<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G7472</td>
<td>Magne™ Protein G Beads, 20% Slurry</td>
</tr>
</tbody>
</table>

Components:

| G747          | Magne™ Protein G Beads       |
1 Identification

Product identifier
Trade name: Magne™ Protein G Beads
Article number: G747
Application of the substance / the mixture Laboratory chemicals

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330
Information department: SDS author: Regulatory.Affairs@promega.com
Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

2 Hazard(s) identification

Classification of the substance or mixture

GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.

GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

Label elements
GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms GHS02, GHS07
Signal word Warning
Hazard statements
Flammable liquid and vapor.
Causes serious eye irritation.
Precautionary statements
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Use explosion-proof electrical/ventilating/lighting/equipment.
Wear protective gloves / eye protection / face protection.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Trade name: Magne™ Protein G Beads

Ground/bond container and receiving equipment.
Use only non-sparking tools.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:
NFPA ratings (scale 0 - 4)
Health = 1
Fire = 2
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 1
Fire = 2
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Combustible
Primary route(s) of entry: Oral
Target Organ(s):
May cause Liver damage (Hepatotoxin)
May affect Nervous system (Neurotoxin)
Other hazards: Keep away from sources of ignition.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures
Description:
The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances may be withheld as a Promega Corp. trade secret.

Dangerous components:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>9004-34-6 Cellulose</td>
<td>15-20%</td>
</tr>
<tr>
<td>64-17-5 ethanol</td>
<td>15-20%</td>
</tr>
</tbody>
</table>

Additional information: For the wording of the listed risk phrases refer to section 15.

4 First-aid measures

Description of first aid measures
After inhalation: If the patient feels unwell or is concerned, obtain medical advice.
After skin contact: Generally the product does not irritate the skin.
After eye contact: Rinse opened eye for several minutes under running water.
After swallowing: If the patient feels unwell or is concerned, obtain medical advice.
Information for doctor:
Most important symptoms and effects, both acute and delayed
Headache
Dizziness
**Trade name: Magne™ Protein G Beads**

Dizziness
Nausea

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

---

**5 Fire-fighting measures**

*Extinguishing media*
Suitable extinguishing agents:
CO2, sand, extinguishing powder. Do not use water.
Use fire fighting measures that suit the environment.

*For safety reasons unsuitable extinguishing agents:*
Water
Water with full jet

*Special hazards arising from the substance or mixture* None known

*Advice for firefighters* No special advice

---

**6 Accidental release measures**

*Personal precautions, protective equipment and emergency procedures*
Remove persons from danger area.
Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources
Wear protective clothing.

*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).
Do not flush with water or aqueous cleansing agents

*Reference to other sections*
See Section 7 for information on safe handling.
See Section 13 for disposal information.

---

**7 Handling and storage**

*Handling:*

Precautions for safe handling Use only in well ventilated areas.
Information about protection against explosions and fires:
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

*Conditions for safe storage, including any incompatibilities*

Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep receptacle tightly sealed.
Specific end use(s) No further relevant information available.
8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Substance</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>9004-34-6 Cellulose</td>
<td>Long-term value: 15* 5** mg/m³</td>
<td>Long-term value: 10* 5** mg/m³</td>
<td>Long-term value: 10 mg/m³</td>
</tr>
<tr>
<td>64-17-5 ethanol</td>
<td>PEL: Long-term value: 1900 mg/m³, 1000 ppm</td>
<td>REL: Long-term value: 1900 mg/m³, 1000 ppm</td>
<td>TLV: Short-term value: 1880 mg/m³, 1000 ppm</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: Wash hands before breaks and at the end of work.

Breathing equipment: Not required.

Protection of hands:

Protective gloves
Select the glove material considering penetration time, rate of diffusion and degradation time.

It is recommended that the selected protective gloves be tested and approved under NIOSH or EU Directive 89/686/EEC and the standard EN 374 derived from it.

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.

