Material Safety Data Sheet

Alumina Trihydrate

Date of Preparation: 12/10/96

Revision: 5/6/97

Section 1 - Chemical Product and Company Identification

Product Name: Alumina Trihydrate


General Use: Refractory material, abrasive, fire retardant and smoke suppressant for plastics, ceramic material.

Manufacturer: The R.J. Marshall Company
26776 W. Twelve Mile Rd.
Southfield, MI 48034
Phone (248) 353-4100, Fax (248) 948-6460

Emergency Phone: (800) 424-9300
Date Revised: 5/6/97
Preparer: Anne M. Dame

Section 2 - Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS Number</th>
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<tr>
<td>Alumina Trihydrate</td>
<td>21645-51-2</td>
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Exposure Limits:

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<th>Ingredient</th>
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<th>PEL</th>
<th>ACGIH</th>
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<tr>
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<td>15 mg/m³</td>
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<td>10 mg/m³</td>
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Section 3 - Hazards Identification

Potential Health Effects

Primary Entry Routes: Inhalation, Eye, Ingestion

Acute Effects

Inhalation: Inhalation of high concentrations of this inert nuisance particulate can result in mild irritation of the respiratory tract.

Eye: May cause irritation through mechanical abrasion.

Skin: May cause irritation through mechanical abrasion.

Ingestion: Unlikely.

Carcinogenicity: Neither this product nor any of its components are considered carcinogenic by OSHA, IARC, NTP, ACGIH.

Medical Conditions Aggravated by Long-Term Exposure: n/a
Section 4 - First Aid Measures

Inhalation: If overcome by high dust concentrations, remove to a ventilated area.
Eye Contact: Flush eyes thoroughly for 15 minutes taking care to rinse under eyelids. Do not scrub.
Abrasion may cause irritation. If discomfort continues, continue to wash with water. If irritation persists, consult a physician.
Skin Contact: Wash skin thoroughly with soap and water for at least 15 minutes. Consult a physician if irritation persists.
Ingestion: If swallowed, dilute with large amounts of water. Do not induce vomiting. Consult a physician immediately.
After first aid, get appropriate in-plant, paramedic, or community medical support.
Note to Physicians: n/a
Special Precautions/Procedures: n/a

Section 5 - Fire Fighting Measures

Flash Point: None known.
Flash Point Method: n/a
Burning Rate: Not determined.
Autoignition Temperature: Not determined.
Flammability Classification: n/a
Extinguishing Media: Water spray, carbon dioxide or other dry chemical.
Unusual Fire or Explosion Hazards: None known.
Hazardous Combustion Products: None.
Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.
Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

Spill/Leak Procedures: Collect solids. Recycle if possible.
Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - Handling and Storage

Handling Precautions: Avoid generating dust during handling.
Storage Requirements: Keep material dry.
Section 8: Exposure Controls / Personal Protection

Engineering Controls:
Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessel, or storage tanks), wear an SCBA. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and garments to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye and face protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9: Physical and Chemical Properties

Physical State: White powder
Appearance and Odor: White odorless powder
Odor Threshold: n/a
Vapor Pressure: n/a
Vapor Density (Air=1): n/a
Formula Weight: n/a
Density: 5-80 lb/ft³
Specific Gravity (H₂O=1, at 4 °C): 2.4
pH: 8.5-10.2 (20% solution)

Water Solubility: Insoluble
Other Solubilities: Soluble in concentrated acids and alkalies
Boiling Point: n/a
Freezing/Melting Point: 2038°C
Viscosity: n/a
Refractive Index: n/a
Surface Tension: n/a
% Volatile: n/a
Evaporation Rate: n/a
Section 10: Stability and Reactivity

Stability: This product is stable at room temperature in closed containers under normal storage and handling conditions.
Polymerization: Hazardous polymerization cannot occur.
Chemical Incompatibilities: None known.
Reactivity with Heat: When exposed to fire or heat, hydrated alumina loses its water of crystallization beginning at 200°C.
Hazardous Decomposition Products: n/a

Section 11: Toxicological Information

Toxicity Data:

Eye Effects: Nuisance dust. May cause irritation through mechanical abrasion. Flush with water for at least 15 minutes. Consult physician if irritation is persistent.

Skin Effects: Nuisance dust. May cause irritation through mechanical abrasion. Wash skin thoroughly with soap and water.

Acute Inhalation Effects: Nuisance dust. Overexposure to dust may cause irritation to the respiratory tract. Should this occur, remove affected individual to fresh air. If symptoms persist, consult a physician.

Acute Oral Effects: None known.
Chronic Effects: None known.

Carcinogenicity: Neither this product nor any of its components are considered carcinogenic by OSHA, IARC, NTP, ACGIH.

Section 12: Ecological Information

No information available.

Section 13: Disposal Considerations

Disposal: Recycle if possible or landfill. This substance is inert and does not require special disposal methods. Follow applicable Federal, state, and local regulations.
Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101): This product is not classified as dangerous under the transport regulations for road, rail, sea, or air transport.

Section 15 - Regulatory Information

EPA Regulations:
RCRA Hazardous Waste Number: Not listed (40 CFR 261.33)
RCRA Hazardous Waste Classification: Not classified
CERCLA Hazardous Substance (40 CFR 302.4): Not listed
SARA Toxic Chemical (40 CFR 372.65): Not listed
SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed

OSHA Regulations:
Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed

TSCA
This substance or all of its components are on the Chemical Substances Inventory of the Toxic Substance Control Act (TSCA Inventory [USA]). Please note that this product is not subject to any legal reporting requirements under these acts.

INTERNATIONAL REGULATIONS
Canadian Domestic Substances List: Components of this product are listed on the Canadian DSL.
European Community: Components of this product are listed on ECOIN, the European Core Inventory (EC) market.

Section 16 - Other Information

Prepared By: Anne M. Dame
Revision Notes: 2/6/97
Section 16. Other Information Continued

Product Grades Available from the R. J. Marshall Company (this list may be incomplete):

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