

**Section 1. Product and Company Identification**




**Product Name** Raku Glaze - RG-312 – Mark’s Raku  
**Synonym** Ceramic Glaze - dry  
**Supplier/Manufacturer** Aardvark Clay & Supplies  
 1400 East Pomona St.  
 Santa Ana, Ca. 92705 USA  
 714-541-4157 phone  
 714-541-2021 fax  
[contact@aardvarkclay.com](mailto:contact@aardvarkclay.com)

**Emergency Phone Number** 911

**Product Use** Pottery Manufacturing

**Restrictions on use** Not applicable

**Section 2. Hazards Identification**

<b>GHS/Hazcom 2012 Labels</b>		<b>GHS/Hazcom 2012 Classifications:</b>		
	<b>Health:</b>			
	REPRODUCTIVE TOXICITY - Category 2 (borax)			
	ACUTE TOXICITY (Oral) - Category 4 (barium carbonate, lithium carbonate, copper carbonate)			
	EYE IRRITANT - Category 2A (borax, lithium carbonate)			
	<b>Environmental:</b>			
	ACUTE HAZARD TO THE AQUATIC ENVIRONMENT - Category 3 (lithium carbonate)			
<b>Signal Word:</b>	<b>Physical:</b>			
<b>Warning</b>	Not Hazardous			
<b>Hazard Statements:</b>				
<b>Health:</b>				
H320	Causes eye irritation	H302	Harmful if swallowed.	
H335	May cause respiratory irritation	H316	Causes mild skin irritation.	
H373	May cause damage to organs through prolonged or repeated exposure.	H360	May damage fertility or the unborn child.	
<b>Environmental:</b>		<b>Physical:</b>		
H412	Harmful to aquatic life with long lasting effects.	Not hazardous		
<b>Precaution Statements:</b>				
<b>Prevention</b>				
P262	Do not get into eyes, on skin, or on clothing.	P202	Do not handle until all safety precautions have been read and understood.	
P264	Wash hands thoroughly after handling.	P261	Avoid breathing dust/spray.	
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.	P263	Avoid contact during pregnancy/while nursing.	
P273	Avoid release to the environment.	P270	Do not eat, drink, or smoke when using this product.	
<b>Response</b>				
P305+ P351+ P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.	P301+ P312+ P330	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.	
P337+ P313	If eye irritation persists, get medical advice/attention.	P308+ P313	If exposed or concerned: Get medical advice/attention.	
P391	Collect Spillage.	P363	Wash contaminated clothing before reuse.	
P302+ P352	IF ON SKIN: Wash with plenty of soap and water.	P332+ P313	If skin irritation occurs: Get medical advice/attention.	
<b>Storage</b>		<b>Disposal</b>		
P402	Store in a dry place.	P501	Dispose of contents/container in accordance with local/regional/national/international regulations.	
P404	Store in a closed container.			
<b>Hazards not otherwise classified:</b>		Slippery when wet.	<b>% of ingredients with unknown acute toxicity:</b>	None known.

## Section 3. Composition / Information on Ingredients

**Substance/Mixture:** Mixture - A trade secret claim is made for this glaze.

Chemical	CAS Numbers	Ingredients	Chemical % of Mixture	
Barium Carbonate	BaCO3	CAS # 513-77-9	Barium Carbonate	<5
Disodium Tetraborate Pentahydrate	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·5H <sub>2</sub> O	CAS # 12179-04-3	Borax	<5
Lithium Carbonate	Li <sub>2</sub> CO <sub>3</sub>	CAS # 554-13-2	Lithium Carbonate	<15
Frit	-	-	Trade Secret Claim	Trade Secret Claim
Copper Carbonate	CuCO <sub>3</sub>	CAS # 12069-69-1	Copper Carbonate	<65

