Material Safety Data Sheet

Section 1. Product and Company Identification

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Celite ® 545</th>
<th>Product Code</th>
<th>CX0574</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>EMD Chemicals Inc.</td>
<td>Effective Date</td>
<td>5/11/2005</td>
</tr>
<tr>
<td></td>
<td>P.O. Box 70</td>
<td>Print Date</td>
<td>5/11/2005</td>
</tr>
<tr>
<td></td>
<td>480 Democrat Road</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gibbstown, NJ 08027</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For More Information Call
856-423-6300  Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call
800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym
Diatomaceous Earth

Material Uses
Analytical reagent.

Chemical Family
Inorganic silicate.

Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diatomaceous Earth</td>
<td>68855-54-9</td>
<td>100</td>
</tr>
<tr>
<td>This product may contain up to 54% crystalline silica.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sand (Quartz)</td>
<td>14808-60-7</td>
<td>&lt;4</td>
</tr>
<tr>
<td>Cristobalite</td>
<td>14464-46-1</td>
<td>&lt;50</td>
</tr>
</tbody>
</table>

Section 3. Hazards Identification

Physical State and Appearance
Solid.

Emergency Overview
WARNING!
HARMFUL IF INHALED.
CANCER HAZARD
CONTAINS MATERIAL WHICH CAN CAUSE CANCER
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
LUNGS, RESPIRATORY TRACT, EYE, LENS OR CORNEA.
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Routes of Entry
Inhalation. Ingestion.

Potential Acute Health Effects

Eyes
May be hazardous in case of eye contact (irritant).

Skin
May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Continued on Next Page
**Medical Conditions Aggravated by Overexposure:**

Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

**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.

**Skin Contact**

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Inhalation**

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

**Ingestion**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

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**Section 5. Fire Fighting Measures**

**Flammability of the Product**

Non-flammable.

**Auto-ignition Temperature**

Not applicable.

**Flash Points**

Not applicable.

**Flammable Limits**

Not applicable.

**Products of Combustion**

Not available.

**Fire Hazards in Presence of Various Substances**

Not applicable.

**Explosion Hazards in Presence of Various Substances**

Risks of explosion of the product in presence of static discharge: No.

Risks of explosion of the product in presence of mechanical impact: No.

**Fire Fighting Media and Instructions**

Not applicable.

**Protective Clothing (Fire)**

Not applicable.

**Special Remarks on Fire Hazards**

Not available.

**Special Remarks on Explosion Hazards**

Not available.

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*Continued on Next Page*
Section 6. Accidental Release Measures

Small Spill and Leak
Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill and Leak
Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Spill Kit Information
No specific spill kit required for this product.

Section 7. Handling and Storage

Handling
Avoid contact with eyes, skin and clothing. Avoid breathing dust. Keep container closed. Do not ingest.

Storage
Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls
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 contaminant below the exposure limit.

Personal Protection

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Splash goggles.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Lab coat.</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.</td>
</tr>
<tr>
<td>Hands</td>
<td>Gloves.</td>
</tr>
<tr>
<td>Feet</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Protective Clothing (Pictograms)

Personal Protection in Case of a Large Spill
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.

Product Name
Diatomaceous Earth
This product may contain up to 54% crystalline silica.

<table>
<thead>
<tr>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMWA_MAK (Austria, 2001).</td>
</tr>
<tr>
<td>TWA: 0.3 mg/m³ 8 hour(s). Form: Dust and fumes</td>
</tr>
<tr>
<td>SUVA (Switzerland, 2001). Notes: Not Temporary</td>
</tr>
<tr>
<td>MAK: 0.3 mg/m³ 8 hour(s). Form: Dust and fumes</td>
</tr>
<tr>
<td>TRGS900 (Germany, 2000). Notes: Not Tentative</td>
</tr>
<tr>
<td>TWA: 0.3 mg/m³ 8 hour(s).</td>
</tr>
<tr>
<td>NAOSH (Ireland, 1999).</td>
</tr>
<tr>
<td>OEL: 1.2 mg/m³ 8 hour(s). Form: Dust</td>
</tr>
<tr>
<td>NZ OSH (NZ, 1994).</td>
</tr>
<tr>
<td>TWA: 10 mg/m³ 8 hour(s). Form: Inspirable dust containing no asbestos and less than 1% free silica</td>
</tr>
<tr>
<td>EH40-MEL (United Kingdom (UK), 2001). Notes: MEL</td>
</tr>
<tr>
<td>TWA: 0.3 mg/m³ 8 hour(s). Form: Dust</td>
</tr>
<tr>
<td>EH40-OES (United Kingdom (UK), 2001). Notes: OES</td>
</tr>
<tr>
<td>TWA: 2.4 mg/m³ 8 hour(s). Form: Dust</td>
</tr>
</tbody>
</table>

Continued on Next Page
AUVA (Austria, 1995).
- TWA: 0.15 mg/m³ 8 hour(s).

