### Kit Components

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3301100</td>
<td>Agrobacterium Transformation Kit</td>
</tr>
</tbody>
</table>

#### Components:

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3301101</td>
<td>Agrobacterium Transformation Solution</td>
</tr>
<tr>
<td>3301025</td>
<td>Agrobacterium Media</td>
</tr>
<tr>
<td>3301225</td>
<td>Agrobacterium Media Agar</td>
</tr>
<tr>
<td>5000552</td>
<td>Roll &amp; Grow® Plating Beads</td>
</tr>
</tbody>
</table>
1 Identification

- **Product identifier**
  - **Trade name**: Agrobacterium Transformation Solution
  - **Article number**: 3301101
  - **Application of the substance / the mixture** For Research Use Only

- **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**: Quality Control Department
  - **Emergency telephone number**: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2 Hazard(s) identification

- **Classification of the substance or mixture**
  The product is not classified according to the Globally Harmonized System (GHS).

- **Label elements**
  - **GHS label elements**: Void
  - **Hazard pictograms**: Void
  - **Signal word**: Void
  - **Hazard statements**: Void
  - **Classification system**:
    - **NFPA ratings (scale 0 - 4)**
      - Health = 0
      - Fire = 0
      - Reactivity = 0
    - **HMIS-ratings (scale 0 - 4)**
      - Health = 0
      - Fire = 0
      - Reactivity = 0

- **Other hazards**
  - **Results of PBT and vPvB assessment**
    - **PBT**: Not applicable.
    - **vPvB**: Not applicable.

3 Composition/information on ingredients

- **Description**: Mixture: consisting of the following components.
- **Dangerous components**: Void

<table>
<thead>
<tr>
<th>Non-Hazardous Ingredients</th>
<th>Water</th>
<th>90-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 7732-18-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EINECS: 231-791-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTECS: ZC0110000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Contd. on page 2)
4 First-aid measures

- **Description of first aid measures**
  - **General information:** No special measures required.
  - **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:** Flush eyes with running water as a precaution.
  - **After swallowing:** If symptoms persist consult doctor.
  - **Information for doctor:**
    - **Most important symptoms and effects, both acute and delayed** No further relevant information available.
    - **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
  - **Special hazards arising from the substance or mixture** No further relevant information available.
  - **Advice for firefighters**
    - **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  Use personal 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.
  - **Environmental precautions:** Do not allow to enter sewers/surface or ground water.
  - **Methods and material for containment and cleaning up:**
    Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - **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.
  - **Protective Action Criteria for Chemicals**
    | PAC-1:                  | 10035-04-8 Calcium Chloride Dihydrate | 16 mg/m³ |
    | PAC-2:                  | 10035-04-8 Calcium Chloride Dihydrate | 170 mg/m³ |
    | PAC-3:                  | 10035-04-8 Calcium Chloride Dihydrate | 1,100 mg/m³ |

7 Handling and storage

- **Handling:**
  - **Precautions for safe handling** No special measures required.
  - **Information about protection against explosions and fires:** No special requirements.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 15-30 °C
Trade name: Agrobacterium Transformation Solution

- Requirements to be met by storerooms and receptacles: No special requirements.
- Further information about storage conditions:
- 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 Section 7.
- Control parameters
- Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
- Breathing equipment: Not required.
- Protection of hands:
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: Goggles recommended during refilling.

9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
  - Appearance:
    Form: Liquid
    Color: Indeterminate
    Odor: Indeterminate
    Odor threshold: Not determined.
  - pH-value: Not determined.
- Change in condition
  Boiling point/Boiling range: Undetermined.
- Flash point: Not applicable.
- Flammability (solid, gaseous): Not applicable.
- Ignition temperature:
  Decomposition temperature: Not determined.
### 4.3.4

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto igniting</td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td>Danger of explosion</td>
<td>See section 10</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Upper:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Density</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solubility in / Miscibility with</td>
<td></td>
</tr>
<tr>
<td>Water:</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Dynamic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Kinematic:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Solvent content</td>
<td></td>
</tr>
<tr>
<td>Organic solvents:</td>
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<tr>
<td>Water:</td>
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<tr>
<td>VOC content:</td>
<td>0.0 g/l / 0.00 lb/gl</td>
</tr>
<tr>
<td>Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

### 10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **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**
- **Primary irritant effect**
  - **on the skin**: No irritant effect.
  - **on the eye**: Irritant and potentially harmful
- **Sensitization**: No sensitizing effects known.
- **Additional toxicological information**:
  The product is not subject to classification according to internally approved calculation methods for preparations:
  When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
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: Generally not hazardous for water
  - 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:
    Can not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
  - Recommendation: Discard must be made according to official regulations.

