MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: Mowital

Synonyms: B 16 S, B 18 S, B 20 H, B 30 T, B 30 H, B 30 HH, B 45 M, B 45 H, B 60 T, B 60 H, B 60HH, B 75 H, SB 45 M, SB 60 H, SB 60 HH, SB 70 HH

Manufacturer Name: Kuraray America, Inc.
Emergency Telephone: +001-800-423-9762
2625 Bay Area Blvd, Suite 300
Houston, TX 77058-1551
Tel: +001-800-423-9762

Intended Use: Additive/binder for primer. Coatings. Lacquer. Printing Ink
Contact Person: For MSDS Info: +001-800-423-9762

2 HAZARDS IDENTIFICATION

Emergency Overview
Physical State: Powder
Color: Colorless
Odor: Odorless

Low hazard for usual industrial or commercial handling by trained personnel.

Dust may irritate the eyes and the respiratory system.

Potential Health Effects

Inhalation: Dust may irritate throat and respiratory system and cause coughing.
Eye Contact: Dust may irritate the eyes. Exposed individuals may experience eye tearing, redness, and discomfort.

Skin Contact: Prolonged contact may cause dryness of the skin.

Ingestion: May cause discomfort if swallowed.

Target Organ(s): | Eye | Lung |

Potential Physical / Chemical Effects: Fine particles may form explosive mixtures with air.

OSHA Regulatory Status:

Environment: The product is not expected to be hazardous to the environment.

3 COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>†Polyvinyl butyral</td>
<td>68648-78-2</td>
<td>&gt; 97.5%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. † This chemical is hazardous according to OSHA/WHMIS criteria.

4 FIRST AID MEASURES

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If irritation occurs, get medical assistance.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops and persists.

Ingestion: Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

Extinguishing Media: Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable Extinguishing Media: None.

Special Fire Fighting Procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

Unusual Fire & Explosion Hazards: The product may form dust and can accumulate electrostatic charges, which may cause an electrical spark (ignition source). Use proper grounding procedures.
Hazardous Combustion Products: Carbon Oxides

Protective Measures: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Flammability Class: NFPA Rating Fire = 1. Materials that must be preheated before ignition can occur. Materials that must be preheated before ignition can occur.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. For personal protection, see section 8 of the MSDS.

Spill Cleanup Methods: Avoid dust formation. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container. Vacuums used for this purpose should be equipped with HEPA filters. Do not use compressed air when cleaning. For waste disposal, see section 13 of the MSDS.

Environmental Precautions: Avoid discharge into drains, water courses or onto the ground.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

7 HANDLING AND STORAGE

Handling: Use work methods which minimize dust production. Avoid inhalation of dust and contact with skin and eyes. Periodically clean work and storage areas to prevent dust accumulation. Take precautionary measures against static discharges.

Storage: Keep container tightly closed. Store in cool, dry place.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Source</th>
<th>Type</th>
<th>Exposure Limits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyvinyl butyral (Inhalable particles.)</td>
<td>US. ACGIH TLV</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>General dust</td>
</tr>
<tr>
<td>Polyvinyl butyral (Respirable particles.)</td>
<td>US. ACGIH TLV</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>General dust</td>
</tr>
<tr>
<td>Polyvinyl butyral (Respirable dust.)</td>
<td>US. OSHA Z-1 PEL TWA</td>
<td>5 mg/m³</td>
<td>General dust</td>
<td></td>
</tr>
<tr>
<td>Polyvinyl butyral (Total dust.)</td>
<td>US. OSHA Z-1 PEL TWA</td>
<td>15 mg/m³</td>
<td>General dust</td>
<td></td>
</tr>
</tbody>
</table>

Engineering Controls: Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Ventilate as needed to control airborne dust. Use explosion-proof ventilation equipment if airborne dust levels are high.
Respiratory Protection: Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure air supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

Eye Protection: Wear safety glasses with side shields (or goggles).

Hand Protection: Wear chemical-resistant gloves. Contact glove manufacturer for specific information. Rubber or plastic.

Skin Protection: Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9 PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Physical State</td>
<td>Powder</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>135°C (275°F) - 149°C (300°F)</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability Limit - Upper (%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability Limit - Lower (%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.1 (20°C)</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Solubility (Other)</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition Coefficient (n-Octanol/water)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>&gt;380°C (716°F)</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Percent Volatile</td>
<td>&lt;2.5 %w/w</td>
</tr>
</tbody>
</table>

10 STABILITY AND REACTIVITY

Stability: This product is stable under expected conditions of use.

Conditions to Avoid: None known.

Hazardous Decomposition Products:
At Elevated Temperatures: Carbon Oxides

Possibility of Hazardous Reactions: Will not occur.

11 TOXICOLOGICAL INFORMATION

Specified Substance(s)
Acute Toxicity:
Listed Carcinogens: None.

Product Information
Acute Toxicity:
Test Results:
Other Acute: Dust may irritate the eyes and the respiratory system.

Chronic Toxicity: No data recorded.

12 ECOLOGICAL INFORMATION

Ecotoxicity: The product is not expected to be hazardous to the environment.

Mobility: The product is insoluble in water.

Persistence and Degradability: No data available.

Bioaccumulation Potential: No data available on bioaccumulation.

13 DISPOSAL CONSIDERATIONS

General Information: Dispose of waste and residues in accordance with local authority requirements.

Disposal Methods: Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

Container: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14 TRANSPORT INFORMATION

DOT Not regulated.
TDG Not regulated.
IATA Not regulated.
IMDG Not regulated.
15 REGULATORY INFORMATION

Canadian Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS Classification: None.

Mexican Dangerous Statement: This product is dangerous according to Mexican regulations.

Inventory Status

This product or all components are listed or exempt from listing on the following inventory: TSCA, DSL

US Regulations

CERCLA Hazardous Substance List (40 CFR 302.4): None.

SARA Title III

- X Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

Section 313 Toxic Release Inventory (40 CFR 372): None.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):

Drug Enforcement Act:

TSCA

TSCA Section 4(a) Final Test Rules & Testing Consent Orders:
TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E):
TSCA Section 5(e) PMN-Substance Consent Orders:
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D):

State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

Massachusetts Right-To-Know List: None.

Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)):

Minnesota Hazardous Substances List: None.

New Jersey Right-To-Know List: None.

Pennsylvania Right-To-Know List: None.

Rhode Island Right-To-Know List: None.
# OTHER INFORMATION

## HAZARD RATINGS

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Fire Hazard</th>
<th>Instability</th>
<th>Special Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFPA</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Flammability</th>
<th>Physical Hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Personal Protection codes: B - Safety Glasses, Gloves

HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

Issued by: Kuraray Europe

Issue Date: 27-Jun-2008

Supersedes Date: 06-May-2007

SDS No.: 1004262