MATERIAL SAFETY DATA SHEET

SECTION-1
PRODUCT & COMPANY IDENTIFICATION

IDENTITY :
MATERIAL : SOLVENT BASED COATING FORMULATION

<table>
<thead>
<tr>
<th>Code</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Of Issue</td>
<td>19/07/2008</td>
</tr>
</tbody>
</table>

FORMULA : Not Applicable

Chemical Name Or Synonyms :
- AIR DRYING ALKYD BASED COATINGS
- GLOSSY ENAMELS (PREMIUM GRADE & ECONOMY GRADE)
- SEMI GLOSSY & MATT ENAMELS, PRIMERS

MANUFACTURER’S NAME : BERGER PAINTS INDIA LIMITED

ADDRESS (NUMBER, STREET, CITY, STATE, PIN) :

FACTORY :
14 & 15 SWARNAMOYEE ROAD
P.O. BOTANIC GARDEN,
Howrah - 711103

TELEPHONE No :
+91-33-2668-4706 - 09

H.O. :
BERGER HOUSE
129 PARK STREET
Kolkata - 700 017

TELEPHONE No :
+91-33-2229-9724 - 29

PREPARED ON 19/07/2008
## Composition/Information on Ingredients:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS REG. NO.</th>
<th>APPROX. WT. %</th>
<th>TWA/TLV</th>
<th>OTHERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Drying Alkyd Resin</td>
<td>Not applicable</td>
<td>Premium 55% to 80 % / Economy 75% to 85 %</td>
<td>35 – 40 %</td>
<td>Data not available / Data not available</td>
</tr>
<tr>
<td>Titanium Dioxide or Colouring Pigments depending on nature of shade</td>
<td>For TiO2 13463-67-7</td>
<td>Total pigment irrespective of nature 2 % to 25 % / Total pigment irrespective of nature 2 to 15 %</td>
<td>Total true pigment irrespective of nature 1 – 20 % / Total extenders 25 – 45 % depending on product</td>
<td>— / For TiO2 10 mg/m³ / For TiO2 IHL RAT TCLO : 250 mg/m³/6 H 2 Y-1 / OAR</td>
</tr>
</tbody>
</table>

**Exposure limits of pigments will depend on nature of pigments present which will vary from shade to shade.**

### Extender Pigments:

| Comm : Mica Chem : Potassium Aluminium Silicate | 12001-26-2 | —— | —— | 0 – 15 % | — | 2 mg/m³ (respirable fraction) |
| Comm : Whiting/Calcite Chem : Calcium Carbonate | 471-34-1 or 1317-65-3 | —— | — | 0 – 25 % | — | — |
| Comm : Barytes Chem : Barium Sulphate | 13462-86-7 | —— | —— | 0.0 – 10 % | — | 10 mg/m³ |
| Comm : Dolomite Chem : Magnesium Calcium Carbonate | 471-34-1 or 1317-65-3 | —— | —— | 0 – 45 % | — | — |
| Comm : Talc Chem : Hydrous Magnesium Silicate | 14807-96-6 | — | — | 0 – 20 % | — | 2 mg/m³ Respirable dust |
| Comm : China Clay Chem : Hydrated Aluminium Silicate | 1332-58-7 | — | — | 0 – 10 % | 15 mg/m³ (Total Dust) 5 mg/m³ (Respirable Fraction) | 2 mg/m³ (Respirable Fraction) |
### INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>CAS REG. NO.</th>
<th>APPROX. WT. %</th>
<th>TWA/TLV</th>
<th>OTHERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>Economy</td>
<td>Primers S/Glossy &amp; Matt Enamels</td>
<td>OSHA</td>
<td>ACGHI</td>
</tr>
<tr>
<td>Com : White Spirit Chem : Mineral Terpentine Oil</td>
<td>64742-88-7</td>
<td>40% to 50%</td>
<td>55% to 60%</td>
<td>25% - 40%</td>
</tr>
</tbody>
</table>

#### DRIERS:

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>CAS REG. NO.</th>
<th>APPROX. WT. %</th>
<th>TWA/TLV</th>
<th>OTHERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>Economy</td>
<td>Primers S/Glossy &amp; Matt Enamels</td>
<td>OSHA</td>
<td>ACGHI</td>
</tr>
<tr>
<td>Lead 7439-92-1</td>
<td>0.05% to 0.75%</td>
<td>0.05% to 0.55%</td>
<td>0.05 – 0.5%</td>
<td>0.05 mg (Pb)/M³</td>
</tr>
<tr>
<td>Cobalt 7440-48-4</td>
<td>0.01% to 0.05%</td>
<td>0.01% to 0.05%</td>
<td>0.01 – 0.05%</td>
<td>—</td>
</tr>
<tr>
<td>Zinc 7440-66-6</td>
<td>0.05% to 0.15%</td>
<td>0.05% to 0.15%</td>
<td>0.0 – 0.2%</td>
<td>—</td>
</tr>
<tr>
<td>Calcium 7440-70-2</td>
<td>0.01% to 0.05%</td>
<td>0.01% to 0.05%</td>
<td>0.0 – 0.2%</td>
<td>—</td>
</tr>
<tr>
<td>Manganese 7439-96-5</td>
<td>0.01% to 0.05%</td>
<td>0.01% to 0.05%</td>
<td>0.0 – 0.05%</td>
<td>5 mg/M³</td>
</tr>
<tr>
<td>Zirconium 7447-67-7</td>
<td>0.01% to 0.05%</td>
<td>0.01% to 0.05%</td>
<td>0.0 – 0.05%</td>
<td>5 mg/M³</td>
</tr>
</tbody>
</table>

### SECTION-3

**HAZARDS IDENTIFICATION**

#### EFFECT OF OVER EXPOSURE

- **Inhalation**: Vapour or mist can irritate the nose, throat and lungs and cause headache & nausea.
- **Skin Contact**: Irritating to skin upon repeated or prolonged contact.
- **Eye Contact**: Moderately irritating to eyes.
SECTION-4
FIRST-AID MEASURES

• Inhalation : Move subject to fresh air.
• Eye & Skin Contact : Flush eyes with a large amount of water for at least 15 minutes. Consult a physician, if irritation persists.
• Ingestion : If swallowed, dilute by giving two glasses of water or drink. Consult a physician. Never give anything by mouth to an unconscious person.