## Section 4. First-Aid Measures

Description of first-aid Measures:	
<b>First-aid measures general</b>	Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.
<b>First-aid measures after inhalation</b>	Move victim to well ventilated area. If mechanical discomfort persists, seek medical attention.
<b>First-aid measures after skin contact</b>	Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.
<b>First-aid measures after eye contact</b>	Rinse cautiously with water for 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking, or redness persists.
<b>First-aid measures after ingestion</b>	Rinse mouth. Give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do NOT induce vomiting unless directed by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Maintain an open airway. Loosen tight clothing such as a collar or tie. Never give anything by mouth to an unconscious person. If discomfort persists, seek medical attention.
Most Important Symptoms and Effects, both Acute and Delayed:	
<b>Symptoms/injuries</b>	Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.
<b>Symptoms/injuries after inhalation</b>	Dust from this product may cause irritation to the respiratory tract.
<b>Symptoms/injuries after skin contact</b>	Prolonged contact with large amounts of dust may cause mechanical irritation.
<b>Symptoms/injuries after eye contact</b>	Contact with large amounts of dust may cause mechanical irritation, pain, blinking, or redness.
<b>Symptoms/injuries after ingestion</b>	If a large quantity has been ingested, intestinal blockage and/or gastrointestinal irritation may result. No known significant effects or critical hazards.
<b>Chronic symptoms</b>	None known.

If exposed or concerned, get medical advice and attention.

## Section 5. Fire-Fighting Measures



National Fire Protection Association (U.S.A.)

<b>Suitable extinguishing media</b>	This product is not combustible. Use extinguishing media appropriate for surrounding fire.
<b>Unsuitable extinguishing media</b>	No restrictions on extinguishing media for this mixture.
<b>Special hazards arising from the substance or mixture</b>	This mixture is not flammable and does not support fire.
<b>Hazardous thermal decomposition products</b>	This mixture does not contain hazardous decomposition products.
<b>Special protective actions for fire-fighters</b>	None known.
<b>Special protective equipment for fire-fighters</b>	Fire-fighters should wear appropriate protective equipment.

## Section 6. Accidental Release Measures

<b>Use of personal precautions</b>	Avoid inhalation of dust. Wear a N-95 face mask when cleaning up dust.
<b>Emergency procedures</b>	There are no emergency procedures required for this mixture.
<b>Methods and Materials for containment</b>	There are no special spill measures that apply for this mixture.
<b>Clean up procedures</b>	For dusts, use a vacuum to clean up spillage. If appropriate, use gentle water spray to wet down and minimize dust generation. Place dust in a sealed container. <b>Wear a N-95 face mask when cleaning up dust.</b>

## Section 7. Handling & Storage

<b>Precautions for safe handling</b>	Keep bags out of direct sunlight. Do not expose this mixture to moisture until use. Do not expose liquid glaze to freezing. Use proper lifting techniques to avoid physical injury.
<b>Recommendations on the conditions for safe storage</b>	No special storage considerations, but keep in a dry, cool location.

## Section 8. Exposure Controls / Personal Protection

Chemical Name	CAS Numbers	Occupational Exposure Limits
Barium Carbonate BaCO <sub>3</sub>	CAS # 513-77-9	ACGIH TLV: TWA .5 mg/ m <sup>3</sup> OSHA PEL: TWA .5 mg/m <sup>3</sup> (respirable) OSHA PEL: TWA not established CAL OSHA PEL: TWA not established
Disodium Tetraborate Pentahydrate Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ·5H <sub>2</sub> O	CAS # 12179-04-3	ACGIH TLV: TWA 2 mg/ m <sup>3</sup> OSHA PEL: TWA 5 mg/m <sup>3</sup> (respirable) OSHA PEL: TWA 15 mg/m <sup>3</sup> (total) CAL OSHA PEL: TWA 5 mg/ m <sup>3</sup>
Lithium Carbonate Li <sub>2</sub> CO <sub>3</sub>	CAS # 554-13-2	ACGIH TLV: TWA 10 mg/ m <sup>3</sup> OSHA PEL: TWA 5 mg/m <sup>3</sup> (respirable) OSHA PEL: TWA 10 mg/m <sup>3</sup> (total) CAL OSHA PEL: TWA 10 mg/ m <sup>3</sup>
Frit - Reaction products of high temperature calcinations creating Non-Hazardous Particulates not otherwise regulated	-	ACGIH TLV: TWA not established OSHA PEL: TWA 5 mg/m <sup>3</sup> (respirable) OSHA PEL: TWA 15 mg/m <sup>3</sup> (total) CAL OSHA PEL: TWA 5 mg/ m <sup>3</sup> (respirable) CAL OSHA PEL: TWA 10 mg/m <sup>3</sup> (total)
Copper (II) Carbonate CuCO <sub>3</sub> No Occupational Exposure Limits are listed for this chemical.	CAS # 12069-69-1	ACGIH TLV: TWA not established OSHA PEL: TWA not established OSHA PEL: TWA not established CAL OSHA PEL: TWA not established

