CLAY PLANET

Safety Data Sheet

SDS prepared by Jon Dunlavy 6/10/2015 GHS – United States

Section 1. Identification

Product Names **Lead-free Metallic Glazes:**
#740-742

Synonym Ceramic Glaze – Water based, liquid, Cone 05 Glazes

Supplier/ Manufacturer
Clay Planet
1775 Russell Ave
Santa Cara, CA 95054 USA
408-295-3352 phone
408-295-8717 fax
800-443-2529 toll-free
info@clay-planet.com

Emergency Phone Number 911

Product Use Ceramic Sculpture and Pottery Surface coating

Restrictions on use Not recommended for use in grades K-6.
Not for spray application.

Section 2. Hazards Identification

OSHA/HCS status This wet mixture, **only when in dry powder form or if sprayed,** is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the Substance or mixture **OSHA - CARCINOGENICITY** (Inhalation) - Category 1A

(See section 16 for OSHA, IARC, and NTP carcinogen listings)
OSHA/HCS - SPECIFIC TARGET ORGAN TOXICITY (Repeated Exposure)
(respiratory tract) (inhalation) - Category 2

Signal Word **Danger**

Hazard Statement **WARNING!** Cancer Hazard. Contains quartz (crystalline silica) which can cause cancer. Risk of cancer depends upon duration and level of exposure to **dust**. Not an acute hazard. Prolonged inhalation of **dry glaze dust** may cause lung injury. Inhalation of high concentrations of **dry glaze dust** may cause mechanical irritation and discomfort of the (respiratory tract). Repeated exposure may cause chronic effects.
Wear a N-95 face mask when cleaning up dry glaze dust.
WARNING! May be harmful if swallowed. Inhalation of extremely high concentrations of copper compounds could cause pulmonary edema. Prolonged or repeated overexposure to copper salts may cause kidneys, liver and blood system effects. Prolonged or repeated contact of copper salts with skin may cause dermatitis. Avoid fumes from firing.
WARNING! Cancer Hazard. Nickel oxide may cause cancer by inhalation. Prolonged inhalation of Nickel oxide may cause serious damage to health. May cause sensitization by skin contact.
***Glaze in liquid form poses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

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GHS label elements / Hazard pictograms

Precautionary Statements

Avoid generating dust.
Do not breath dust.
Avoid skin contact.
Do not take internally.
Avoid fumes from firing.

Unclassified Hazards

Slippery when wet.

% of ingredients with unknown acute toxicity

None Known

Section 3: Composition / Information on Ingredients

Substances: N/A **Mixtures: A propriety formula trade secret claim is made for this group of substantially similar mixtures.**

Chemical	CAS Numbers	Ingredient % of Product Mixture (Glaze)		Chemical % of Ingredient	
Quartz, SiO2 (Crystalline Silica)	CAS # 14808-60-7	Kaolin Clays Frit	1 – 3 41 - 48	Kaolin Clays Frit	.45 100
Kaolinite Al2O3.2SiO2.2H2O	CAS # 1332-58-7	Kaolin Clays	1 - 3	Kaolin Clays	95 - 98
Mica (Na,K)2O.2Al2O3.6SiO2.2H2O	CAS # 12001-26-2	Kaolin Clays	1 - 3	Kaolin Clays	1-3
Copper (cupric) Oxide CuO	CAS # 1317-38-0	Cupric oxide	1 - 4	Cupric oxide	60 - 100
Nickel Oxide	CAS # 1313-99-1	Nickel Oxide	0 - 2	Nickel Oxide	90 - 100
Sodium Carboxymethyl Cellulose	CAS # 9004-32-4	CMC Gum	0.7-0.8	CMC Gum	99-100
CTAC	CAS # 4080-31-3	Dowicil-75	0.03-0.05	Dowicil-75	64
Frit*	CAS # 65997-18-4	Frit	41-48	Frit	100
Ceramic Pigments**	Varies	Ceramic Pigments	1 - 14	Ceramic Pigments	0 - 40

*Frit, CAS # 65997-18-4, is a complex mixture of materials, fused into a glassy substance, confining the materials into a non-migratory form.
**Proprietary blends of pigments used that are not considered a hazard; follow guidelines set for silica as a precaution.

