Section 1. Identification

This product is considered an article. This Material Safety Data Sheet is written based on the encapsulated substance or mixture in this article.

1.1 Product identifier

Product name : Bio SEC-3 - LC Columns

Validation date : 8/26/2014.

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

Material uses : Analytical chemistry.
5190-2501 Agilent SEC-3,100A,7.8x300mm 14 ml
5190-2502 Agilent SEC-3,100A,7.8x150mm 7.2 ml
5190-2503 Agilent SEC-3,100A,4.6x300mm 5.0 ml
5190-2504 Agilent SEC-3,100A,4.6x150mm 2.5 ml
5190-2505 Agilent SEC-3,100A,7.8x50mm, guard 2.4 ml
5190-2506 Agilent SEC-3,150A,7.8x300mm 14 ml
5190-2507 Agilent SEC-3,150A,7.8x150mm 7.2 ml
5190-2508 Agilent SEC-3,150A,4.6x300mm 5.0 ml
5190-2509 Agilent SEC-3,150A,4.6x150mm 2.5 ml
5190-2510 Agilent SEC-3,150A,7.8x50mm, guard 2.4 ml
5190-2511 Agilent SEC-3,300A,7.8x300mm 14 ml
5190-2511K Agilent SEC-3,300A,7.8x300mm, 3pk 14x3 ml
5190-2512 Agilent SEC-3,300A,7.8x150mm 7.2 ml
5190-2513 Agilent SEC-3,300A,4.6x300mm 5.0 ml
5190-2514 Agilent SEC-3,300A,4.6x150mm 2.5 ml
5190-2515 Agilent SEC-3,300A,7.8x50mm, guard 2.4 ml
5190-6846 Agilent SEC-3,100A,4.6x50mm guard, 0.83 ml
5190-6847 Agilent SEC-3,150A,4.6x50mm guard, 0.83 ml
5190-6848 Agilent SEC-3,300A,4.6x50mm guard, 0.83 ml
5190-6850 Agilent SEC-3,100A,21.2x300mm, 106 ml
5190-6851 Agilent SEC-3,150A,21.2x300mm, 106 ml
5190-6852 Agilent SEC-3,300A,21.2x300mm, 106 ml
5190-6854 Agilent SEC-3,100A,21.2x50mm, 18 ml
5190-6855 Agilent SEC-3,150A,21.2x50mm, 18 ml
5190-6856 Agilent SEC-3,300A,21.2x50mm, 17.6 ml

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
Logistics Center - Americas
500 Ships Landing Way
New Castle, Delaware 19720
800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Date of issue : 08/26/2014
Section 2. Hazards identification

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product’s directions for use it may present potential health and safety hazards.

2.1 Classification of the substance or mixture

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

Comb. Dusts COMBUSTIBLE DUSTS

2.2 GHS label elements

Signal word : Warning
Hazard statements : No Code(s) - May form combustible dust concentrations in air.

Precautionary statements

Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.
Supplemental label elements : Keep container tightly closed. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Prevent dust accumulation.

2.3 Other hazards

Hazards not otherwise classified : Fine dust clouds may form explosive mixtures with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

Section 3. Composition/information on ingredients

This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product’s directions for use it may present potential health and safety hazards.

Substance/mixture : Substance (encapsulated in article)

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, amorphous, precipitated and gel</td>
<td>60 - 100</td>
<td>112926-00-8</td>
</tr>
</tbody>
</table>

Note: The hazard information listed is based on unbonded silica gel CAS Number 112926-00-8. To the best of our knowledge, the acute and chronic toxicological properties of bonded silica gels have not been investigated. This product contains synthetic amorphous silica, and should not be confused with crystalline silica such as quartz, cristobalite, or tridymite, or with diatomaceous earth or other naturally occurring forms of amorphous silica that frequently contain crystalline forms of silica.

Spherical Silica Gel, Silicon Dioxide, SEC Silica Gel, Bonded Phase Silica Gel.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Date of issue : 08/26/2014
Section 4. First aid measures

4.1 Description of necessary first aid measures

**Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

**Inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

**Potential acute health effects**

**Eye contact**: Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

**Inhalation**: Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

**Skin contact**: No known significant effects or critical hazards.

**Ingestion**: No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Eye contact**: Adverse symptoms may include the following: irritation redness

**Inhalation**: Adverse symptoms may include the following: respiratory tract irritation coughing

**Skin contact**: No specific data.

**Ingestion**: No specific data.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**: No specific treatment.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Date of issue: 08/26/2014
Section 5. Fire-fighting measures

5.1 Extinguishing media

- **Suitable extinguishing media**: Use dry chemical powder.
- **Unsuitable extinguishing media**: Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- **Specific hazards arising from the chemical**: Fine dust clouds may form explosive mixtures with air.
- **Hazardous thermal decomposition products**: Decomposition products may include the following materials: metal oxide/oxides

5.3 Advice for firefighters

- **Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- **Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- **For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- **For emergency responders**: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

- Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

- **Protective measures**: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and
Section 7. Handling and storage

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities: Do not store below the following temperature: 4°C (39.2°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)
Recommendations: Industrial applications, Professional applications.
Industrial sector specific solutions: Not applicable.