14 Transport information

- UN-Number
  - DOT, ADR, IMDG, IATA: Not regulated
- UN proper shipping name
  - DOT, ADR, IMDG, IATA: Not regulated
- Transport hazard class(es)
  - DOT, ADR, IMDG, IATA: Not regulated
- Packing group
  - DOT, ADR, IMDG, IATA: Not regulated
- Environmental hazards: Not applicable.
Trade name: Agrobacterium Transformation Solution

<table>
<thead>
<tr>
<th>15 Regulatory information</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Safety, health and environmental regulations/legislation specific for the substance or mixture</td>
</tr>
<tr>
<td>· Sara</td>
</tr>
<tr>
<td>· Section 355 (extremely hazardous substances):</td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Section 313 (Specific toxic chemical listings):</td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>· TSCA (Toxic Substances Control Act):</td>
</tr>
<tr>
<td>7732-18-5 Water</td>
</tr>
<tr>
<td>· Proposition 65</td>
</tr>
<tr>
<td>· Chemicals known to cause cancer:</td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Chemicals known to cause reproductive toxicity for females:</td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Chemicals known to cause reproductive toxicity for males:</td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Chemicals known to cause developmental toxicity:</td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>· Carcinogenic categories</td>
</tr>
<tr>
<td>· EPA (Environmental Protection Agency)</td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>· TLV (Threshold Limit Value established by ACGIH)</td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>· NIOSH-Ca (National Institute for Occupational Safety and Health)</td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>· GHS label elements: Void</td>
</tr>
<tr>
<td>· Hazard pictograms: Void</td>
</tr>
<tr>
<td>· Signal word: Void</td>
</tr>
<tr>
<td>· Hazard statements: Void</td>
</tr>
<tr>
<td>· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.</td>
</tr>
</tbody>
</table>

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 SDS: Quality Control Dept.
· Date of preparation / last revision 03/23/2017 / -
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
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
1 Identification

- Product identifier
  - Trade name: Agrobacterium Media
  - Article number: 3301025
  - Application of the substance / the mixture For Research Use Only

- 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: Quality Control Department
  - Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2 Hazard(s) identification

- Classification of the substance or mixture
  The product is not classified according to the Globally Harmonized System (GHS).

- Label elements
  - GHS label elements Void
  - Hazard pictograms Void
  - Signal word Void
  - Hazard statements Void

- Classification system:
- NFPA ratings (scale 0 - 4)
  - Health = 0
  - Fire = 0
  - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
  - Health = 0
  - Fire = 0
  - Reactivity = 0

- Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

3 Composition/information on ingredients

- Description: Mixture: consisting of the following components.

- Dangerous components:
  - CAS: 57-50-1
  - EINECS: 200-334-9
  - RTECS: WN6500000
  - Sucrose 1-2.5%

(Contd. on page 2)
Trade name: Agrobacterium Media

- Non-Hazardous Ingredients

<table>
<thead>
<tr>
<th>CAS: 91079-40-2</th>
<th>Tryptone</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 293-428-4</td>
<td>90-100%</td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
  - General information: No special measures required.
  - 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: Flush eyes with running water as a precaution.
  - After swallowing: If symptoms persist consult doctor.

- Information for doctor:
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents: Use fire fighting measures that suit the environment.

- Special hazards arising from the substance or mixture: No further relevant information available.

- Advice for firefighters
  - Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Use personal 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.

- Environmental precautions: Do not allow to enter sewers/surface or ground water.

- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

- 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.

- Protective Action Criteria for Chemicals

<table>
<thead>
<tr>
<th>PAC-1:</th>
<th>10034-99-8</th>
<th>Magnesium Sulfate Heptahydrate</th>
<th>33 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAC-2:</td>
<td>10034-99-8</td>
<td>Magnesium Sulfate Heptahydrate</td>
<td>370 mg/m³</td>
</tr>
<tr>
<td>PAC-3:</td>
<td>10034-99-8</td>
<td>Magnesium Sulfate Heptahydrate</td>
<td>2,300 mg/m³</td>
</tr>
</tbody>
</table>
7 Handling and storage

- Handling:
  - Precautions for safe handling: No special measures required.
  - Information about protection against explosions and fires: No special requirements.

- Conditions for safe storage, including any incompatibilities
  - Storage: 15-30 °C
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Further information about storage conditions:
    - 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 Section 7.