Section 4: First-Aid Measures

Description of first-aid Measures:	
First-aid measures general	Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.
First-aid measures after inhalation	Move victim to well ventilated area. If mechanical discomfort persists, seek medical attention.
First-aid measures after skin contact	Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.
First-aid measures after eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking, or redness persists.
First-aid measures after ingestion	Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

Most Important Symptoms and Effects, both Acute and Delayed:	
Symptoms/injuries	Causes damage to organs through prolonged or repeated exposure (inhalation) from dust, fumes from firing or from ingestion of glaze.
Symptoms/injuries after inhalation	May cause cancer by repeated inhalation. Dust or fumes from firing this product may cause irritation to the respiratory tract, lung inflammation, cough or chest pains.
Symptoms/injuries after skin contact	Prolonged contact with large amounts of copper salts or nickel oxide may cause mechanical irritation and/or dermatitis. Exposure to copper salts or nickel oxide may cause allergic reaction in sensitive individuals.
Symptoms/injuries after eye contact	Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.
Symptoms/injuries after ingestion	If a large quantity has been ingested: intestinal blockage, gastrointestinal irritation, nausea, chills, or diarrhea.
Chronic symptoms	Repeated or prolonged exposure to respirable crystalline silica dust can cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss. Acute silicosis can be fatal. Inhalation of extremely high concentrations of copper compounds could cause pulmonary edema. Prolonged or repeated overexposure to copper salts may cause kidneys, liver and blood system effects. Prolonged or repeated contact of copper salts with skin may cause dermatitis or allergic reactions in sensitive individuals. Inhalation of Nickel oxide can cause cancer. Prolonged or repeated contact with nickel oxide may cause sensitization, dermatitis or allergic reaction in sensitive individuals Avoid fumes from firing.

If exposed or concerned, get medical advice and attention.

Section 5. Fire-Fighting Measures

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

Suitable extinguishing media	This product is not combustible. Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	No restrictions on extinguishing media for this mixture.
Special hazards arising from the substance or mixture	This mixture is not flammable and does not support fire. The plastic jars and cardboard boxes containing the mixture are flammable.
Hazardous thermal decomposition products	This mixture does not contain hazardous decomposition products.
Special protective actions for fire-fighters	Product can become slippery when wet.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment.

Section 6. Accidental Release Measures

Use of personal precautions

Avoid inhalation of dry glaze dust.
Wear a N-95 face mask when cleaning up dry glaze dust.
Do not eat, drink or smoke while using this product.

Emergency procedures

There are no emergency procedures required for this mixture.

Methods and Materials for containment

Product comes in plastic pint or gallon jars.
Do not allow spills or wastewater to flow into sewer or waterway.

Clean up procedures

For dry dusts, use a vacuum to clean up spillage. For liquid spills, use suitable absorbent material and place in disposal containers. If appropriate, use gentle water spray to wet down and minimize dust generation. Spill area can be washed with water. Collect waste water for disposal. Place dry glaze dust in a sealed container.
Wear a N-95 face mask when cleaning up dry glaze dust.

Section 7. Handling & Storage

Precautions for safe handling

Keep out of direct sunlight. Do not expose to freezing.

Recommendations on the conditions for safe storage

No special storage considerations, but keep in a dry, cool location.

