



# MATERIAL SAFETY DATA SHEET

## 1. COMPANY AND PRODUCT IDENTIFICATION

**DUNCAN ENTERPRISES**  
5673 East Shields Avenue  
Fresno, CA 93727  
559-291-4444  
559-291-9444 (Fax)

### EMERGENCY TELEPHONE NUMBERS

Health Emergency: 559-291-4444 7:00 am – 3:30 pm  
Pacific Standard Time  
Spill and Off-Hour  
Health Emergencies: 800-424-9300 U.S. and Canada  
703-527-3887 Outside U.S. and  
Canada (Collect)

**Product Name:** DUNCAN CRYSTALSTONE™ GLAZES  
**Product Type:** Leaded Ceramic Glaze

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

The ingredients in this formulation are a trade secret. All ingredients in the formula are non-hazardous, unless specified in Sections 3 and 15.

## 3. HAZARDS IDENTIFICATION

### HMIS Hazard Ratings for Product

Health:	3*	0 = Minimal
Flammability:	0	1 = Slight
Reactivity:	0	2 = Moderate
Personal Protection:	F (if spraying)	3 = Serious
		4 = Severe
		* = Chronic Effects

Hazardous Components	OSHA PEL	ACGIH TLV	CAS #	%
Silica, Crystalline-Quartz	1.5 mg/m <sup>3</sup>	1.0 mg/m <sup>3</sup>	14808-60-7	Up to 8
Cobalt Oxide*	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>	1307-96-6	< 1%

\*Present in Crystalstone 20088 only

Frit is a fused silicate glass substance. The components of this glass product listed below are from the inventory of potentially hazardous substances referenced by FED/OSHA in 29 CFR 1910.1200.

Components	OSHA PEL	ACGIH TLV
Lead compounds, as Pb	0.05 mg/m <sup>3</sup>	0.15 mg/m <sup>3</sup>
Barium compounds, as Ba	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>

### Other Information

Frits are produced from the chemical reactions which occur during the high temperature smelting of various raw materials to form a molten glass. This glass is rapidly cooled and then ground to produce powdered frit. The lead listed for this product is incorporated into the glass structure of the frit, chemically reacted in the form of silicates of other essentially insoluble complexes. Exposure to the hazardous ingredients can occur if spray mist is inhaled or glaze ingested and the ingredient dissolves out of the glass. Because of the chemical stability of frit and its resistance to attack by acids or alkali, this is anticipated to occur very slowly. This product contains the following component(s) that require reporting under Section 313 of the Emergency Planning and Community Right-to-Know Act, also known as Title III of SARA (Superfund Amendments and Reauthorization Act), and 40 CFR Part 372:

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### 3. HAZARDS IDENTIFICATION (Continued)

COMPONENT	PERCENT PRESENT <sup>(a)</sup>
Lead compounds	Up to 28% (as PbO)
Barium compounds	Up to 5 % (as BaO)

(a) The percent reported is based on the theoretical composition of this frit. While existing in theory, the component(s) mentioned are only present as part of FRIT (CAS #65997-18-4\*).

### 4. FIRST AID MEASURES

**Eye Contact:** Flush eyes with large amounts of water until irritation subsides. Consult a physician.

**Skin Contact:** Wash affected skin areas thoroughly with soap and water. Consult a physician if irritation persists.

**Inhalation:** Move subject to fresh air; if breathing is difficult give oxygen. Consult a physician.

**Ingestion:** If swallowed, consult a physician. Induce vomiting if prescribed under medical supervision. Never give anything by mouth to an unconscious person.

### 5. FIRE FIGHTING MEASURES

<b>Autoignition Temperature:</b>	Nonflammable
<b>Flash Point:</b>	Not Applicable
<b>Upper Explosive Limit (%):</b>	Not Applicable
<b>Lower Explosive Limit (%):</b>	Not Applicable
<b>Extinguisher Media:</b>	Product is nonflammable – Use extinguishing media appropriate for surrounding fire
<b>Special Firefighting Procedures:</b>	Not Applicable
<b>Fire &amp; Explosion Hazards:</b>	Not Applicable
<b>NFPA Flammability Hazard Class:</b>	0 = Insignificant

### 6. ACCIDENTAL RELEASE MEASURES

**Spill or Leak Procedures:** Uncontaminated material may be recovered and re-used. If contaminated scoop, vacuum, or wash into a receptacle for disposal.

### 7. HANDLING AND STORAGE

**Handling:** When product in use, do not eat, drink, or smoke. Wash hands immediately after use. Keep sealed. **Keep out of reach of children. Do not use this product if pregnant or contemplating pregnancy.**

**Storage:** Protect containers against physical damage; store in dry area away from feed and food products.

### 8. EXPOSURE CONTROL AND PERSONAL PROTECTION

**Respiratory Protection:** If spraying, do not inhale mist. Use respirator that is NIOSH approved for sprays and mists.

**Ventilation:** Local exhaust ventilation recommended

**Mechanical (General):** Recommended when spraying

**Protective Gloves:** Not needed for foreseeable conditions of use

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8. EXPOSURE CONTROL AND PERSONAL PROTECTION (Continued)

**Eye Protection:** Wear safety glasses with side shields  
**Other Protective Clothing Or Equipment:** None needed  
**Work/Hygienic Practices:** Good hygiene practices should be followed. When product in use, do not eat, drink, or smoke. Wash hands immediately after use. Keep sealed. **Keep out of reach of children. Do not use this product if pregnant or contemplating pregnancy.**