- Control parameters

- Components with limit values that require monitoring at the workplace:
  - 57-50-1 Sucrose
    - PEL Long-term value: 15* 5** mg/m³
      *total dust **respirable fraction
    - REL Long-term value: 10* 5** mg/m³
      *total dust **respirable fraction
    - TLV Long-term value: 10 mg/m³

- Additional information: The lists that were valid during the creation were used as basis.

- General protective and hygienic measures:
  - The usual precautionary measures for handling chemicals should be followed.
  - Breathing equipment: Not required.

- Protection of hands:
  - 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: Goggles recommended during refilling.

9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
  - Appearance:
    - Form: According to product specification
### Trade name: Agrobacterium Media

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Color</td>
<td>Indeterminate</td>
</tr>
<tr>
<td>· Odor</td>
<td>Indeterminate</td>
</tr>
<tr>
<td>· Odor threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· pH-value</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Change in condition</td>
<td></td>
</tr>
<tr>
<td>· Boiling point/Boiling range</td>
<td>Undetermined.</td>
</tr>
<tr>
<td>· Flash point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· Flammability (solid, gaseous)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>· Ignition temperature</td>
<td></td>
</tr>
<tr>
<td>· Decomposition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Auto igniting</td>
<td>Product is not self-igniting.</td>
</tr>
<tr>
<td>· Danger of explosion</td>
<td>See section 10</td>
</tr>
<tr>
<td>· Explosion limits</td>
<td></td>
</tr>
<tr>
<td>· Lower</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>· Upper</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>· Vapor pressure</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>· Density</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>· Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Vapor density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Evaporation rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Solubility in / Miscibility with</td>
<td></td>
</tr>
<tr>
<td>· Water</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>· Partition coefficient (n-octanol/water)</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Viscosity</td>
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<tr>
<td>· Dynamic</td>
<td>Not determined.</td>
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<tr>
<td>· Kinematic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>· Solvent content</td>
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</tr>
<tr>
<td>· Organic solvents</td>
<td>0.0 %</td>
</tr>
<tr>
<td>· VOC content</td>
<td>0.0 g/l / 0.00 lb/gl</td>
</tr>
<tr>
<td>· Solids content</td>
<td>100.0 %</td>
</tr>
<tr>
<td>· Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

### 10 Stability and reactivity

- · Reactivity: No further relevant information available.
- · 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:
- Primary irritant effect:
- on the skin: No irritant effect.
- on the eye: Irritant and potentially harmful
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
  The product is not subject to classification according to internally approved calculation methods for preparations:
  When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    None of the ingredients is listed.
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    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:
  Can not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
- Recommendation: Discard must be made according to official regulations.
### 14 Transport information

| · UN-Number | DOT, ADR, IMDG, IATA | Not regulated |
| · UN proper shipping name | DOT, ADR, IMDG, IATA | Not regulated |
| · Transport hazard class(es) | DOT, ADR, IMDG, IATA | Not regulated |
| · Packing group | DOT, ADR, IMDG, IATA | Not regulated |
| · Environmental hazards | Not applicable. |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · UN "Model Regulation" | Not regulated |

### 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): |
| None of the ingredients is listed. |
| · TSCA (Toxic Substances Control Act): |
| 57-50-1 Sucrose |
| 8013-01-2 Yeast Extract Powder |
| · 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) |
| None of the ingredients is listed. |
| · TLV (Threshold Limit Value established by ACGIH) |
| 57-50-1 Sucrose |
Safety Data Sheet
acc. to OSHA HCS

Trade name: Agrobacterium Media

- NIOSH-Ca (National Institute for Occupational Safety and Health)
  None of the ingredients is listed.

- GHS label elements: Void
- Hazard pictograms: Void
- Signal word: Void
- Hazard statements: Void
- 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 SDS: Quality Control Dept.
- Date of preparation / last revision: 03/23/2017 / -
- 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
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  NIOSH: National Institute for Occupational Safety
  OSHA: Occupational Safety & Health
  TLV: Threshold Limit Value
  PEL: Permissible Exposure Limit
  REL: Recommended Exposure Limit

OS
1 Identification

· Product identifier
  · Trade name: Agrobacterium Media Agar
  · Article number: 3301225
  · Application of the substance / the mixture For Research Use Only

· 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: Quality Control Department
  · Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2 Hazard(s) identification

· Classification of the substance or mixture
  The product is not classified according to the Globally Harmonized System (GHS).
  
