MATERIAL SAFETY DATA SHEET
Chlorinated polyethylene resin (CPE)

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Chlorinated polyethylene resin
Synonyms: CPE resin

**** SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS ****

Chemical composition: Chlorinated Polyethylene, containing

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>%</th>
<th>EINECS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>064754-90-1</td>
<td>20-50% wt% chlorine</td>
<td>&gt;93</td>
<td>-</td>
</tr>
<tr>
<td>001317-65-3</td>
<td>Calcium carbonate</td>
<td>&lt;5</td>
<td>207-439-9</td>
</tr>
<tr>
<td>001592-23-0</td>
<td>Calcium stearate</td>
<td>&lt;1</td>
<td>216-427-8</td>
</tr>
<tr>
<td>14807-96-6</td>
<td>Talc</td>
<td>&lt;1</td>
<td>238-877-9</td>
</tr>
</tbody>
</table>

**** SECTION 3 - HAZARDS IDENTIFICATION ****

Potential Health Effects:

Ingestion: Not a probable route of exposure. Single dose oral LD-50 has not been determined. Single dose oral toxicity is believed to be very low.

Skin: Skin contact, especially with hot polymer, may cause skin irritation in some sensitive people resulting in redness, itching, and in extreme cases, blistering. Avoid contact with hot polymer which may give thermal burns.

Eye: Polymer chips or dust in the eye may cause mechanical damage including scratching of the cornea.

Inhalation: Vapors released during processing may be composed of hydrogen chloride and possibly carbon monoxide. These gases are evolved, they will cause tearing and burning of the eyes. The vapors will also cause irritation to the upper respiratory tract which results in a sore throat and coughing in severe cases with shortness of breath. Repeated breathing of dusts over many years may result in adverse lung effects.

Talc: Short-term over-exposure by inhalation to Talc may cause irritation of the nose, throat and lungs with cough, difficulty breathing or shortness of breath. Long-term over-exposure may lead to chronic lung disease with impaired lung function and abnormal chest x-rays. Increased susceptibility to the effects of Talc may be observed in persons with pre-existing disease of the lungs.

Carcinogenicity Information:

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.
**** SECTION 4 - FIRST AID MEASURES ****

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin contact:
Flush skin with water after contact. Wash contaminated clothing before reuse. If molten material gets on skin, cool rapidly with cold water. Do not attempt to remove material from skin. Obtain medical treatment for thermal burn.

Eye contact:
In case of contact, immediately flush eyes with plenty of water for at least 5 minutes.

Ingestion:
Not a probable route. However, in case of accidental ingestion, call a physician.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

Flammable Properties:
Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixture in air.

Unusual Fire/Explosion Hazard:
Solid polymer can be combusted only with difficulty. Hydrogen chloride is a decomposition/combustion product.

Hazardous Combustion Products:
Hydrogen chloride, carbon monoxide, organic acids, aldehydes, alcohols.

Extinguishing Media:
Water Fog, Foam, Dry Chemical, and CO₂.

Fire Fighting Instructions
Use self-contained breathing apparatus and protective clothing to avoid exposure to hydrogen chloride and other fumes.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

Personal precautions: Use appropriate PERSONAL PROTECTIVE EQUIPMENT.

Methods for cleaning up: Use sweeping or vacuuming techniques.

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) selections before proceeding with clean-up.

**** SECTION 7 - HANDLING and STORAGE ****

Handling (personnel):
See FIRST AID and PERSONAL PROTECTIVE EQUIPMENT SECTIONS. Wash hand after handing.

Storage
Store in a cool, dry and well-ventilated place.
**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

**Engineering Controls:**
Use sufficient ventilation to keep employee exposure below recommended limits. Static Controls. Static charges can build up and ignite dust-laden atmospheres.

**Personal Protection Equipment:**

*Eye/Face Protection:*
Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying of molten material. A full face mask respirator provides protection from eye irritation.

*Respirators:*
A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge with a dust/mist filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirator is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

*Protective Clothing:*
If there is potential contact with hot/molten material, wear heat resistant clothing and footwear.

**Exposure Guidelines:** Applicable Exposure limits

- **Talc, Containing no Asbestos Fibers:**
  - PEL (OSHA): Respirable dust, 1/2*(80 mg/m³/ % SiO₂) as 8 Hr TWA, A4
  - TLV (ACGIH): 2 mg/m³, respirable dust, 8 Hr TWA, A4

- **Calcium Stearate:**
  - PEL (OSHA): None Established
  - TLV (ACGIH): 10 mg/m³, total dust, 8 Hr TWA A4

- **Calcium Carbonate:**
  - PEL (OSHA): 15 mg/m³, total dust, 8 Hr TWA
  - 5 mg/m³, respirable dust, 8 Hr TWA
  - TLV (ACGIH): 10 mg/m³, total dust, 8 Hr TWA

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

**Form:** Powder

**Color:** White

**Odour:** None

**Change in physical state:** Thermal degradation temperature app. 160°C

**Density (20°C):** 1.1-1.3g/cm³

**Bulk density:** 450-600kg/m³

**Vapour pressure (°C):** n.a. mbar

**Viscosity (°C):** n.a.
Solubility in water (20℃): insoluble
pH-value (g/1 H2O) (20℃): n.a.

**** SECTION 10 - STABILITY AND REACTIVITY ****

Stability: Stable at normal temperatures and storage conditions.
Conditions to avoid: Irritating gases may be emitted upon the temperature 160℃.
Hazardous decomposition products: Carbon monoxide, Hydrogen chloride (HCl), Hydrocarbon oxidation products including Organic acids, Aldehydes and Alcohols.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

[Exposure guidelines]
CHA(MAC): 15 ㎎/m3 (Hydrogen chloride may be generation under thermal degradation conditions).
U.S(TWA): 10 ㎎/m3 (Calcium carbonate), ACGIH TLV 10 ㎎/m3 (Calcium stearate).
U.S(STEL): No guideline.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Environmental Fate movement & partitioning: No bioconcentration is expected because of high molecular weight (MW>1000). In the terrestrial environment, this material will sink and remain in the sediment.
Degradation & transformation: This water insoluble polymeric solid is expected to be insert in the environment. Surface phodegradation is expected.
Ecotoxicity: Not expected to be acutely toxic.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Burn in an approved industrial incinerator or bury in an approved industrial landfill in accordance with applicable federal, state, and local regulations.

**** SECTION 14 - TRANSPORT INFORMATION ****

According the international transportation regulation, this product is suitable to sea transportation.
Proper Shipping Name: Not regulated. No restricted under IATA regulations.

**** SECTION 15 - REGULATORY INFORMATION ****

U.S. regulations
SARA HAZARD CATEGORY: This product has been reviewed according to the EPA “Hazard Categories” promulgated under section 311 and 312 of the superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category: not have met any hazard category.

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**TOXIC SUBSTANCES CONTROL ACT (TSCA):**

All ingredients are not required to be listed on the TSCA inventory.

**OSHA HAZARD COMMUNICATION STANDARD:**

This product is not a “Hazardous Chemical” as defined by the OSHA.


**CHINA**

According to the standard of the People’s Republic of China, “Classification and code of dangerous goods” GB6944-86, This product does not belong to dangerous goods.

**** SECTION 16 - ADDITIONAL INFORMATION ****

Creation date: 2010-10-01

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer’s responsibility to ensure that its activities comply with Federal, State or provincial and local laws.