

MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

MICROSTAR® Model & Die Materials

Product Name(s): Liquid Base Stone, Thixo Die Stone, Articulator Plaster

Product Use: Fluid mixture that creates accurate bases for pinned die models

Manufacturer/Supplier: Jensen Dental
50 Stillman Road
North Haven, CT 06473
USA

Emergency Telephone: 800-243-2000

Revised: May 21st, 2009

SECTION 2 – COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

COMPONENT		%RANGE	CAS#	*PEL/OSHA (mg/m ³)	**TLV/ACGIH (mg/m ³)
CaSO ₄ ·0.5H ₂ O	Calcium Sulfate Hemihydrate	90-100	10034-76-1	15R	10I
CaCO ₃	Calcium Carbonate	0-10	1317-65-3	15I/5R	N/A

*Taken from the Permissible Exposure Limits for Air Contaminants established by OSHA CFR 29 1910.1000 Subpart Z – Toxic and Hazardous Substances

**Taken from the ACGIH Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices

R = *Respirable Particulate Mass* TLVs® (RPM-TLVs) for those materials that are hazardous when deposited in the gas-exchange region.

I = *Inhalable Particulate Mass* TLVs® (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.

SECTION 3 - HAZARD IDENTIFICATION

Calcium Carbonate: Irritation eyes, skin, respiratory system; cough

Calcium Sulfate Hemihydrate: Irritation eyes, skin, upper respiratory system; conjunctivitis; rhinitis, epistaxis (nosebleed)

SECTION 4 - FIRST AID MEASURES

Inhalation: Breathing difficulty caused by inhalation of dust requires immediate removal to fresh air. There are no known cases in which a person stopped breathing as a result of exposure. If breathing has stopped, perform artificial respiration and obtain medical assistance.

Ingestion: Swallowing this material can be treated by having the affected person rinse their mouth out with water, and then drink large quantities of water. If this method proves ineffective, immediately obtain medical assistance.

Skin: Skin contamination with dust or powder can be removed by rinsing with warm water. Obtain medical help if irritation develops and persists.

Eyes: Dust or powder should be flushed from the eyes with plenty of clean running water. Obtain medical help if irritation persists

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SECTION 5 - FIRE FIGHTING MEASURES

Flash Point: N/A

Explosive Limits: N/A

Extinguishing Media: Use fire fighting measures that suit the environment: Foam, CO₂, extinguishing powder, or water jet.

Fire & Explosion Hazards: Fire can cause release of nitrogen oxides (NO_x) and ammonia (NH₃). Calcium sulfate mixed with phosphorous will ignite at high temperatures. At high temperatures, a violent or explosive reaction can occur when calcium sulfate is mixed with aluminum powder. An explosion can result from an exothermic reaction when calcium sulfate is mixed with diazomethane vapor.

Special Fire Fighting Procedures: this material becomes airborne as a respirable particulate during a fire situation, pressure-demand self-contained breathing apparatus must be worn by firefighters or any other persons potentially exposed to the airborne dust. Fire can cause release of sulfur trioxide (SO₃)

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Steps to Be Taken If Material Is Released or Spilled: Establish a restricted entry zone based on the severity of the spill. Persons entering the restricted zone must wear adequate respiratory protection and protective clothing appropriate for the severity of the spill. If the spill is large, cleanup should be conducted with a vacuum system, otherwise mechanical methods will be efficient. The addition of water to the spill area will minimize dust levels. Caution should be taken to minimize airborne generation of powder or dust and avoid contamination of air and water. Depending upon the quantity of material released, fine powder or dust spills to the environment may require reporting to the National Response Center at (800) 424-8802 as well as the State Emergency Response Commission and Local Emergency Planning Committee.

SECTION 7 - HANDLING AND STORAGE

Handling: Wear an approved respirator when handling this product (see section 8).

Storage: Store material in a sealed container, in a cool dry area.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Ventilation and Engineering Controls: Whenever possible, the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust. Where utilized, pickups on flexible ventilation lines should be positioned as close to the source of airborne contamination as possible. Disruption of the airflow in the area of a local exhaust inlet, such as by a cooling fan, should be avoided. Ventilation equipment should be checked regularly to ensure it is functioning properly. Ventilation training is recommended for all users. Ventilation systems should be designed and installed by qualified professionals.

Respiratory Protection: When potential exposures are above the occupational limits shown in Section 2, approved respirators must be used as specified by an Industrial Hygienist or other qualified professional. Respirator users must be medically evaluated to determine if they are physically capable of wearing a respirator. Quantitative and/or qualitative fit testing and respirator training must be satisfactorily completed by all personnel prior to respirator use. Users of any style respirator must be clean- on those areas of the face where the respirator seal contacts the face. Exposure to unknown concentrations of dust requires the wearing of a pressure-demand airline respirator or pressure-demand self-contained breathing apparatus. Pressure-demand airline respirators are recommended when performing jobs with high potential exposures such as changing filters in a bag house air cleaning device.

Housekeeping: Vacuum and wet cleaning methods are recommended for dust removal. Be certain to de-energize electrical systems, as necessary, before beginning wet cleaning. Vacuum cleaners with high efficiency particulate air (HEPA) filters are the recommended type. The use of compressed air or brooms to remove dusts must be avoided as such an activity can result in unnecessary short-term elevated exposures to airborne dusts.

Maintenance: During repair or maintenance activities the potential exists for exposures to constituents in excess of the occupational standards. Under these circumstances, protecting workers can require the use of specific work practices or procedures involving the combined use of ventilation, wet and vacuum cleaning methods, respiratory protection, decontamination, special protective clothing i.e. lab coats, and when necessary, restricted work zones.