Section 8. Exposure Controls / Personal Protection

Chemical Name	CAS Numbers	Occupational Exposure Limits
Quartz, SiO_2 (Crystalline Silica)	CAS#14808-60-7	ACGIH TLV: TWA 0.025 mg/ m^3 (respirable) OSHA PEL : TWA 10 mg/m^3/ divided by the value "%SiO_2" + 2 (respirable) OSHA PEL : TWA 30 mg/m^3/ divided by the value "%SiO_2" + 2 (total dust)
Kaolinite $Al_2O_3.2SiO_2.2H_2O$	CAS#1332-58-7	ACGIH TLV: TWA 2 mg/ m^3 (respirable) / particulate matter containing no asbestos and <1% crystalline silica (respirable) OSHA PEL : TWA 5 mg/m^3 (respirable) OSHA PEL : TWA 15 mg/m^3 (total)
Mica $(Na,K)_2O.2Al_2O_3.6SiO_2.2H_2O$	CAS# 12001-26-2	ACGIH TLV: TWA 3 mg/ m^3 (respirable) OSHA PEL: TWA 3 mg/m^3 (respirable) OSHA PEL : TWA 20 mppcf See Appendix C (Mineral Dusts) which can be found in Section 16
Copper (Cupric) Oxide	CAS # 1317-38-0	ACGIH TLV: TWA 1 mg/ m^3 (respirable) OSHA PEL: TWA 1 mg/ m^3 (respirable) OSHA PEL: TWA 0.1 mg/m^3 (fume)
Nickel Oxide	CAS # 1313-99-1	ACGIH TLV: TWA 0.2 mg/ m^3 (respirable) OSHA PEL: TWA 1 mg/ m^3 (respirable)
Sodium Carboxymethyl Cellulose	CAS # 9004-32-4	ACGIH TLV: Not Established* OSHA PEL: Not Established*
CTAC	CAS # 4080-31-3	ACGIH TLV: Not Established* OSHA PEL: Not Established*
Frit	CAS # 65997-18-4	ACGIH TLV: Not Established* OSHA PEL: Not Established*
Ceramic Pigments	Varies	ACGIH TLV: Not Established* OSHA PEL: Not Established*

*For values not established, follow guidelines set for silica as a precaution

Appropriate engineering controls

Glaze in liquid form poses no health risk and no inhalation risk (dust).

Once glaze has dried, there may be dust generated by cleaning and working processes.
In the event that dust is generated, use local exhaust ventilation or other engineering controls as required to maintain exposures below applicable occupational exposure limits (TLV).
Not recommended for spray application, but local exhaust system may be used as required to maintain exposures below applicable occupational exposure limits (TLV) while spraying.

Recommendations for personal protective measures

Local Exhaust: When dry sanding or grinding clay/glaze products, or during spray application of glaze, use sufficient local exhaust to reduce the level of respirable dust to the applicable standards set forth in Section III. See ACGIH "Industrial Ventilation, A Manual of Recommended Practice," latest edition.

Respiratory Protection: Dust is generated when working with dry glaze or during spray application. To minimize exposure to dust and/or crystalline silica, cutting or sanding dry clay/glaze products should be conducted with sufficient ventilation.
Respirable dust and quartz levels should be monitored regularly. Dust and quartz levels in excess of appropriate exposure limits should be reduced by feasible engineering controls, including (but not limited to) wet sanding, 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 CFR1910.134 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 should also be used when dry sawing clay/glaze products. 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 crystalline silica 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 thoroughly before eating, drinking, smoking, or applying cosmetics.

Protective Clothing Pictograms **N-95 face mask**

Section 9. Physical & Chemical Properties

Physical State	Liquid glaze
Appearance	Colored, heavy liquid
Odor	Earthy
Odor Threshold	Not Applicable
pH	6 - 8
Solubility in Water	Miscible
Melting Point	> 982 °C (>1800°F)
Freezing Point	< 0 °C (<32°F)
Specific Gravity	1.3 - 1.8
Relative Density	10.8 - 15.0 lb/gal
Evaporation Rate	No data available
Boiling Point	100°C (212°F)
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

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 Copper fumes from firing.

