobalt chloride, 6H ₂ O | | |
| CAS No. : 7791-13-1 EC No. : 231-589-4 Index-No : 027-004-00-5 | As Per EC Regulation 1272/2008 Acute Tox.oral 4; Skin Sens. 1; Resp. Sens. 1; Muta. 2; Carc. 1B; Repr. 1B; Aquatic Chronic 1 H302; H317; H334; H341; H350i; H360F; H410 | >=0.0005 - <=0.0006% |
| Component | Classification | Concentration |
| Nicotinic acid | | |
| CAS No. : 59-67-6 EC No. : 200-441-0 | As Per EC Regulation 1272/2008 Eye Irrit. 2A H319 | >=0.1 - <=0.2% |
| Section 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 Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 | |
| Section 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. | |
| Section 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. | |



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|-----------------|---|------------|--|-------|-------------------|-----------------|-------------------|----|-----------|
| | <p>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.</p> <p>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.</p> <p>6.4 Reference to other sections For disposal see Section 13.</p> | | | | | | | | |
| Section 7 | Handling and Storage | | | | | | | | |
| | <p>7.1 Precautions for safe handling Avoid formation of dust and aerosols. Wear protective gloves and eye/face protection. Use only in well ventilated areas. Keep away from heat, sparks and open flame.</p> <p>7.2 Conditions for safe storage, including any incompatibilities Store in cool/well-ventilated place. Storage class (TRGS 510): Oxidizing Solids Recommended Storage Temperature : 2 - 8°C</p> <p>7.3 Specific end uses Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.</p> | | | | | | | | |
| Section 8 | Exposure Controls / Personal Protection | | | | | | | | |
| | <p>8.1 Control parameters</p> <p>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.</p> | | | | | | | | |
| Section 9 | Physical and Chemical Properties | | | | | | | | |
| | <p>9.1 Information on basic physical and chemical properties</p> <table border="0"> <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> </table> | Appearance | White to off-white, homogenous powder. | Odour | No data available | Odour Threshold | No data available | pH | 3.5 - 4.5 |
| Appearance | White to off-white, homogenous powder. | | | | | | | | |
| Odour | No data available | | | | | | | | |
| Odour Threshold | No data available | | | | | | | | |
| pH | 3.5 - 4.5 | | | | | | | | |



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| | Melting/freezing point Initial boiling point and boiling range Flash point Upper/lower flammability or explosive limits Evaporation rate Flammability (Solid, gas) Vapour pressure Relative density Water Solubility Autoignition Temperature Decomposition Temperature Viscosity Explosive properties Oxidizing properties Vapour density Thermal decomposition | No data available No data available No data available No data available No data available No data available No data available No data available Soluble in water No data available No data available No data available No data available No data available No data available |
| | 9.2 Other safety information No data available | |
| Section 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 | |
| Section 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 | |



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| | No data available Aspiration hazard No data available Additional Information RTECS : Not Applicable |
| Section 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 |
| Section 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. |
| Section 14 | Transport Information |
| | 14.1 UN-No ADNR : 1477 ADR : 1477 IATA_C : 1477 IATA_P : 1477 IMDG : 1477 RID : 1477 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 |
| Section 15 | Regulatory Information |



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| | <p>This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.</p> <p>15.1 Safety health and environment regulations/legislation specific for the substance or mixture</p> <p>15.2 Chemical Safety Assessment</p> <p>For this product a chemical safety assessment was not carried out.</p> |
| Section 16 | <p>Other Information</p> <p>H272 May intensify fire; oxidizer</p> <p>H302 Harmful if swallowed</p> <p>H315 Causes skin irritation</p> <p>H317 May cause an allergic skin reaction</p> <p>H318 Causes serious eye damage</p> <p>H319 Causes serious eye irritation</p> <p>H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled</p> <p>H335 May cause respiratory irritation</p> <p>H341 Suspected of causing genetic defects</p> <p>H350i May cause cancer by inhalation</p> <p>H360 May damage fertility or the unborn child</p> <p>H360F May damage fertility</p> <p>H373 May cause damage to organs through prolonged or repeated exposure</p> <p>H410 Very toxic to aquatic life with long lasting effects</p> <p>H411 Toxic to aquatic life with long lasting effects</p> <p>Acute Tox.oral 4 Acute toxicity, oral, Category 4</p> <p>Aquatic Chronic 1 Hazardous to the aquatic environment, long term hazard, Category 1</p> <p>Aquatic Chronic 2 Hazardous to the aquatic environment, long term hazard, Category 2</p> <p>Carc. 1B Carcinogenicity, Category 1B</p> <p>Eye Dam. 1 Serious eye damage or eye irritation, Category 1</p> <p>Eye Irrit. 2A Serious eye damage or eye irritation, Category 2A</p> <p>Muta. 2 Germ cell mutagenicity, Category 2</p> <p>Ox. Sol. 3 Oxidising solids, Category 3</p> <p>Repr. 1B Reproductive toxicity, Category 1B</p> <p>Repr.Tox. 1A, 1B Reproductive toxicity, Category 1A, 1B</p> <p>Resp. Sens. 1 Skin Sensitisation, respiratory, Category 1</p> <p>Irrit. 2 Skin corrosion or irritation, Category 2</p> <p>Skin Sens. 1 STOT Sensitisation, Skin, Category 1</p> <p>RE 2 Specific target organ toxicity, repeated exposure, Category 2</p> <p>STOT SE 3 Specific target organ toxicity, single exposure, Respiratory tract irritation, Category 3</p> <p>R36/37/38 Irritating to eyes, respiratory system and skin.</p> <p>R8 Contact with combustible material may cause fire.</p> <p>O (gas) Oxidising (gas)</p> <p>Xi Irritant</p> <p>Further Information</p> <p>The information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. The information is offered solely for user's obligation to investigate and determine the suitability of the information for their particular purpose.</p> |