

**MATERIAL SAFETY DATA SHEET**  
 COMPLES WITH: OSHA's Hazard Communications Standard  
 Canada's WHMIS

SECTION 1 - MATERIAL IDENTIFICATION AND USE					
PRODUCT NAME <b>Grolleg</b>					
SPECIFIC CHEMICAL IDENTITY, COMMON NAME(S) <b>Kaolin China Clay (Aluminum Silicate Hydroxide)</b>			CAS NUMBER <b>1332-58-7</b>		
MANUFACTURER'S NAME <b>ECC International Sales Ltd.</b>			SUPPLIER'S NAME <b>BOC International, Inc.</b>		
STREET ADDRESS <b>John Keay House</b>			STREET ADDRESS <b>5775 Peachtree-Dunwoody Road, 200G</b>		
CITY <b>St. Austell</b>	STATE <b>Cornwall, England</b>		CITY <b>Atlanta</b>	STATE <b>GA</b>	
ZIP CODE <b>PL 25 4DJ</b>	EMERGENCY TELEPHONE NUMBER <b>(404) 843-1551</b>		ZIP CODE <b>30342</b>	EMERGENCY TELEPHONE NUMBER <b>(912) 372-6136</b>	
USES <b>Raw material used in the manufacture of ceramics</b>					
SECTION 2 - HAZARDOUS INGREDIENTS					
HAZARDOUS MATERIAL	%	CAS NUMBER	LD <sub>50</sub> OF MATERIAL (SPECIFY SPECIES AND ROUTE)	LD <sub>50</sub> OF MATERIAL (SPECIFY SPECIES)	
<b>Quartz Crystalline Silica</b>	<b>&lt;1.0%</b>	<b>14808-60-7</b>	<b>Not available</b>	<b>Not available</b>	
<p>The International Agency for Research on Cancer (IARC) has determined that there is limited evidence of the carcinogenicity of crystalline silica to humans.</p> <p><u>Notes</u></p> <p>Kaolin is affirmed by the FDA as generally recognized as safe (GRAS) - 21CFR, 186.1256.</p>					
SECTION 3 - PHYSICAL DATA					
PHYSICAL STATE <b>Solid</b>		ODOR AND APPEARANCE <b>Odorless white powder or lump</b>		ODOR THRESHOLD (PPM) <b>Not applicable</b>	
VAPOR PRESSURE (mmHG) <b>Not applicable</b>	VAPOR DENSITY (AIR=1) <b>Not applicable</b>	EVAPORATION RATE <b>Not applicable</b>	BOILING POINT <b>Not applicable</b>	FREEZING POINT <b>Not applicable</b>	
SOLUBILITY IN WATER (20°C) <b>Negligible</b>	pH <b>4.5-5.5</b>	SPECIFIC GRAVITY <b>2.58</b>		COEFF. WATER ABSORP. <b>Not applicable</b>	
SECTION 4 - FIRE AND EXPLOSION DATA					
FLAMMABILITY <b>Non-Flammable</b>			CONDITIONS OF FLAMMABILITY		
MEANS OF EXTINCTION					
SPECIAL PROCEDURES					
FLASHPOINT (°C) AND METHOD		UPPER EXPLOSION LIMIT		LOWER EXPLOSION LIMIT	
AUTO IGNITION TEMPERATURE (°C)		TDG FLAMMABILITY CLASSIFICATION		HAZARDOUS COMBUSTION PRODUCTS	
EXPLOSION DATA <b>Non-Explosive</b>		SENSITIVITY TO IMPACT		SENSITIVITY TO STATIC DISCHARGE	

**SECTION 5 - REACTIVITY DATA**

CHEMICALLY STABLE		IF NO, UNDER WHICH CONDITIONS?	
YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>		
COMPATIBLE WITH OTHER		IF NO, WHICH ONE(S)?	
YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>		
REACTIVITY, AND UNDER WHAT CONDITIONS			
Not applicable			
HAZARDOUS DECOMPOSITION PRODUCTS			
Not applicable			

