1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Lattice® NTC 80 Microcrystalline Cellulose and Sodium Carboxymethylcellulose

Synonyms:
- Microcrystalline cellulose (INCI Name): MCC, cellulose gel
- Sodium Carboxymethylcellulose: NaCMC, CMC, SCMC, Carboxymethyl ether, Sodium CMC, Sodium salt, Cellulose gum

Recommended Use: industrial.

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

Emergency telephone number:
- 1 302 / 451-0100 (FMC Plant - Newark, Delaware)
- 1 800 / 424 9300 (CHEMTREC - U.S.A.)
- 1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)
- 1 303/ 389-1409 (Medical - U.S. - Call Collect)

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, free flowing powder

Physical State: solid

Odor: odorless

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: No known effect based on information supplied

3. COMPOSITION/INFORMATION ON INGREDIENTS

Non-Hazardous

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microcrystalline cellulose</td>
<td>9004-34-6</td>
</tr>
<tr>
<td>Sodium carboxymethylcellulose</td>
<td>9004-32-4</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 with water and soap as a precaution.

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

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 Hazards 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
Lattice® NTC 80 Microcrystalline Cellulose and Sodium Carboxymethylcellulose

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microcrystalline cellulose</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 15 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>Mexico: TWA 10 mg/m³</td>
</tr>
<tr>
<td>9004-34-6</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>Mexico: STEL 20 mg/m³</td>
</tr>
</tbody>
</table>

**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**

In case of insufficient ventilation wear suitable respiratory equipment. Local nuisance dust standards apply.

**Eye/Face Protection**

Safety glasses.

**Skin and Body Protection**

No special precautions required.

**Hand Protection**

No special precautions required.

**Hygiene measures**

When using, do not eat, drink or smoke. Wear suitable gloves and eye/face protection. Wash hands before breaks and at the end of workday. Provide regular cleaning of equipment, work area and clothing. Avoid breathing vapors, mist or gas.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Off-white, free flowing powder</td>
</tr>
<tr>
<td>Color</td>
<td>Off-white</td>
</tr>
<tr>
<td>Physical State</td>
<td>solid</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>6.0 - 8.0 (in solution) (2% solids dispersion)</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>Not determined</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Density</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>(H₂O = 1) 0.6 g/cc</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Dispersible in water</td>
</tr>
<tr>
<td>percent volatile</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

**Stability**

Stable.

**Conditions to Avoid**

Excessive heat; Dust formation.
Lattice® NTC 80 Microcrystalline Cellulose and Sodium Carboxymethylcellulose

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). (Primary Irritation Index (PII)= 0/8).

Eye Contact

Non-irritating (Rabbit).

LD50 Oral

> 5000 mg/kg (rat)

LD50 Dermal

> 2000 mg/kg (rabbit)

LC50 Inhalation

> 5.82 mg/l 4 hr (rat) - Maximum attainable concentration (zero mortality)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microcrystalline cellulose</td>
<td>&gt;5000 mg/kg (Rat)</td>
<td>&gt;2 g/kg (Rabbit)</td>
<td>&gt;5800 mg/m³ (Rat) 4 h</td>
</tr>
<tr>
<td>Sodium carboxymethylcellulose</td>
<td>&gt;5000 mg/kg (Rat)</td>
<td>&gt;2 g/kg (Rabbit)</td>
<td>&gt;5800 mg/m³ (Rat) 4 h</td>
</tr>
</tbody>
</table>

Chronic toxicity

Sensitization

Non-sensitizer; Guinea pig.

Mutagenicity

Not genotoxic in animal studies.

Reproductive toxicity

No toxicity to reproduction in animal studies.

Target organ effects

None noted in chronic animal studies.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

The environmental impact of this product has not been fully investigated.

Environmental Fate

Persistence and degradability

Microcrystalline cellulose is inherently biodegradable in soil. Microcrystalline cellulose biodegrades in soil at a rate comparable to corn starch.

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

Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION
Lattice® NTC 80 Microcrystalline Cellulose and Sodium Carboxymethylcellulose

DOT NOT REGULATED

TDG NOT REGULATED

ICAO/IATA NOT REGULATED

IMDG/IMO NOT REGULATED

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>TSCA (United States)</th>
<th>DSL (Canada)</th>
<th>EINECS/E LINCS (Europe)</th>
<th>ENCS (Japan)</th>
<th>China (IECSC)</th>
<th>KECL (Korea)</th>
<th>PICCS (Philippines)</th>
<th>AICS (Australia)</th>
<th>NZIoC (New Zealand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microcrystalline cellulose 9004-34-6</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sodium carboxymethylcellulose 9004-32-4</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Legend: X - Listed

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 Slight risk, Grade 1

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Carcinogen Status</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microcrystalline cellulose</td>
<td></td>
<td>Mexico: TWA 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mexico: STEL 20 mg/m³</td>
</tr>
</tbody>
</table>

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>HMIS</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Stability</th>
<th>Special precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NFPA/HMIS Ratings Legend

Revision date: 2014-08-01
Reason for revision: (M) SDS sections updated.

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End of Safety Data Sheet