Eye protection: Use equipment for eye protection tested and approved under government NIOSH standards.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

<table>
<thead>
<tr>
<th>Form</th>
<th>Color</th>
<th>Odor</th>
<th>Odor threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Colorless</td>
<td>Alcohol-like</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

Change in condition

<table>
<thead>
<tr>
<th>Melting point/Melting range:</th>
<th>Boiling point/Boiling range:</th>
<th>Flash point:</th>
<th>Flammability (solid, gaseous):</th>
<th>Ignition temperature:</th>
<th>Decomposition temperature:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undetermined.</td>
<td>Undetermined.</td>
<td>23 - 60 °C (73 - 140 °F)</td>
<td>Not applicable.</td>
<td>340 °C (644 °F)</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>
**Auto igniting:**
Product is not selfigniting.

**Danger of explosion:**
Product does not present an explosion hazard.

**Explosion limits:**
- **Lower:** 3.5 Vol %
- **Upper:** 15.0 Vol %

**Vapor pressure at 20 °C (68 °F):** 59 hPa (44 mm Hg)

**Density:** Not determined.
**Relative density** Not determined.
**Vapor density** Not determined.
**Evaporation rate** Not determined.
**Solubility in / Miscibility with**
- **Water:** Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.

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

**Organic solvents:** 16.0 %
**Water:** 64.0 %
**VOC content:** 16.0 %
**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.
**Hazardous decomposition products:** No dangerous decomposition products known.

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**11 Toxicological information**

**Information on toxicological effects**
**Acute toxicity:**

**LD/LC50 values that are relevant for classification:** No data available

**Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
**Sensitization:** No sensitizing effects known.
**Additional toxicological information:**

**Carcinogenic categories**

<table>
<thead>
<tr>
<th>IARC (International Agency for Research on Cancer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-3 ethanol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NTP (National Toxicology Program)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients are listed.</td>
</tr>
</tbody>
</table>
Trade name: Magne™ Protein G Beads

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients are listed.

* 12 Ecological information

Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
Persistence and degradability: Not available
Behavior in environmental systems:
Bioaccumulative potential: Not known
Mobility in soil: No further relevant information available.
Ecotoxicological effects:
Remark: Not 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:
Disposal should be in accordance with applicable regional, national and local laws and regulations.
Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

* 14 Transport information

<table>
<thead>
<tr>
<th>UN-Number</th>
<th>DOT, ADR, ADN, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not hazardous for transportation</td>
</tr>
<tr>
<td>DOT, ADR, ADN, IMDG, IATA</td>
<td>Void</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>None</td>
</tr>
<tr>
<td>DOT, ADR, ADN, IMDG, IATA</td>
<td>Void</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>None</td>
</tr>
<tr>
<td>DOT, ADR, ADN, IMDG, IATA Class</td>
<td>Void</td>
</tr>
<tr>
<td>Packing group</td>
<td>None</td>
</tr>
<tr>
<td>DOT, ADR, IMDG, IATA</td>
<td>Void</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>Marine pollutant:</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

(Contd. on page 7)
**Trade name:** Magne™ Protein G Beads

<table>
<thead>
<tr>
<th>Special precautions for user</th>
<th>Not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td>Void</td>
</tr>
</tbody>
</table>

### 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 are listed.

- **Section 313 (Specific toxic chemical listings):**
  None of the ingredients are listed.

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

- All ingredients are listed.

**Proposition 65**

- **Chemicals known to cause cancer:**
  None of the ingredients are listed.

- **Chemicals known to cause reproductive toxicity for females:**
  None of the ingredients are listed.

- **Chemicals known to cause reproductive toxicity for males:**
  None of the ingredients are listed.

- **Chemicals known to cause developmental toxicity:**
  64-17-5 ethanol

**Cancerogenity categories**

- **EPA (Environmental Protection Agency)**
  None of the ingredients are listed.

- **TLV (Threshold Limit Value established by ACGIH)**
  64-17-5 ethanol A3

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

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Signal word** Warning
- **Hazard statements**
  Flammable liquid and vapor.
  Causes serious eye irritation.
- **Precautionary statements**
  Take precautionary measures against static discharge.
  Wash thoroughly after handling.
  Use explosion-proof electrical/ventilating/lighting/equipment.
  Wear protective gloves/eye protection/face protection.
  Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  Keep container tightly closed.
  Ground/bond container and receiving equipment.
  Use only non-sparking tools.
Trade name: Magne™ Protein G Beads

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
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:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI
Ph: (608) 274-4330

Date of preparation / last revision 07/05/2016 / -

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
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
Flam. Liq. 3: Flammable liquids – Category 3
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

* Data compared to the previous version altered.