Section 11: Toxicological Information

Routes of Exposure Inhalation of dry glaze dust, Ingestion, Skin contact

Descriptions of the delayed, immediate, or chronic effects from short- and long-term exposure	
Inhalation	Inhalation of high concentrations of dry glaze dust may cause mechanical irritation, discomfort, shortness of breath or nausea. Repeated exposure may cause chronic effects.
Eye Contact	Not a primary eye irritant. May cause mechanical irritation.
Skin Contact/Irritation	May cause allergic reaction in sensitive individuals (copper, nickel). Not absorbed through skin.
Sensitization	Nickel oxide is a sensitizer.
Ingestion	May cause anemia, damage to kidneys and/or liver.
Chronic Effects	
OSHA Carcinogen	Lung cancer – Silica has been classified by OSHA as a human lung carcinogen. **Repeated or prolonged exposure** to respirable crystalline silica dust can cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss. Acute silicosis can be fatal. **Nickel oxide is classified a human carcinogen.**
Mutagenic Effects	None Known
Teratogenic Effects	None Known
Developmental Toxicity	None Known
Effects of Silicosis	**Symptoms of Silicosis**
Bronchitis/Chronic Obstructive Pulmonary Disorder. Tuberculosis – Silicosis makes an individual more susceptible to TB. Scleroderma – a disease affecting skin, blood vessels, joints and skeletal muscles. Possible renal disease.	Shortness of breath; possible fever. Fatigue; loss of appetite. Chest pain; dry, nonproductive cough. Respiratory failure, which may eventually lead to death.
Numerical Measures of toxicity	None Known

Section 12. Ecological Information (non-mandatory)

Prevent from entering drains, sewers and waterways
Copper and nickel compounds may be hazardous to the environment and aquatic life.

Section 13. Disposal Considerations (non-mandatory)

Personal Protection Refer to Section 8: "Recommendations for Personal Protective Measures" when disposing of ceramic waste.

Appropriate disposal containers Standard waste disposal containers – no specials requirements.

Appropriate disposal methods Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
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.

Physical and chemical properties that may affect disposal Dry glaze dust should be placed in a sealed container or in a manner that reduces or eliminates the release of the product. Liquid glaze should be placed in suitable container. Packaging should be recycled before disposal.

Sewage disposal

Do not dispose of into sinks or toilets. They will clog. Never dispose of this product into a sewer system.

Special precautions for landfills or incineration activities

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 (non-mandatory)

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

Section 15. Regulatory Information (non-mandatory)

TSCA – Toxic Substances Control Act - EPA	Quartz and other chemicals are listed in the TSCA Chemical Substance Inventory
CONFORMS WITH ASTM D4236	ASTM - American Society for Testing and Materials
California Prop. 65	**WARNING:** This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - Calif. Health & Safety Code Section 2549 Et Seq.)

Section 16. Other Information

OSHA, IARC, and NTP Carcinogen Classifications

Chemical with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Quartz, (Crystalline Silica) SiO2	CAS # 14808-60-7	Yes	Yes - Group 1	Yes
Kaolinite	CAS # 1332-58-7	No	No - Group 3	No
Mica	CAS # 12001-26-2	No	No - Group 3	No
Copper (Cupric) Oxide	CAS # 1317-38-0	No	No - Group 3	No
Nickel Oxide	CAS # 1313-99-1	Yes	Yes - Group 1	Yes
Sodium Carboxymethyl Cellulose	CAS # 9004-32-4	No	No - Group 3	No
CTAC	CAS # 4080-31-3	No	No - Group 3	No
Frit	CAS # 65997-18-4	N/A	No – Group 3	N/A
Ceramic Pigments	Various; Follow guidelines for silica	N/A	N/A	N/A

Substances, mixtures and exposure circumstances in this list have been classified by the IARC as ***Group 1****: The agent (mixture) is carcinogenic to humans. The exposure circumstance entails exposures that are carcinogenic to humans.* This category is used when there is *sufficient evidence* of carcinogenicity in humans. Exceptionally, an agent (mixture) may be placed in this category when evidence of carcinogenicity in humans is less than sufficient but there is *sufficient evidence* of carcinogenicity in experimental animals and strong evidence in exposed humans that the agent (mixture) acts through a relevant mechanism of carcinogenicity.

