1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Viscarin® GP 209F STD

Synonyms: Carrageenan: Carrageenan, Irish moss, Chondrus extract; Seaweed flour

Chemical Family: Polysaccharides

Recommended use: Foodstuff application.

Manufacturer: FMC BioPolymer

1735 Market Street
Philadelphia, PA 19103
(800) 526-3649
msdsinfo@fmc.com

Emergency telephone number: (207) 594-3200 (FMC Plant - Rockland, ME)
(303) 595-9048 (Medical - U.S. - Call Collect)
For leak, fire, spill, or accident emergencies, call:
(800) 494-9300 (CHEMTREC - U.S.A. & Canada)
(703) 527-3887 (CHEMTREC - all other countries)

2. HAZARDS IDENTIFICATION

Emergency Overview
Powder becomes slippery when wet
Dry or powdered ingredients are combustible. Dispersal of finely divided dust from products into air may form mixtures that are ignitable and explosive. Minimize airborne dust generation and eliminate sources of ignition.

Appearance: off-white powder

Physical state: solid, dry powder

Odor: Slight marine

Eyes: May cause slight irritation.

Skin: Does not pose a potential of skin irritation and sensitization.

Inhalation: May cause irritation of respiratory tract.

Ingestion: Ingestion may cause gastrointestinal discomfort including nausea, vomiting and diarrhea if large amounts are ingested.

Chronic effects:
3. COMPOSITION/INFORMATION ON INGREDIENTS

Non-Hazardous

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrageenan</td>
<td>9000-07-1</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

**Eye contact**
Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.

**Skin contact**
Wash off immediately with plenty of water.

**Inhalation**
Move to fresh air. If breathing is irregular or stopped, administer artificial respiration. Consult a physician.

**Ingestion**
Never give anything by mouth to an unconscious person. Drink plenty of water. Get medical attention immediately if symptoms occur.

**Indication of immediate medical attention and special treatment needed, if necessary**
Treat symptomatically.

**Protection of first-aiders**
Use personal protective equipment.

5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Specific hazards arising from the chemical**
Dry or powdered ingredients are combustible. Dispersal of finely divided dust from products into air may form mixtures that are ignitable and explosive. Minimize airborne dust generation and eliminate sources of ignition.

**Protective equipment and precautions for firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**
- Health Hazard 0
- Flammability 1
- Stability 0
- Special Hazards -

6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Powder becomes slippery when wet. For personal protection see section 8.

**Methods for containment**
Maintain good housekeeping practices to avoid accumulation of settled dust, especially on overhead surfaces.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal.
7. HANDLING AND STORAGE

Handling
Avoid dust formation in confined areas. Wear personal protective equipment. In case of insufficient ventilation, wear suitable respiratory equipment if release of airborne dust is expected. Refer to Section 8.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat.

8. Exposure controls/personal protection

Exposure guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Occupational exposure controls

Engineering measures
Use with local exhaust ventilation.

Personal Protective Equipment

General Information
If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

Respiratory protection
Local nuisance dust standards apply. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Eye/face protection
Safety glasses

Skin and body protection
No special precautions required.

Hand protection
No special precautions required.

Hygiene measures
Avoid breathing vapors, mist or gas. When using, do not eat, drink or smoke. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing is recommended.
9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: off-white powder
Color: off-white
Physical state: solid, dry powder
Odor: Slight marine
Odor Threshold: No information available.
pH: 7.0 - 10.5 (1.5% solution)
Melting Point/Range: not determined
Freezing point: No information available.
Boiling Point/Range: Not applicable
Flash Point: Not applicable
Autoignition Temperature: Not applicable
Vapor pressure: Not applicable
Vapor density: No information available.
Density: No information available
Specific Gravity: (H2O = 1) Approximately 1 g/cc
Bulk density: No information available. No information available
Water solubility: (% by weight) 10% maximum
Percent volatile: No information available.
Partition coefficient: Not applicable
Viscosity: No information available.
Oxidizing properties: Not applicable

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.
Conditions to avoid: Excessive heat. Humid air.
Materials to avoid: None in particular
Hazardous decomposition products: Thermal decomposition can lead to release of irritating and toxic gases and vapors: Sulfur oxides.
Hazardous polymerization: Hazardous polymerization does not occur.
Hazardous reactions: None under normal processing.
11. TOXICOLOGICAL INFORMATION

Skin contact
Non-irritating (rabbit).

Eye contact
Non-irritating (rabbit).

Inhalation
May cause irritation of respiratory tract.

Ingestion
Ingestion may cause gastrointestinal discomfort including nausea, vomiting and diarrhea if large amounts are ingested.

LD50 Oral
> 5000 mg/kg (Rat)

LD50 Dermal
> 2000 mg/kg (rabbit)

LC50 Inhalation:
> 0.93 mg/L (Rat) (4-hr) - Maximum attainable concentration (zero mortality)

Component Information
*No mortality was observed at the maximum attainable concentration.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrageenan</td>
<td>5400 mg/kg (Rat)</td>
<td>&gt;2000 mg/kg (rabbit)</td>
<td>&gt;0.93 mg/L (rat 4hr)*</td>
</tr>
</tbody>
</table>

Chronic Toxicity

Carcinogenicity
Contains no ingredient listed as a carcinogen.

Sensitization
Did not cause sensitization on laboratory animals, guinea pig.

Mutagenicity
Not mutagenic.

Reproductive toxicity
No toxicity to reproduction.

Target Organ Effects
None noted in chronic animal studies.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Not expected to have significant environmental effects. Carrageenan is an extract of seaweeds of the class Rhodophycaea (red seaweeds).

Persistence and degradability
No information available.

Bioaccumulation
Bioaccumulation is unlikely.

Mobility
No information available.

Other adverse effects
None known

13. DISPOSAL CONSIDERATIONS

Waste disposal methods
This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
not regulated
15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA Inventory (United States of America)</th>
<th>DSL (Canada)</th>
<th>EINECS/E LINCS (Europe)</th>
<th>ENCS (Japan)</th>
<th>IECSC (China)</th>
<th>KECL (Korea)</th>
<th>PICCS (Philippines)</th>
<th>AICS (Australia)</th>
<th>NZIoC (New Zealand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrageenan</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
- Acute Health Hazard: no
- Chronic Health Hazard: no
- Fire Hazard: no
- Sudden Release of Pressure Hazard: no
- Reactive Hazard: no

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

International Regulations

Mexico - Grade
Minimum risk, Grade 0

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
Non-controlled
16. OTHER INFORMATION

<table>
<thead>
<tr>
<th></th>
<th>HMIS</th>
<th>Health Hazard 0</th>
<th>Flammability 1</th>
<th>Stability 0</th>
<th>Special precautions -</th>
</tr>
</thead>
</table>

NFPA/HMIS Ratings Legend
Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision Date: 2013-02-26
Reason for revision: (M)SDS sections updated.

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Prepared By
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End of Material Safety Data Sheet