Material Safety Data Sheet

Section 1: Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Product Name: Hydroxypropyl Methylcellulose</th>
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<tbody>
<tr>
<td>Catalog Codes:</td>
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<tr>
<td>CAS#: 9004-65-3</td>
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<tr>
<td>RTECS: NF9125000</td>
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<tr>
<td>TSCA: TSCA 8(b) inventory: Hyromellose 2208, 1000,000 cps</td>
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<tr>
<td>CI#: Not available.</td>
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<tr>
<td>Synonym: Goniosol, Methocell; Hydroxypropyl Methylcellulose; Propylene Glycol Ether of Methylcellulose; Modified Cellulose; HPMC</td>
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<tr>
<td>Chemical Name: Hydroxypropyl Methylcellulose</td>
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<tr>
<td>Chemical Formula: Not available.</td>
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</table>

Contact Information:

XIAMEN JOYFORCE CHEMICAL INDUSTRIAL CO., LTD
NO.5 BUILDING, SHUANGLI INDUSTRIAL PARK
HULI DISTRICT, XIAMEN 361009, CHINA.
TEL: +86-592-586-4569 FAX: +86-592-511-7592
Order Online: Http://www.cnjoyforce.com
Contact E-mail: Joyforce@cnjoyforce.com

Section 2: Composition and Information on Ingredients

<table>
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<th>Composition:</th>
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<tr>
<td>Name</td>
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<tr>
<td>Hypromellose 2208, 1000,000 cps</td>
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Toxicological Data on Ingredients: Not applicable.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Slightly explosive in presence of open flames and sparks. Non-explosive in presence of shocks.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: As with most organic solids, fire is possible at elevated temperatures

Special Remarks on Explosion Hazards:
Fine dust dispersed in air in sufficient concentrations, and in the presences of an ignition source is a potential dust explosion hazard.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

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<tr>
<th>Section 8: Exposure Controls/Personal Protection</th>
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<tbody>
<tr>
<td><strong>Engineering Controls:</strong> Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.</td>
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<tr>
<td><strong>Personal Protection:</strong> Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.</td>
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<tr>
<td><strong>Personal Protection in Case of a Large Spill:</strong> Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.</td>
</tr>
<tr>
<td><strong>Exposure Limits:</strong> TWA: 10 (mg/m3) Consult local authorities for acceptable exposure limits.</td>
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<tr>
<th>Section 9: Physical and Chemical Properties</th>
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<tr>
<td><strong>Physical state and appearance:</strong> Solid. (Powdered solid.)</td>
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<tr>
<td><strong>Odor:</strong> Not available.</td>
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<td><strong>Taste:</strong> Not available.</td>
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<td><strong>Molecular Weight:</strong> Not available.</td>
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<tr>
<td><strong>Color:</strong> White. Off-white.</td>
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<tr>
<td><strong>pH (1% soln/water):</strong> Not available.</td>
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<tr>
<td><strong>Boiling Point:</strong> Not available.</td>
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<td><strong>Melting Point:</strong> Not available.</td>
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<td><strong>Critical Temperature:</strong> Not available.</td>
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<td><strong>Specific Gravity:</strong> Not available.</td>
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<td><strong>Vapor Pressure:</strong> Not applicable.</td>
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<td><strong>Vapor Density:</strong> Not available.</td>
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<td><strong>Volatility:</strong> Not available.</td>
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<tr>
<td><strong>Odor Threshold:</strong> Not available.</td>
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<td><strong>Water/Oil Dist. Coeff.:</strong> Not available.</td>
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<td><strong>Ionicity (in Water):</strong> Not available.</td>
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<td><strong>Dispersion Properties:</strong> Not available.</td>
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<tr>
<td><strong>Solubility:</strong> Soluble in cold water. Insoluble in hot water, diethyl ether. Soluble in cold water to produce a viscous solution or gel. Soluble in glacial acetic acid, aniline, pyridine, dimethylformamide, equal volumes of alcohol and chloroform. Insoluble in anhydrous alcohol, chloroform</td>
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<tr>
<th>Section 10: Stability and Reactivity Data</th>
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<td>p. 3</td>
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</table>
Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, dust generation, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, acids, alkalis.

Corrosivity: Not available.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): >10000 mg/kg [Rat].

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Potential Health Effects: Skin: It is essentially non-irritating. A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts. Eyes: It is essentially non-irritating. Solid or dust may cause irritation or corneal injury due to mechanical action. Inhalation: Dust may cause respiratory tract irritation. A single exposure to dust is not likely to be hazardous. Ingestion: Swallowing large amounts may cause hypermotility and diarrhea. Single dose oral toxicity is considered to be low. It is considered a low hazard during normal industrial handling. Repeated ingestion of similar cellulosics by humans has not resulted in known significant adverse effects.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: Not available.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).
Identification: Not applicable.

Special Provisions for Transport: Not applicable.

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**Section 15: Other Regulatory Information**

Federal and State Regulations: TSCA 8(b) inventory: Hypromellose 2208, 1000,000 cps

Other Regulations: Not available.

Other Classifications:

DSCL (EEC):
This product is not classified according to the EU regulations. Not applicable.

HMIS (CHINA.):
- Health Hazard: 1
- Fire Hazard: 1
- Reactivity: 0

Personal Protection: E

National Fire Protection Association (CHINA.):
- Health: 1
- Flammability: 1
- Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

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**Section 16: Other Information**

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 10:36 AM

Last Updated: 11/01/2010 12:00 PM

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