**SECTION 6 - TOXICOLOGICAL PROPERTIES**

PRIMARY ROUTES OF ENTRY			
SKIN CONTACT <input type="checkbox"/>	EYE CONTACT <input checked="" type="checkbox"/>	INHALATION <input checked="" type="checkbox"/>	INGESTION <input checked="" type="checkbox"/>
EFFECTS OF ACUTE EXPOSURE TO MATERIAL		EFFECTS OF CHRONIC EXPOSURE TO MATERIAL	
None		Chronic exposure to any nuisance dust may cause respiratory problems. See Section 2.	
MUTAGENICITY OF MATERIAL	TERATOGENICITY OF MATERIAL	EXPOSURE LIMIT OF MATERIAL	IRRITANCY OF MATERIAL
None known	None known	Nuisance dust, TLV-TWA, 10 mg/m <sup>3</sup> total dust	None known
SENSITIZING CAPABILITY OF MATERIAL	CARCINOGENICITY OF MATERIAL	REPRODUCTIVE EFFECTS OF MATERIAL	SYNERGISTIC MATERIALS
None known	See Section 2	None known	None known

**SECTION 7 - PREVENTIVE MEASURES**

PERSONAL PROTECTIVE EQUIPMENT			
Normal precautions for nuisance dust as below			
GLOVES (SPECIFY)	RESPIRATORY (SPECIFY)	EYE (SPECIFY)	
Not required	Approved dust respirator	Safety glasses	
FOOTWEAR (SPECIFY)	CLOTHING (SPECIFY)	OTHER (SPECIFY)	
Not required	Not required	None	
ENGINEERING CONTROLS (SPECIFY E.G. VENTILATION ENCLOSED PROCESS)			
Maintain proper ventilation to keep dust levels below TLV-TWA.			
LEAK AND SPILL PROCEDURE			
Material is very slippery when wet. Clean up by sweeping, vacuuming, flushing with water.			
WASTE DISPOSAL			
Dispose in accordance with local, state, and federal regulations regarding solid waste.			
HANDLING PROCEDURES AND EQUIPMENT			
Precautions to maintain dust below TLV-TWA.			
STORAGE REQUIREMENTS			
Precautions to maintain dust below TLV-TWA.			
SPECIAL SHIPPING INFORMATION			
DOT classification - Not restricted.			

**SECTION 8 - FIRST AID MEASURES**

INGESTION	None required; no known hazard.
INHALATION	Remove to fresh air.
EYES	Flush with water to remove dust.
SKIN	Wash off with water to remove dust.

**SECTION 9 - PREPARATION**

PREPARED BY (GROUP, DEPARTMENT, ETC)	PHONE NUMBER	DATE
Marketing Department	(404) 843-1551	April 1, 1993

**CELESTIC CHINA CLAY**

**GROLLEG**

A white firing china clay used extensively in vitreous tableware formulations but also suitable for high quality earthenware or electrical porcelain.

**PRODUCT SPECIFICATION**

	Mean Value	Range	
<b>Chemical Composition (mass %):</b>			
Fe <sub>2</sub> O <sub>3</sub>	0.75	0.68	0.82
K <sub>2</sub> O	1.85	1.67	2.03
<b>Particle Size (mass %):</b>			
+ 53 micron	0.01 (0.05 max.)		
+ 10 micron	8	5	11
- 2 micron	58	52	64
<b>Modulus of Rupture (MNm<sup>-2</sup>):</b>			
80% RH	1.0	0.7	1.3

**TYPICAL DATA**

The following data is provided for information only and is derived from ECC quality control tests over a number of years. It does not constitute a specification.

	Mean Value
<b>Chemical Composition (mass %):</b>	
SiO <sub>2</sub>	48
Al <sub>2</sub> O <sub>3</sub>	37
TiO <sub>2</sub>	0.02
CaO	0.06
MgO	0.30
Na <sub>2</sub> O	0.10
L.O.I.	12.2

<b>Casting Data:</b>	
Casting Concentration (mass % solids)	62
P84 demand (mass %)	0.50
Casting Rate (mm <sup>2</sup> min <sup>-1</sup> )	0.5

<b>Fired Properties:</b>		
Water Absorption (mass %)	1180°C	14
	1280°C	5
	1410°C	0.5
Brightness (%)	1180°C	87
	1280°C	84
	1410°C	75
Contraction (%)	1180°C	9
	1280°C	14
	1410°C	18

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