Belgium Minister of Labour (Belgium, 1998).
- VL: 0.1 mg/m³ 8 hour(s).

BAUA (Germany, 1997).
- TWA: 0.15 mg/m³ 8 hour(s).

DK-Arbejdstilsinlet (Denmark, 1996).
- GV: 0.3 mg/m³ 8 hour(s).

Tyterveyslaitos (Finland, 1998).
- TWA: 0.2 mg/m³ 8 hour(s).

INRS (France, 1996).
- VME: 0.1 mg/m³ 8 hour(s).

National Authority for Occupational Safety/Health (Ireland, 1999).
- OEL: 0.3 mg/m³ 8 hour(s).

Arbeidsinspectie (Netherlands, 1999).
- TGG 8 uur: 0.075 mg/m³ 8 hour(s).

N-Arbeidstilsinlet (Norway, 1996).
- AN: 0.3 mg/m³ 8 hour(s).

AFS (Sweden, 1996).
- NGV: 0.1 mg/m³ 8 hour(s).

ACGIH (United States, 2000).
- TWA: 0.05 mg/m³ 8 hour(s). Form: Respirable fraction

NIOSH REL (United States, 1994).
- TWA: 0.05 mg/m³ 10 hour(s).

OSHA Final Rule (United States, 1989).
- TWA: 0.1 mg/m³ 8 hour(s). Form: Respirable dust

NOHSC (Australia, 2002).
- TWA: 0.1 mg/m³ 8 hour(s).

Lijst Grenswaarden (Belgium, 2002).
- VL: 0.05 mg/m³ 8 hour(s). Form: Dust

SUVA (Switzerland, 2001).
- MAK: 0.15 mg/m³ 8 hour(s). Form: Dust

- TWA: 0.08 mg/m³ 8 hour(s). Form: Respirable dust

TRGS900 MAK (Germany, 2002).
- TWA: 0.15 mg/m³ 8 hour(s).

Arbejdstilsynet (Denmark, 2000).
- GV: 0.05 mg/m³ 8 hour(s). Form: Dust

INSHT (Spain, 2001).
- TWA: 0.05 mg/m³ 8 hour(s).

Työterveyslaitos (Finland, 2002).
- TWA: 0.1 mg/m³ 8 hour(s).

INRS (France, 1999).
- VME: 0.05 mg/m³ 8 hour(s). Form: Dust

NAOSH (Ireland, 2002).
- STEL: 0.05 ppm 15 minute(s). Form: Dust

OEL: 0.3 mg/m³ 8 hour(s). Form: Dust

- TWA: 0.05 mg/m³ 8 hour(s).

Secretary of Work and Social Security (MX, 1994).
- CPT: 0.05 mg/m³ 8 hour(s).

Arbeidstilsynet (Norway, 2001).
- AN: 0.05 mg/m³ 8 hour(s). Form: Dust

NZ OSH (NZ, 1994). Notes: New Zealand variation.
- TWA: 0.1 ppm 8 hour(s). Form: Respirable dust

AFS (Sweden, 2000).
- NGV: 0.05 mg/m³ 8 hour(s). Form: Dust

EH40-MEL (United Kingdom (UK), 2002).
- TWA: 0.3 mg/m³ 8 hour(s). Form: Dust

Continued on Next Page
Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Not available</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Physical State and Appearance</td>
<td>Solid</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling/Condensation Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting/Freezing Point</td>
<td>1710.05°C (3110.1°F) based on data for: Sand. Weighted average: 1710.05°C (3110.1°F)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Weighted average: 2.66 (Water = 1)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>LogKow</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability and Reactivity</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Not available.</td>
</tr>
<tr>
<td>Incompatibility with Various Substances Rem/Incompatibility</td>
<td>Not available.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Not available.</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Will not occur.</td>
</tr>
</tbody>
</table>

Continued on Next Page
+ Section 11. Toxicological Information

RTECS Number: Sand VV7330000
Cristobalite VV7325000
Diatomaceous Earth Not available.