**Appropriate engineering controls:** When mixing this mixture, use local exhaust ventilation or other engineering controls as required to maintain exposures below applicable occupational exposure limits (TLV).

### Recommendations for personal protective measures

**Local Exhaust:** When mixing glazes, use sufficient local exhaust to reduce the level of respirable dust to the applicable standards set forth in Section III - ACGIH "Industrial Ventilation, A Manual of Recommended Practice," latest edition.

**Respiratory Protection:** Dust is generated when working with this mixture. To minimize exposure to dust, the mixing of this mixture should be conducted with sufficient ventilation. Respirable dust levels should be monitored regularly. Dust levels in excess of appropriate exposure limits should be reduced by feasible engineering controls, including (but not limited to) wet suppression, ventilation, and process enclosure. When such controls are not feasible, NIOSH/MSHA approved respirators must be worn in accordance with a respiratory protection program which meets OSHA requirements as set forth at 29 CFR 1910.134 and ANSI Z88.2-1080 – "Practices for Respiratory Protection".

**In most cases, a disposable N-95 Particulate Respirator is sufficient.**

**Eye Protection:** Use NIOSH/OSHA approved safety glasses with side shields. Face shields can also be used when mixing dry glaze. Wear tight fitting dust goggles when excessively (visible) dusty conditions are present or are anticipated. NIOSH recommends that contact lenses not be worn when working with excessive dust.

**Skin Protection:** Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

**Work/Hygienic Practices:** Avoid creating and breathing dust.

Wear NIOSH/MSHA approved dust mask when working in dusty conditions - (N-95).

Food, beverages, and smoking materials should NOT be in the work area.

Persons using ceramic materials should wash hands thoroughly before eating, drinking, smoking, or applying cosmetics.



Protective Clothing Pictograms

N-95 face mask

## Section 9. Physical & Chemical Properties

Physical State	Powder
Appearance	Tinted powder
Odor	None
Odor Threshold	Not Applicable
pH	6 – 8
Solubility in Water	None
Melting Point	1050 °C (1900°F)
Freezing Point	< 0 °C (<32°F)
Specific Gravity / Relative Density	2.35 g/cc
Evaporation Rate	No data available
Flash Point	Not Applicable
Auto-Ignition Temperature	Not Applicable
Decomposition Temperature	Not Applicable
Flammability	Not Applicable
Vapor Pressure	Not Applicable
Vapor Density	Not Applicable
Explosive Limits	Not Applicable
Viscosity	Not Applicable
Partition Coefficient: n-octanol/water	Not Applicable
Initial Boiling Point & Boiling Range	Not Applicable

## Section 10. Stability & Reactivity

Reactivity	Hazardous reactions will not occur under normal conditions.
Chemical stability	Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	None known
Incompatible materials	None known
Hazardous decomposition products	None known

