MATERIAL SAFETY DATA SHEET

MARYLAND REFRACTORIES COMPANY
P.O. BOX 267, SALISBURY ROAD
IRONDALE, OHIO 43932

Emergency Phone Number
Day (216) 532-9845
Night (412) 269-9633

Date Revised: 01/01/89
Trade Name: High Duty Grog

*************** SECTION I - PRODUCT IDENTIFICATION ***************

Chemical Name: Alumina Silicate
Chemical Family: Fireclay

*************** SECTION II - CHEMICAL COMPOSITION ***************

Silica* more than 50%
Alumina* more than 35%
Iron Oxide less than 2%
Titania less than 2%

*(Some of this combines to form fireclay. *)

*************** SECTION III - PHYSICAL DATA ***************

Appearance and Odor: Buff colored granular product, odorless.

*************** SECTION IV - FIRE AND EXPLOSION DATA ***************

This product will not support combustion and may be used as an extinguish-
ing media.

*************** SECTION V - HEALTH HAZARD ***************

TLV for free crystalline silica 0.1 mg/m3

Route of Entry: Inhalation
Effects of Overexposure: Silicosis; the hazard associated with crystalline silica occurs when the dust is inhaled and deposited in the small air passages of the lungs. The lung tissue reacts by forming fibrous scar tissue around the dust particles. Such scar tissue prevents the easy interchange of oxygen and carbon dioxide in the lungs. In addition, scar tissue does not stretch as easily as healthy tissue.

*************** SECTION VI - REACTIVITY DATA ***************

Stability and Reactivity: This product is stable.
Hazardous Decomposition: None
A WORD ABOUT THE ATTACHED MSDS.

This Material Safety Data Sheet (MSDS) is being furnished to you in partial compliance with the OSHA Federal Hazard Communication Standard. The information and recommendations contained herein have been compiled from sources believed to be reliable and accepted by OSHA. No warranty or guarantee can be forwarded by Maryland Refr. Co. as to the absolute correctness contained in the MSDS. Any reference to any brand of respirator does not imply the endorsement of a product nor does it imply that these respirators would be sufficient in every environment.

We believe this MSDS fairly represents the hazards associated with the use, storage, handling, or disposal of our product. However, we cannot foresee every eventuality as to misuse, combining with other materials, etc. If you have any questions we will try to help. Please contact Eric L. Meuschke at Maryland Refractories Company, Irondale, Ohio 43932, phone number (216) 532-9845.

Because of the complexity of the MSDS we are including our "plain language comments" regarding employee protection. It is our attempt to make hazard communication more useful. It does not supersede the information on the MSDS.

PLAIN LANGUAGE COMMENTS

This material presents no immediate hazard. We know of no conditions to avoid except breathing the dust over a prolonged time period. This material is generally nonpoisonous, nonflammable and not reactive.

Special precautions are not generally needed for handling, storage, disposal or use of this product. The only protective equipment normally needed is a respirator of the type needed for silica-containing dusts.

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Eric L. Meuschke, Vice President
January 10, 1983
****** SECTION VII - SPILL AND LEAKS PROCEDURES ******

Spills and Leaks should be cleaned up and disposed of by a procedure that will eliminate the generation of respirable dust. This can be accomplished by dampening the material with water.

****** SECTION VIII - INDUSTRIAL HYGIENE INFORMATION ******

Ventilation: Local Exhaust and dust collection should be maintained to maintain exposure below TLV.

Respiratory Protection: NIOSH/MSHA approved respirators with a minimum rating equal to the TLV should be worn when exposures exceed the TLV.

Protective Clothing: Clothing should be cleaned in a matter that avoids the generation of respirable dust.

****** SECTION IX - SPECIAL PRECAUTION ******

Special Precautions: Proper ventilation and breathing protection should be used in dusty areas.

Precautionary Labeling: Long-term exposure to airborne dust in excess of permissible exposure limits without proper respiratory protection may create cancer risks.

****** SECTION X - SPECIAL INFORMATION ******

A. A portion of the OSHA Hazard Communication Standard requires that manufacturers, importees and employers report any new or significant information regarding the potential health hazard of a chemical in their workplace. Therefore, we have included the results of the investigation by The International Agency for Research on Cancer (IARC). They resolved in their research entitled "IARC Monographs on The Evaluation Of The Carcinogenic Risk of Chemicals to Humans, Silica and Same Silicates". Vol. 42 which met in Lyon, France 10-17 June, 1986, that free crystalline silica is a Class 2A carcinogen. Placing silica in Class 2A requires statement of definition on any material MSDS that contains silica. IARC defines a Class 2A carcinogen as follows:

There is sufficient evidence for the carcinogenicity of crystalline silica to experimental animals.
There is inadequate evidence for the carcinogenicity of amorphous silica to experimental animals.
There is limited evidence for the carcinogenicity of crystalline silica to humans.
There is inadequate evidence for the carcinogenicity of amorphous silica to humans.

B. Silica and Alumina are listed as hazardous on the OSHA Z-Table and TLV list.