The agents in this list have been classified in **Group 2A** (**probable** carcinogens)[1] by the **IARC** (International Agency for Research on Cancer). The term "agent" encompasses both substances and exposure circumstances that pose a risk. This designation is applied when there is *limited evidence* of carcinogenicity in humans as well as *sufficient evidence* of carcinogenicity in experimental animals. In some cases, an agent may be classified in this group when there is *inadequate evidence* of carcinogenicity in humans along with *sufficient evidence* of carcinogenicity in experimental animals and *strong evidence* that the carcinogenesis is mediated by a mechanism that also operates in humans. Exceptionally, an agent may be classified in this group solely on the basis of *limited evidence* of carcinogenicity in humans.

Substances, mixtures and exposure circumstances in this list have been classified by the International Agency for Research on Cancer (IARC) as ***Group 2B**: The agent (mixture) is **possibly carcinogenic to humans**. The exposure circumstance entails exposures that are possibly carcinogenic to humans.* This category is used for agents, mixtures and exposure circumstances for which there is limited evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals. It may also be used when there is inadequate evidence of carcinogenicity in humans but there is sufficient evidence of carcinogenicity in experimental animals. In some instances, an agent, mixture or exposure circumstance for which there is inadequate evidence of carcinogenicity in humans but limited evidence of carcinogenicity in experimental animals together with supporting evidence from other relevant data may be placed in this group. Further details can be found in the preamble to the IARC Monograph.

Substances, mixtures and exposure circumstances in this list have been classified by the IARC as ***Group 3**: The agent (mixture or exposure circumstance) **is not classifiable as to its carcinogenicity to humans**.* This category is used most commonly for agents, mixtures and exposure circumstances for which the evidence of carcinogenicity is inadequate in humans and inadequate or limited in experimental animals. Exceptionally, agents (mixtures) for which the evidence of carcinogenicity is inadequate in humans but sufficient in experimental animals may be placed in this category when there is strong evidence that the mechanism of carcinogenicity in experimental animals does not operate in humans. Agents, mixtures and exposure circumstances that do not fall into any other group are also placed in this category.
Further details can be found in the IARC Monographs.

Appendix C – Supplementary Exposure Limits

Mineral Dusts

OSHA PELS for "mineral dusts" listed below are from Table Z-3 of 29 CFR 1910.1000. The OSHA PEL (8-hour TWA) for crystalline silica (as respirable quartz) is either 250 mppcf divided by the value "%SiO_2 + 5" or 10 mg/m^3 divided by the value "%SiO_2 + 2." The OSHA PEL (8-hour TWA) for crystalline silica (as total quartz) is 30 mg/m^3 divided by the value "%SiO_2 + 2." The OSHA PELs (8-hour TWAs) for cristobalite and tridymite are ½ the values calculated above using the count or mass formulae for quartz.

The OSHA PEL (8-hour TWA) for amorphous silica (including diatomaceous earth) is either 80 mg/m^3 divided by the value "%SiO_2," or 20 mppcf.

The OSHA PELs (8-hour TWAs) for talc (not containing asbestos), mica, and soapstone are 20 mppcf. The PELs for talc (not containing asbestos), mica, and soapstone, are applicable if the material contains less than 1% crystalline silica.

Section 16. Other Information

Definitions

OSHA means Occupational Safety & Health Administration
IARC means International Agency for Research on Cancer
NTP means National Toxicology Program
HCS means Hazardous Communication Standard
TLV means Threshold Limit Value - American Conference of Governmental Industrial Hygienists (ACGIH)
PEL means OSHA Permissible Exposure Limit
TWA means Time Weighted Average (average exposure on the basis of an 8h/day, 40h/week work schedule)
CAS means Chemical Abstract Service
ASTM means American System of Testing and Materials

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

Information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or any product in violation of any patent or in violation of any law or regulation. It is the user's responsibility to determine for himself the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. We make no warranty as to the results to be obtained in using any material and, since conditions of use are not under our control, we must necessarily disclaim all liability with respect to the use of any material supplied by us.