  · Label elements
    · GHS label elements Void
    · Hazard pictograms Void
    · Signal word Void
    · Hazard statements Void
    · Classification system:
      · NFPA ratings (scale 0 - 4)
      
      Health = 0
      Fire = 0
      Reactivity = 0

      · HMIS-ratings (scale 0 - 4)
      
      HEALTH   Health = 0
      FIRE     Fire = 0
      REACTIVITY Reactivity = 0

· Other hazards
  · Results of PBT and vPvB assessment
    · PBT: Not applicable.
    · vPvB: Not applicable.

3 Composition/information on ingredients

· Description: Mixture: consisting of the following components.

· Dangerous components:
  
  | CAS: 57-50-1 | Sucrose   |
  | EINECS: 200-334-9 | 1-2.5% |
  | RTECS: WN6500000 |          |

(Contd. on page 2)
4 First-aid measures

- Description of first aid measures
  - General information: No special measures required.
  - 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: Flush eyes with running water as a precaution.
  - After swallowing: If symptoms persist consult doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed: No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents: Use fire fighting measures that suit the environment.
  - Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
  - Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Use personal 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.
- Environmental precautions: Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- 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.
- Protective Action Criteria for Chemicals
  - PAC-1:
    10034-99-8 Magnesium Sulfate Heptahydrate 33 mg/m³
  - PAC-2:
    10034-99-8 Magnesium Sulfate Heptahydrate 370 mg/m³
7 Handling and storage

· Handling:
  · Precautions for safe handling No special measures required.
  · Information about protection against explosions and fires: No special requirements.

· Conditions for safe storage, including any incompatibilities
  · Storage: 15-30 °C
  · Requirements to be met by storerooms and receptacles: No special requirements.

· Further information about storage conditions:
  · 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 Section 7.

· Control parameters

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

  57-50-1 Sucrose

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
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<tr>
<td>PEL</td>
<td>15* 5** mg/m³</td>
</tr>
<tr>
<td>REL</td>
<td>10* 5** mg/m³</td>
</tr>
<tr>
<td>TLV</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

  *total dust **respirable fraction

· Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls

· Personal protective equipment:
  · General protective and hygienic measures:
    The usual precautionary measures for handling chemicals should be followed.
  · Breathing equipment: Not required.
  · Protection of hands:
    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: Goggles recommended during refilling.
9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**

- **Appearance:**
  - Form: According to product specification
  - Color: Indeterminate
  - Odor: Indeterminate
  - Odor threshold: Not determined.

- **pH-value:** Not determined.

- **Change in condition**
  - Boiling point/Boiling range: Undetermined.

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:**
  - Decomposition temperature: Not determined.

- **Auto igniting:** Product is not self-igniting.

- **Danger of explosion:** See section 10

- **Explosion limits:**
  - Lower: Not Applicable
  - Upper: Not Applicable

- **Vapor pressure:** Not Applicable

- **Density:** Not Applicable

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**
  - Water: Insoluble.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**
  - Dynamic: Not determined.
  - Kinematic: Not determined.

- **Solvent content:**
  - Organic solvents: 0.0 %
  - VOC content: 0.0 g/l / 0.00 lb/gl

- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.

- **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.
Trade name: Agrobacterium Media Agar

- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- Primary irritant effect:
  - on the skin: No irritant effect.
  - on the eye: Irritant and potentially harmful
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    None of the ingredients is listed.
  - NTP (National Toxicology Program)
    None of the ingredients is listed.
  - OSHA-Ca (Occupational Safety & Health Administration)
    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:
  Can not be disposed of together with household garbage. Do not allow product to reach sewage system.
**Trade name: Agrobacterium Media Agar**

- *Uncleaned packagings:*
  - *Recommendation:* Discard must be made according to official regulations.

### 14 Transport information

- **UN-Number**
  - DOT, ADR, IMDG, IATA: Not regulated
- **DOT proper shipping name**
  - DOT, ADR, IMDG, IATA: Not regulated
- **Transport hazard class(es)**
  - DOT, ADR, IMDG, IATA
  - Class: Not regulated
- **Packing group**
  - DOT, ADR, IMDG, IATA: Not regulated
- **Environmental hazards:** Not applicable.
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **UN "Model Regulation":** Not regulated

### 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):**
    - None of the ingredients is listed.
- **TSCA (Toxic Substances Control Act):**
  - 9002-18-0 Agar
  - 57-50-1 Sucrose
  - 8013-01-2 Yeast Extract Powder
- **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)**
  None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**
  - 57-50-1 Sucrose
    - A4

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**
  None of the ingredients is listed.

- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **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 SDS**: Quality Control Dept.
- **Date of preparation / last revision**: 03/23/2017 / -
- **Abbreviations and acronyms**:  
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  - IMDG: International Maritime Code for Dangerous Goods  
  - DOT: US Department of Transportation  
  - IATA: International Air Transport Association  
  - ACGIH: American Conference of Governmental Industrial Hygienists  
  - EINECS: European Inventory of Existing Commercial Chemical Substances  
  - ELINCS: European List of Notified Chemical Substances  
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)  
  - NFPA: National Fire Protection Association (USA)  
  - HMIS: Hazardous Materials Identification System (USA)  
  - VOC: Volatile Organic Compounds (USA, EU)  
  - PBT: Persistent, Bioaccumulative and Toxic  
  - vPvB: very Persistent and very Bioaccumulative  
  - NIOSH: National Institute for Occupational Safety  
  - OSHA: Occupational Safety & Health  
  - TLV: Threshold Limit Value  
  - PEL: Permissible Exposure Limit  
  - REL: Recommended Exposure Limit
1 Identification

- **Product identifier**
- **Trade name:** Roll & Grow® Plating Beads
- **Article number:** 5000552
- **Application of the substance / the mixture:** For Research Use Only

- **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:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2 Hazard(s) identification

- **Classification of the substance or mixture**
  The substance is not classified according to the Globally Harmonized System (GHS).

- **Label elements**
- **GHS label elements:** Void
- **Hazard pictograms:** Void
- **Signal word:** Void
- **Hazard statements:** Void
- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 0
    - Fire = 0
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
  - **Other hazards**
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:** Substances
- **CAS No.**
  - **Description:** 4mm Glass Beads, Washed

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
5 Fire-fighting measures

- Extinguishing media
  - Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
  - Protective equipment: No special measures required.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Use personal 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.
- 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.
- Protective Action Criteria for Chemicals
  - PAC-1:
    Substance is not listed.
  - PAC-2:
    Substance is not listed.
  - PAC-3:
    Substance is not listed.

7 Handling and storage

- Handling:
  - Precautions for safe handling: No special measures required.
  - Information about protection against explosions and fires: No special requirements.
- Conditions for safe storage, including any incompatibilities
  - Storage: 15–30 °C
- Requirements to be met by storerooms and receptacles: No special requirements.
- Further information about storage conditions:
  - 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 Section 7.
- Control parameters
- Components with limit values that require monitoring at the workplace: Not required.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures:
    The usual precautionary measures for handling chemicals should be followed.
  - Breathing equipment: Not required.
  - Protection of hands:
    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.
  - 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:
    Form: According to product specification
    Color: Indeterminate
    Odor: Indeterminate
    Odor threshold: Not determined.
  - pH-value: Not applicable.
- Change in condition
  - Boiling point/Boiling range: Undetermined.
  - Flash point: Not applicable.
- Flammability (solid, gaseous): Product is not flammable.
- Ignition temperature:
  - Decomposition temperature: Not determined.
  - Auto igniting: Not determined.
  - Danger of explosion: See section 10
- Explosion limits:
  - Lower: Not Applicable
  - Upper: Not Applicable
10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **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**:
- **Primary irritant effect**: No further relevant information available.
- **Sensitization**: No further relevant information available.
- **Additional toxicological information**: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us. The substance is not subject to classification.
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)**
  - Substance is not listed.
- **NTP (National Toxicology Program)**
  - Substance is not listed.
Trade name: Roll & Grow® Plating Beads

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:
  Can not be disposed of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
  Recommendation: Discard must be made according to official regulations.

14 Transport information

- UN-Number
  DOT, ADR, IMDG, IATA: Not regulated
- UN proper shipping name
  DOT, ADR, IMDG, IATA: Not regulated
- Transport hazard class(es)
  DOT, ADR, IMDG, IATA: Not regulated
- Packing group
  DOT, ADR, IMDG, IATA: Not regulated
- Environmental hazards:
  Not applicable.
- Special precautions for user
  Not applicable.
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
  Not applicable.
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
  - Section 355 (extremely hazardous substances): Substance is not listed.
  - Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is not listed.
- Proposition 65
  - Chemicals known to cause cancer: Substance is not listed.
  - Chemicals known to cause reproductive toxicity for females: Substance is not listed.
  - Chemicals known to cause reproductive toxicity for males: Substance is not listed.
  - Chemicals known to cause developmental toxicity: Substance is not listed.
- Carcinogenic categories
  - EPA (Environmental Protection Agency) Substance is not listed.
  - TLV (Threshold Limit Value established by ACGIH) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health)
  - GHS label elements Void
  - Hazard pictograms Void
  - Signal word Void
  - Hazard statements Void
  - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

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