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 7:00 am – 3:30 pm U.S. and Canada
Outside U.S. and Canada (Collect)

Product Name: DUNCAN CRYSALTONE™ 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
Silica, Crystalline-Quartz 1.5 mg/m³ 1.0 mg/m³ 14808-60-7 Up to 8
Cobalt Oxide* 0.1 mg/m³ 0.1 mg/m³ 1307-96-6 < 1%
*Present in Crystaltone 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
Lead compounds, as Pb 0.05 mg/m³ 0.15 mg/m³
Barium compounds, as Ba 0.5 mg/m³ 0.5 mg/m³

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:

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>PERCENT PRESENT(a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead compounds</td>
<td>Up to 28% (as PbO)</td>
</tr>
<tr>
<td>Barium compounds</td>
<td>Up to 5% (as BaO)</td>
</tr>
</tbody>
</table>

(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

Autoignition Temperature: Nonflammable
Flash Point: Not Applicable
Upper Explosive Limit (%): Not Applicable
Lower Explosive Limit (%): Not Applicable
Extinguisher Media: Product is nonflammable – Use extinguishing media appropriate for surrounding fire
Special Firefighting Procedures: Not Applicable
Fire & Explosion Hazards: Not Applicable
NFPA Flammability Hazard Class: 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
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.

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
Duncan Enterprises Material Safety Data Sheet – Crystaltone Glazes

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

|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:

**CAUTION**

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**

- ACGIH: American Conference of Governmental Industrial Hygienists
- ANSI: American National Standards Institute
- ASTM: American Society for Testing Materials
- °C: Degrees Centigrade
- CAS: Chemical Abstract Service
- CERCLA: Comprehensive Environmental Response, Compensation and Liability Act
- CFR: Code of Federal Regulations
- CPR: Controlled Products Regulations
- DOT: Department of Transportation
- EPA: Environmental Protection Agency
- °F: Degrees Fahrenheit
- FDA: Food & Drug Administration
- Hg: Mercury
- HMIS: Hazardous Materials Identification System
- IARC: International Agency for Research on Cancer
- LD: Lethal Dose
- mg / kg: Milligram per kilogram
- mm: Millimeter
- MSDS: Material Safety Data Sheet
- MSHA: Mine Safety and Health Administration
- N / A: Not Applicable
- NFPA: National Fire Protection Association
Table of Abbreviations (Continued)

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety and Health</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts per million</td>
</tr>
<tr>
<td>SARA</td>
<td>Superfund Amendment and Reauthorization Act</td>
</tr>
<tr>
<td>STEL</td>
<td>Short-Term Exposure Limit</td>
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<tr>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
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<tr>
<td>TWA</td>
<td>Time - Weighted Average</td>
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<tr>
<td>U.N.</td>
<td>United Nations</td>
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<tr>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
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< Less Than

Creation Date: 07/87
Revision Date: 06/21/05
Technical Contact: Candi Prado
Senior R&D Specialist
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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.