Section 8. Exposure controls/personal protection

Since the hazardous ingredient in this article is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, amorphous, precipitated and gel</td>
<td>OSHA PEL 1989 (United States, 3/1989). TWA: 6 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>NIOSH REL (United States, 10/2013). TWA: 6 mg/m³ 10 hours.</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Date of issue: 08/26/2014
Section 8. Exposure controls/personal protection

**Eye/face protection**: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles.

**Skin protection**

**Hand protection**: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection**: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection**: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**

**Physical state**: Solid. [Powder. Granular solid. Solid beads.]

**Color**: White to yellowish.

**Odor**: Odorless.

**Odor threshold**: Not available.

**pH**: Not available.

**Melting point**: >1700°C (>3092°F)

**Boiling point**: Not available.

**Flash point**: Not available.

**Evaporation rate**: Not available.

**Flammability (solid, gas)**: Not available.

**Lower and upper explosive (flammable) limits**: Not available.

**Vapor pressure**: Not available.

**Vapor density**: Not available.

**Relative density**: 2.5 to 3.5

**Solubility**: Insoluble in the following materials: cold water and hot water.

**Solubility in water**: Not available.

**Partition coefficient: n-octanol/water**: Not available.

**Auto-ignition temperature**: Not available.

**Decomposition temperature**: Not available.

**Viscosity**: Not available.

Date of issue: 08/26/2014
Section 10. Stability and reactivity

10.1 Reactivity
No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability
The product is stable.

10.3 Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.

10.5 Incompatible materials
Reactive or incompatible with the following materials:
oxidizing materials
Other: acids and alkalis.
Incompatible with: HF, F, ClF₃, OF₂.

10.6 Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Not available.

Conclusion/Summary
May be harmful if swallowed. May be irritating to mouth, throat and stomach.

Irritation/Corrosion
Not available.

Conclusion/Summary
May cause skin irritation.

Sensitization
Not available.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica, amorphous, precipitated and gel</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Section 11. Toxicological information

Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact
Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Inhalation
Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Skin contact
No known significant effects or critical hazards.

Ingestion
No known significant effects or critical hazards.

Eye contact
Adverse symptoms may include the following:
- irritation
- redness

Inhalation
Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

Skin contact
No specific data.

Ingestion
No specific data.

Symptoms related to the physical, chemical and toxicological characteristics

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects
Not available.

Potential delayed effects
Not available.

Long term exposure

Potential immediate effects
Not available.

Potential delayed effects
Not available.

Potential chronic health effects
Not available.

General
Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

Carcinogenicity
No known significant effects or critical hazards.

Mutagenicity
No known significant effects or critical hazards.

Teratogenicity
No known significant effects or critical hazards.

Developmental effects
No known significant effects or critical hazards.

Fertility effects
No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Date of issue: 08/26/2014
Section 11. Toxicological information
Not available.

Section 12. Ecological information

12.1 Toxicity
Not available.

12.2 Persistence and degradability
Not available.

12.3 Bioaccumulative potential
Not available.

12.4 Mobility in soil
Soil/water partition coefficient ($K_{OC}$) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods
Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Date of issue : 08/26/2014
Section 14. Transport information

This Material Safety Data Sheet is written based on the encapsulated substance or mixture in this article. Since the hazardous ingredient is encapsulated, the risk of exposure by inhalation, ingestion, skin contact and eyes contact is minimum.

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed
Clean Air Act Section 602 Class I Substances : Not listed
Clean Air Act Section 602 Class II Substances : Not listed
DEA List I Chemicals (Precursor Chemicals) : Not listed
DEA List II Chemicals (Essential Chemicals) : Not listed
SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard

Composition/information on ingredients

No products were found.

State regulations

Massachusetts : The following components are listed: PRECIPITATED SILICA
New York : None of the components are listed.
New Jersey : The following components are listed: SILICA, AMORPHOUS, PRECIPITATE & GEL
Pennsylvania : The following components are listed: PRECIPITATED SILICA
California Prop. 65

No products were found.

Canada inventory : All components are listed or exempted.

International regulations

International lists

: Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: Not determined.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Date of issue : 08/26/2014
Section 15. Regulatory information

| Chemical Weapons Convention List Schedule I Chemicals | Not listed |
| Chemical Weapons Convention List Schedule II Chemicals | Not listed |
| Chemical Weapons Convention List Schedule III Chemicals | Not listed |

Section 16. Other information

History

Date of issue : 8/26/2014.
Date of previous issue : 9/4/2013.
Version : 4

Indicates information that has changed from previously issued version.

Notice to reader

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