## Section 11. Toxicological Information

Routes of Exposure	Inhalation of dust, Ingestion.
<b>Descriptions of the delayed, immediate, or chronic effects from short- and long-term exposure</b>	
Inhalation	Inhalation of high concentrations of dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.
Eye Contact	Not a primary eye irritant. May cause mechanical irritation.
Skin Contact/Irritation	Not a primary skin irritant. May cause dry skin.
Sensitization	Not a sensitizer.
Ingestion	Harmful if swallowed. If a large quantity has been ingested, intestinal blockage and/or gastrointestinal irritation may result.
<b>Chronic Effects</b>	
OSHA Carcinogen	None Known
Mutagenic Effects	None Known
Teratogenic Effects	None Known
Developmental Toxicity	None Known
Carcinogen Classifications	No chemicals found in this mixture are listed under OSHA, IARC, and NTP.
Numerical Measures of toxicity	None Known

## Section 12. Ecological Information (non-mandatory)

Ecotoxicity	None Known
Biochemical oxygen demand (BOD5)	None Known
Chemical oxygen demand(COD)	None Known
Products of Biodegradation	None Known
Toxicity of the products of Biodegradation	None Known
Bioaccumulation Potential	None Known
Potential to move from soil to groundwater	None Known
Other adverse effects	None Known


## Section 13. Disposal Considerations

<b>Personal Protection</b>	Refer to Section 8: "Recommendations for Personal Protective Measures" when disposing of glaze waste.
<b>Appropriate disposal containers</b>	Standard waste disposal containers – no specials requirements.
<b>Appropriate disposal methods</b>	Disposal of this mixture should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. In most cases, this is normal waste disposal. The generation of waste should be avoided or minimized. Dispose of non-recyclable products via a licensed waste disposal contractor. Waste packaging should be recycled. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
<b>Physical and chemical properties that may affect disposal</b>	Waste should be placed in a sealed container or in a manner that reduces or eliminates the release of the product. Packaging should be recycled before disposal.
<b>Sewage disposal</b>	Do not dispose of into sinks or toilets. They will clog. Never dispose of this product into a sewer system.
<b>Special precautions for landfills or incineration activities</b>	There are no special precautions for disposal in a landfill. This product is non-combustible and is not suitable for incineration.

## Section 14. Transportation Information

Regulatory Information	UN Number	UN Proper Shipping Name	Transport Hazard Class	Packing Group Number	Bulk Transport Guidance	Special Precautions
<b>DOT Classification</b>	Not regulated	-	-	-	-	-
<b>TDG Classification</b>	Not regulated	-	-	-	-	-
<b>ADR/RID Class</b>	Not regulated	-	-	-	-	-
<b>IMDG Class</b>	Not regulated	-	-	-	-	-
<b>IATA-DGR Class</b>	Not regulated	-	-	-	-	-

## Section 15. Regulatory Information

<b>TSCA – Toxic Substances Control Act - EPA</b>	Chemicals listed are in the TSCA Chemical Substance Inventory.
<b>California Prop. 65</b>	 <b>WARNING:</b> This product can expose you to Lithium Carbonate, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> .
<b>SARA/Title III (Emergency Planning &amp; Community Right-to-Know Act)</b>	This mixture contains no substances at or above the reporting threshold under Section 313, based on available data.

## Section 16. Other Information

### Definitions

**OSHA** means Occupational Safety & Health Administration

**IARC** means International Agency for Research on Cancer

**NTP** means National Toxicology Program

**CAS** means Chemical Abstract Service

**ACGIH** means American Conference of Governmental Industrial Hygienists

**CAL-OSHA** means California OSHA, most CAL-OSHA standards defer to the federal OSHA standards

**OSHA** means Occupational Safety & Health Administration

**OSHA PEL** means OSHA Permissible Exposure Limit

**TWA** means Time Weighted Average (average exposure on the basis of an 8h/day, 40h/week work schedule)

**TLV** means Threshold Limit Value - American Conference of Governmental Industrial Hygienists (ACGIH)

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS) – prepared Oct. 23, 2015. This data sheet is subject to change without notice.

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