Toxicity LD_{50}: Not available.
LC_{50}: Not available.

Chronic Effects on Humans CARCINOGENIC EFFECTS: Classified + (Proven.) by NIOSH [Sand]. Classified A2 (Suspected for human.) by ACGIH, 2A (Probable for human.) by IARC, 2 (Reasonably Anticipated To Be Human Carcinogens.) by NTP [Sand]. Classified 1 (Proven for human.) by IARC, 1 (Known To Be Human Carcinogens.) by NTP, + (Proven.) by NIOSH [Cristobalite].

Acute Effects on Humans May be hazardous in case of eye contact (irritant). May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Hazardous in case of inhalation. May be hazardous in case of inhalation (lung irritant).

Synergetic Products (Toxicologically) Not available.

Irritancy Draize Test: Not available.

Sensitization Not available.

Carcinogenic Effects Classified + (Proven.) by NIOSH [Sand]. Classified A2 (Suspected for human.) by ACGIH, 2A (Probable for human.) by IARC, 2 (Reasonably Anticipated To Be Human Carcinogens.) by NTP [Sand]. Classified 1 (Proven for human.) by IARC, 1 (Known To Be Human Carcinogens.) by NTP, + (Proven.) by NIOSH [Cristobalite].

Toxicity to Reproductive System Not available.

Teratogenic Effects Not available.

Mutagenic Effects Not available.

Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Section 13. Disposal Considerations

EPA Waste Number Not available.

Treatment Material does not have an EPA Waste Number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

Section 14. Transport Information

DOT Classification Proper Shipping Name: CHEMICALS, N.O.S.
RQ: Not applicable.

TDG Classification Not available.

IMO/IMDG Classification Proper Shipping Name: CHEMICALS, N.O.S.
RQ: Not applicable.

Continued on Next Page
### Section 15. Regulatory Information

#### U.S. Federal Regulations
- TSCA 8(b) inventory: Sand; Cristobalite; Diatomaceous Earth
- SARA 302/304/311/312 extremely hazardous substances: No products were found.
- SARA 302/304 emergency planning and notification: No products were found.
- SARA 302/304/311/312 hazardous chemicals: Sand; Cristobalite; Diatomaceous Earth
- SARA 313 toxic chemical notification and release reporting: No products were found.
- Clean Water Act (CWA) 307: No products were found.
- Clean Water Act (CWA) 311: No products were found.
- Clean air act (CAA) 112 accidental release prevention: No products were found.
- Clean air act (CAA) 112 regulated flammable substances: No products were found.
- Clean air act (CAA) 112 regulated toxic substances: No products were found.

#### WHMIS (Canada)
- Class D-2B: Material causing other toxic effects (TOXIC).

#### CEPA DSL
- Sand; Cristobalite; Diatomaceous Earth

#### International Regulations

<table>
<thead>
<tr>
<th>EINECS</th>
<th>238-878-4</th>
<th>Cristobalite</th>
<th>238-455-4</th>
<th>Diatomaceous Earth</th>
<th>272-489-0</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DSCL (EEC)</th>
<th>R36/37/38- Irritating to eyes, respiratory system and skin.</th>
</tr>
</thead>
</table>

#### International Lists
- Australia (NICNAS): Sand; Cristobalite; Diatomaceous Earth
- China: Cristobalite; Diatomaceous Earth
- Japan (MITI): Sand; Cristobalite
- Korea (TCCL): Sand; Cristobalite; Diatomaceous Earth
- Philippines (RA6969): Sand; Cristobalite; Diatomaceous Earth
- China: Cristobalite; Diatomaceous Earth

#### State Regulations
- Pennsylvania RTK: Sand: (generic environmental hazard); Cristobalite: (generic environmental hazard); Diatomaceous Earth: (generic environmental hazard)
- Massachusetts RTK: Sand: Cristobalite
- New Jersey: Sand; Cristobalite; Diatomaceous Earth
- California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Sand; Cristobalite
- California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Sand; Cristobalite; Diatomaceous Earth
Section 16. Other Information

Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.