HAMMILL & GILLESPIE, INC.

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MATERIAL SAFETY DATA SHEET

To comply with OSHA's 29 CFR 1910.1200 and Bill No. 70 WHMIS Hazard Communications Standards.

SECTION I. Identity of Product and Producer

Date Prepared: October 8, 1999
Reviewed: January 2, 2002
Trade Name: Blackbird, Barnard
Chemical Name: BALL CLAY, Hydrous Aluminum Silicate CAS NUMBER 1332-58-7

PRODUCERS NAME AND ADDRESS	TELEPHONE NUMBERS	EMERGENCY CONTACT
Hammill & Gillespie, Inc. P. O. Box 104 Livingston, NJ 07039	973-994-3650 973-994-3847 FAX	CHEMTREC: 800-424-9300*

*To be used only in the event of chemical emergencies involving a spill, leak, fire exposure, or accident involving chemicals.

SECTION II. Hazardous Ingredients

Free Silica (Quartz)*	Typically 10-30%	CAS No. 14808-60-7
Titanium Dioxide	Typically less than 2.6%	CAS No. 13463-67-7

*Ball clays contain crystalline silica, as quartz, up to 30% by dry weight. Some of this silica is not fine enough to normally be considered respirable.

SECTION III. Physical Data

Fusion Range:	1569-1785°C.	**Specific Gravity:**	2.4 - 2.65
Solubility in Water:	Negligible	**Percent Volatile:**	Below 100°C. None
Vapor Pressure:	Not Applicable	**pH:**	3.5-7.5
Odor and Appearance:	Earthy odor when wet, raw color light gray to brown		

SECTION IV. Fire and Explosion Data: Non-flammable

SECTION V. Health Hazard Data

OSHA PEL: Respirable Crystalline Quartz (TWA-TLV) = 0.1mg/m^3
ACGIH: Respirable Crystalline Quartz (TWA-TLV) = 0.1 mg/m^3
Crystobalite & Tridymite (see stability) (TWA-TLV) = 0.05mg/m^3
NIOSH TWA: Respirable Crystalline Quartz = 0.05 mg/m^3
ROUTE OF ENTRY: Inhalation
HEALTH HAZARDS: WARNING: This clay product contains crystalline silica which may cause delayed respiratory disease (silicosis) if inhaled over a prolonged period of time. Avoid breathing dust. Use NIOSH/MSHA approved respirator where TLV for crystalline silica may be exceeded.
IARC MONOGRAPH VOLUME 68,1997 concludes that there is sufficient evidence that inhaled crystalline silica causes cancer in humans. IARC classification: Group I.
The NTP, in the Sixth Annual Report on Carcinogens, 1991, has added crystalline silica to its list of substances that are "reasonably anticipated to be carcinogens."
WARNING: This product contains Titanium Dioxide (TiO_2). Inhalation may cause damage to respiratory system. Identified as a potential carcinogen by NIOSH. OSHA TWA for TiO_2 is 15 mg/m3.

FIRST AID: **Eyes:** Flush thoroughly with water for 10 to 15 minutes. Contact physician if irritaion persists.
Breathing: If breathing difficulty develops, remove to fresh air. If breathing difficulty persists, contact physician.

WARNING: IARC Monograph Volume 69, 1997 concludes that 2,3,7,8-TCDD (dioxin) is carcinogenic to humans.

SECTION VI. Reactivity Data

Stability: Ball clay is stable under ordinary conditions. When exposed to high temperatures, free quartz can change crystal structure to form tridymite (above 870°C.) or cristobalite (above 1470°C.) which have greater health hazards than quartz.

Incompatibility (Materials to avoid) - None **Hazardous Polymerization:** Will not occur

SECTION VII. Spill, Leak and Disposal Information

Action to be taken in case material is released or spilled: Clean up and collect, minimizing dust. Do not exceed recommended PEL or TLV. Avoid Breathing Dust. Wear an approved respirator.
CAUTION: When water is applied, product becomes slippery.

Waste Disposal Method: Follow federal, state and local regulations for solid waste disposal. Under RCRA (40 CFR Part 261) ball clay is not a hazardous waste.

Community Right to Know: California's Proposition 65 lists crystalline silica as a carcinogen, and 2,3,7,8-TCDD (dioxin) as known to cause cancer and reproductive toxicity.

Other Precautions: Product becomes slippery when wet. Use good personal hygiene. Wash hands prior to eating.

SECTION VIII. Special Protection Information

Ventilation: Recommended method.

Respiratory Protection: If dust concentrations exceed recommended PEL or TLV for short time durations, use NIOSH/MSHA approved dust respirators. If spraying wet coatings, use NIOSH/MSHA dust/mist respirators.

Eye Protection: Wear tight fitting goggles if high dust concentrations exist. NIOSH recommends that contact lenses not be worn when working with crystalline silica.

Other: 1. Dust exposure levels in excess of appropriate PEL or TLV should be reduced by feasible engineering and/or administrative controls.
2. It is recommended that the employer obtain a copy of the ASTM E 1132 information package, "Standard Practice for Health Requirements Relating to Occupational Exposure to Quartz Dust".
3. Government regulations require that exposed personnel receive appropriate training in safe work habits when working with crystalline silica where the potential exists for exceeding the PEL or TLV.

SECTION IX. Special Precautions

Minimize dust generation and exposure. Do not breathe dust. TWA should not exceed TLV or PEL.

ACGIH recommends periodic physical examinations for those employees who are exposed to respirable crystalline silica levels greater than 50% of the TLV or PEL.

Trace amounts of dioxins have been detected in parts per trillion (ppt).

Ball clay is not hazardous under DOT regulations.

Manufacturers who crush and grind ceramic bodies fired to high temperatures should recognize possible presence of tridymite and/or cristobalite which have greater health hazards than quartz.

Data, information and recommendations recorded herein are believed to be accurate. Hammill & Gillespie, Inc. makes no warranty, either expressed or implied, with respect thereto and disclaims all liability from reliance thereon. Standards may vary in different non-U.S. jurisdictions. Follow applicable guidelines.