Other Protective Equipment: No other special protective equipment or clothing is required when handling this material

Protective Gloves: Not required

Eye Protection: Wear safety glasses (goggles)

Recommended Monitoring Procedures:

Environmental Surveillance: Exposure to airborne materials should be determined by having air samples taken in the employee breathing zone, work area, and department. The frequency and type of air sampling should be as specified by an Industrial Hygienist or other qualified professional. Air sample results should be made available to employees.

Medical Surveillance: Persons exposed to airborne concentrations of this material should be included in a periodic medical surveillance program. The program should include examination of the skin and respiratory system. Non-specific findings of skin rash, skin granulomata, or respiratory signs or symptoms may indicate a reaction to this material.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Color: White, blue, yellow, brown **Melting Range (°C):** >1400 **Density (g/cm³):** 2.6 **Boiling Point:** N/A

Evaporation Rate: N/A **Freezing Point:** N/A **Odor:** none **pH-value (10 g/l) at 20°:** 5-7 (suspension)

Physical State: solid **Radioactivity:** N/A **Solubility:** slightly soluble in water; 2 g/l **Sublimes At:** N/A

Vapor Density (Air = 1): N/A **Vapor Pressure (mmHg):** N/A **% Volatiles by Volume:** none

Settled Apparent Density at 20°C: 1100-1200 kg/m³

SECTION 10 - STABILITY AND REACTIVITY

General Reactivity: This material is stable, may solidify if contacted by water

Non-compatibility With Other Substances: Strong acids and oxidizing agents

Hazardous Combustion Products: Sulfur trioxide or SO₃ mist @ temp > 1000°C. **Hazardous Polymerization:** Will not occur.

SECTION 11- TOXICOLOGICAL INFORMATION

PRIMARY ROUTES OF EXPOSURE:

Inhalation: Airborne exposure in excess of the constituent's listed values can occur upon opening of the package, mixing stone, and/or any activities that cause the material to become airborne i.e. abrasive cutting, grinding, crushing, or otherwise abrading the surface of this material in its' solid form, which generates finely divided particles. The potential for exposures may also occur during repair or maintenance activities on contaminated equipment such as: maintenance or repair of air cleaning equipment, structural renovation, etc.

Ingestion: There are no known cases of illness resulting from ingestion of this material. Obstruction can occur due to stone hardening from moisture absorption. Ingestion can occur from hand, clothing, food, and drink contact with product dust, during hand to mouth activities such as eating, drinking, smoking, nail biting, etc. This product is not intended for internal consumption. As a standard hygiene practice, hands should be washed before eating or smoking.

Skin: Skin contact with this material may cause, in some sensitive individuals, dermatitis/irritation, due to the response from calcium sulfate. Skin abrasion may cause irritation. See Section 4 for additional information.

Eyes: Injury can result from particulate irritation or mechanical injury to the eyes by dust or particulate. Exposure may result from direct contact with airborne particulate (dust or powder) or contact to the eye of contaminated hands or clothing.

EFFECTS OF OVEREXPOSURE: The potential health effects listed below are confined to constituents which are in sufficient concentrations within the product to be significant.

Acute (immediate or near-term health effects): In general, the airborne dust/powder from this product can cause irritation to the skin, eyes, nose, throat, lungs, and mucous membranes.

LD50 values for Calcium sulfate hemihydrates: Oral LD50 > 2000 mg/kg (rat)

Chronic (long-term health effects): Prolonged or repeated inhalation may produce unspecified effects on the lungs.

Carcinogenic References:

NTP: No

IARC: No

NIOSH: No

ACGIH: No

Medical Conditions Aggravated By Exposure: Persons with impaired pulmonary function, airway diseases, or conditions such as asthma, emphysema, chronic bronchitis, etc. may incur further impairment, if dust or powder is inhaled.

SECTION 12- ECOLOGICAL INFORMATION

This material is slightly soluble in water. Inorganic salts are not biodegradable. There is no information available on the ecological effects of this material.

Water hazard class according to EC guidelines: Water hazard class 1(Self-assessment): generally not hazardous for water

SECTION 13- DISPOSAL CONSIDERATIONS
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Waste Management: Material and/or /packaging, containing powder, should be sealed inside a plastic bag when disposed of. Avoid washing down drains as material can plug drain. Small quantities can be disposed with household garbage. Comply with Federal, State, and local regulations.

SECTION 14 - TRANSPORT INFORMATION

There are no U.S. Department of Transportation hazardous material regulations that apply to the packaging and labeling of this product as shipped

SECTION 15- REGULATORY INFORMATION

OSHA Hazard Communication Standard, 29 CFR 1910.1200: Components of these products are considered hazardous ingredients.

Wastewater: Wastewater regulations can vary considerably. Contact your local and state governments to determine their requirements.

Other Regulations, Limitations and Prohibitive Regulations:

German UVV: Protection against mineral dust which is harmful to health.

California Proposition 65: This product does not contain any constituents listed under California Proposition 65

SECTION 16 - OTHER INFORMATION

Disclaimer:

The information herein is supplied in the belief it is from accurate and reliable sources. The information is supplied to assist the dental professional and no warranty is made with respect to the accuracy of information on the suitability of recommendation. This MSDS has been revised following the guidelines outlined in CFR 1910-1200 "Material Safety Data Sheets."

IMPORTANT: If you have any questions or require additional information regarding the materials described in this Material Safety Data Sheet please contact Jensen Dental at 1-(800) 243-2000.