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance / Physical Description:** Colored liquid. Odorless  
**pH:** 7 - 10  
**Boiling Point:** 212°F  
**Freezing Point:** 32°F  
**Melting Point:** 1800°F  
**Solubility in Water:** Insoluble  
**Specific Gravity (Water = 1):** 1.5 – 1.8  
**Bulk Density:** 12.5 – 15.0 lb / gal  
**Evaporation Rate (Water = 1):** 1  
**Vapor Pressure:** 17.5 mm Hg @ 20°C (68°F)  
**Autoignition Temperature:** Not Applicable  
**Flash Point:** Not Applicable  
**Oxidizing Properties:** Not Applicable

10. STABILITY AND REACTIVITY

**Stability:** Stable  
**Incompatible Materials:** None known  
**NFPA Reactivity Hazard Class:** 0 = Insignificant  
**Hazardous Decomposition Products:** Avoid fumes when firing  
**Hazardous Polymerization:** Will not occur  
**Conditions to Avoid:** None Known

11. TOXICOLOGICAL INFORMATION

**Principal Routes of Absorption:** Inhalation and ingestion  
**Effects of Overexposure:** Of primary concern is chronic overexposure to lead. Initial warning properties are poor. Prolonged or repeated inhalation and/or ingestion of lead containing frit dust may result in lead poisoning, with symptoms of weight loss, stomach cramps, loss of coordination and joint and muscle pain. Lead can cause kidney damage and delayed effects involving the blood, gastrointestinal, nervous, and reproductive systems. Excessive exposure to lead dusts during pregnancy can result in neurological disorders in infants. For additional information consult OSHA lead standard 29 CFR 1910.1025.

Metal fumes and/or fluoride containing vapors from firing may cause lung inflammation and injury in terms of hours with symptoms of chest pains, chills, cough, headache, and diarrhea.

Prolonged contact with frit dust can be very irritating to the eyes and/or skin. High dust levels can be irritating to the respiratory tract.



**11. TOXICOLOGICAL INFORMATION (Continued)**

With adequate ventilation, dust control, and good personal hygiene, symptoms of overexposure should not occur. Advise regular medical monitoring of employees by a physician competent in industrial health.

**Carcinogenicity:** In IARC Supplement 7, inorganic lead compounds are given a 2B rating which indicates “sufficient evidence” for carcinogenicity to animals and “inadequate evidence” for carcinogenicity to humans.

**12. ECOLOGICAL INFORMATION**

No Data Available

**13. DISPOSAL CONSIDERATIONS**

**Waste Disposal Method:** Follow Federal or State and Local regulations for disposal. Lead is listed in US-EPA CFR 40, Part 261.24. Testing of the waste may be required to determine status under the hazardous waste regulations.

**14. TRANSPORT INFORMATION**

**U.S. Department of Transportation Information**

**DOT Shipping Name:** Consumer Commodity ORM-D Glazes or Stains  
**DOT Hazard Class:** OA/OG 88690 Sub. 1

**15. REGULATORY INFORMATION**

This product contains lead and barium compounds, which require reporting under Section 313 of the Emergency Section of the Emergency Planning and Community Right-To-Know Act, also known as Title III of the SARA (Superfund Amendments and Reauthorization Act), and 40 CFR Part 372:

Products bearing the Caution Label are certified to be properly labeled in a program of toxicological evaluation by a nationally recognized toxicologist. The products are certified by the toxicologist to be labeled in accordance with the chronic hazard labeling standard ASTM D-4236.

**California Proposition 65:**

**WARNING:** This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

**16. OTHER INFORMATION**

**Table of Abbreviations**

<b>ACGIH</b>	American Conference of Governmental Industrial Hygienists
<b>ANSI</b>	American National Standards Institute
<b>ASTM</b>	American Society for Testing Materials
<b>°C</b>	Degrees Centigrade
<b>CAS</b>	Chemical Abstract Service
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation and Liability Act
<b>CFR</b>	Code of Federal Regulations



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**16. OTHER INFORMATION (Continued)**

**Table of Abbreviations (Continued)**

<b>DOT</b>	Department of Transportation
<b>EPA</b>	Environmental Protection Agency
<b>°F</b>	Degrees Fahrenheit
<b>FDA</b>	Food & Drug Administration
<b>Hg</b>	Mercury
<b>HMIS</b>	Hazardous Materials Identification System
<b>IARC</b>	International Agency for Research on Cancer
<b>LD</b>	Lethal Dose
<b>mg / kg</b>	Milligram per kilogram
<b>mm</b>	Millimeter
<b>MSDS</b>	Material Safety Data Sheet
<b>MSHA</b>	Mine Safety and Health Administration
<b>N / A</b>	Not Applicable
<b>NFPA</b>	National Fire Protection Association
<b>NIOSH</b>	National Institute for Occupational Safety and Health
<b>NTP</b>	National Toxicology Program
<b>OSHA</b>	Occupational Safety and Health Administration
<b>ppm</b>	Parts per million
<b>SARA</b>	Superfund Amendment and Reauthorization Act
<b>STEL</b>	Short-Term Exposure Limit
<b>TSCA</b>	Toxic Substances Control Act
<b>TWA</b>	Time - Weighted Average
<b>U.N.</b>	United Nations
<b>WHMIS</b>	Workplace Hazardous Materials Information System
<b>&gt;</b>	Greater Than
<b>&lt;</b>	Less Than

**Creation Date:** 07/87  
**Revision Date:** 08/20/07  
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**Disclaimer**

The information given and the recommendations made herein apply to our product(s) alone and not combined with any other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guarantee of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.