SECTION-5
FIRE FIGHTING MEASURES

• Flash Point : >40°C
• Auto Ignition Point : Data not available
• Lower Explosion Limit (%) : 1 %
• Upper Explosion Limit(%) : 6 %
• Unusual Fire & Explosion Hazards : Flamability rating 2 (moderate)

• Nepa Harard Signals : Health - 1
  Flammability - 2
  Reactivity - 0

• Hazardous Decomposition Products : Oxides of Carbon & Nitrogen

• Extinguishing Media : Carbon Dioxide, Dry Chemical Foam and/or water Fog
  Fire fighters must wear self-contained Breathing apparatus or air masks.
  Containers exposed to fire should be kept cool with water spray.

SECTION-6
ACCIDENTAL RELEASE MEASURES

• Steps to be taken in case material is released or spilled
Keep spectators away. Floor may be slippery, use care to avoid falling. Dike and contain spill with inert material (e.g. sand, earth). Transfer liquid to containers for recovery or disposal and solid diking material to separate containers for disposal. Keep spills and cleaning run-offs out of municipal sewers and open bodies of water.

**SECTION-7**
**HANDLING AND STORAGE**

Store in cool, clean, ventilated, fire proof area. Keep away from heat, sparks, open flames & incompatible materials. Protect containers against physical Damage. Keep containers closed when not in use. Empty containers may contain product residue including flammable vapours.

**SECTION-8**
**EXPOSURE CONTROLS / PERSONAL PROTECTION**

- Ventilation Type : Sufficient ventilation in volume and pattern should be provided to keep air contaminant concentration below WES/TWA limits.
- Respiratory Protection : Class AUS 1 half face respiratory with Type-A Organic vapour filter and class P-1 Particulate filter.
- Protective Gloves : Gloves of Neoprene or Nitrile rubber.
- Eye Protection : Solvent resistant safety eye wear.

**SECTION-9**
**PHYSICAL & CHEMICAL PROPERTIES**

- Appearance : Smooth & uniform liquid
- Odour : Mild odour
- Viscosity : 80 Secs. to 150 Secs. in B-4 FC
- Flash Point : Above 40°C
## SECTION-10
### STABILITY AND REACTIVITY

- **Stability**: Stable
- **Conditions to Avoid**: Elevated temperatures, open flame arc or sparks.
- **Hazardous Decomposition Products**: Oxides of carbon & nitrogen
- **Hazardous Polymerization**: Will not occur.
- **Incompatibility (Materials to avoid)**: Stoving oxidizers, acids & alkalies.

## SECTION-11
### TOXICOLOGICAL INFORMATION

No toxicity data are available for the products. The effect of over exposure shown in Section 2.0 are based on information about similar materials. These are white spirit based paints. Toxicological Information for white spirits provided in Section 2.0.

## SECTION-12
### ECOLOGICAL INFORMATION

These are white spirit based paints. Ecological information for white spirit are as follows:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Premium</th>
<th>Economy</th>
<th>Semi Glossy Matt Enamels &amp; Primers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity</td>
<td>0.90 - 1.15</td>
<td>0.88 - 1.00</td>
<td>1.25 - 1.50</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Insoluble</td>
<td>Insoluble</td>
<td>Insoluble</td>
</tr>
<tr>
<td>% Volatile (by Wt.)</td>
<td>40 - 50 %</td>
<td>55 - 60 %</td>
<td>25 - 40 %</td>
</tr>
<tr>
<td>VOC (ASTM D3960 – 05)</td>
<td>440 - 480 gm/lit.</td>
<td>520 - 550 gm/lit.</td>
<td>320 - 400 gm/lit.</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1)</td>
<td>Greater than 1</td>
<td>Greater than 1</td>
<td>Greater than 1</td>
</tr>
</tbody>
</table>
Biodegradability / Physico chemical Reactivity Biodegradability : Not established. Toxic to fish / aquatic organisms & wild life. Do not discharge into lakes, streams, ponds & ground water supplies.

**SECTION-13**
**Disposal Considerations**

Incinerate the liquid and the contaminated diking material at permitted facility according to local, state and Federal regulations.

**SECTION-14**
**Transport Information**

Chemical name of the Family : Paint
Shipping name : Flammable Liquid

These are all white spirit based paints. Transport information for white spirit are as follows :

Shipping Name : Flammable liquid n.o.s. (contains petroleum distillates)
UN No. : 1268
- Class - 3
- Letter - F
- Packing group – III
- Labelling No. 3

**SECTION-15**
**Regulatory Information**

Contact us for the latest regulatory information of the products.

**SECTION-16**
**Other Information**

- MSDS Created Date : September 22, 2007
- Revised Date : 19-07-2008
- Titanium dioxide, colouring pigments & Extenders when formulated, as above, do
not pose dust hazards unless sanding or grinding of the dry coating takes place.

The information contained in the Material Safety Data Sheet is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Recipients were advised to confirm in advance of need that the information is correct, applicable and suitable to their circumstances.

July 19, 2008