Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG1 Soft White Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Feldspar	68476-25-5	20-40%
Crystalline Silica - quartz	14808-60-7	15-30%
Frit*	65997-18-4	5-20%
Calcium Carbonate	1317-65-3	5-20%
Kaolin	1332-58-7	5-20%
Zirconium Silicate	14940-68-2	3-10%
Talc	14807-96-6	3-10%
Bentonite	1302-78-9	<3%
Titanium Dioxide	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%
Diiodomethyl-p-tolysufone	20018-09-1	<1%
CTAC	4080-31-1	<1%

*Frit, CAS # 65997-18-4, is a complex mixture of materials, fused into a glassy substance, confining the materials into a non-migratory form.

Section 4 - First Aid Measures

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards — Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.

Extinguishing Media — Use appropriate extinguishing media for surrounding fire.

Chemical Hazards from Fire — Glaze mixture does not contain hazardous decomposition products.

Protective actions and equipment for fire-fighters — Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods — 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. **Wear a N-95 face mask when cleaning up dry glaze dust.**

Personal Precautions and Personal Protective Equipment — Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**

Environmental Precautions — Do not allow spills or wastewater to flow into sewer or waterway.

Emergency Procedures & Methods of Containment — There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling — Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Feldspar	20-40%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Crystalline Silica - quartz	15-30%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Frit	5-20%	65997-18-4	Not Established*
Calcium Carbonate	5-20%	1317-65-3	5mg/m3 / respirable 15mg/m3 / total dust
Kaolin	5-20%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Zirconium Silicate	3-10%	14940-68-2	5 mg/m3
Talc	3-10%	14807-96-6	2mg/m3 / 2mg/m3 respirable
Bentonite	<3%	1302-78-9	5mg/m3 / 3mg/m3 respirable
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*
Diiodomethyl-p-tolysufone	<1%	20018-09-1	Not Established*
CTAC	<1%	4080-30-1	Not Established*

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Talc	14807-96-6	NO	YES - 1	NO
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate
Refer to section 8 for proper PPE when disposing of ceramic waste material.

Disposal containers appropriate
Standard waste disposal containers - no special requirements.

Disposal methods
Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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, Talc and Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 6/6/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG2 Dark Blue Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Frit*	65997-18-4	30-60%
Feldspar	68476-25-5	15-35%
Kaolin	1332-58-7	5-20%
Calcium Carbonate	1317-65-3	5-20%
Zirconium Silicate	14940-68-2	3-10%
Crystalline Silica - quartz	14808-60-7	0-7%
Red Iron Oxide	1309-37-1	<2%
Cobalt Oxide	1308-06-1	<2%
Bentonite	1302-78-9	<2%
Titanium Dioxde	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%

*Frit, CAS # 65997-18-4, is a complex mixture of materials, fused into a glassy substance, confining the materials into a non-migratory form.

Section 4 - First Aid Measures

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Frit	30-60%	65997-18-4	Not Established*
Feldspar	15-35%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Kaolin	5-20%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Calcium Carbonate	5-20%	1317-65-3	15mg/m3 / respirable 2mg/m3 / total dust
Zirconium Silicate	3-10%	14940-68-2	5 mg/m3
Crystalline Silica - quartz	0-7%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Red Iron Oxide	<2%	1309-37-1	10PPM(STEL) / 5mg/m3
Cobalt Oxide	<2%	1308-06-1	0.02 mg/m3
Bentonite	<2%	1302-78-9	5mg/m3 / 3mg/m3 respirable
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Cobalt Oxide	1308-06-1	NO	YES - 2B	NO
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate	Refer to section 8 for proper PPE when disposing of ceramic waste material.
Disposal containers appropriate	Standard waste disposal containers - no special requirements.
Disposal methods	Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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, Cobalt Oxide and Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 6/15/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG3 Light Blue Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Frit*	65997-18-4	30-60%
Feldspar	68476-25-5	15-35%
Kaolin	1332-58-7	5-20%
Calcium Carbonate	1317-65-3	5-20%
Zirconium Silicate	14940-68-2	3-10%
Crystalline Silica - quartz	14808-60-7	0-7%
Bentonite	1302-78-9	<2%
Cobalt Oxide	1308-06-1	<1%
Titanium Dioxde	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%

*Frit, CAS # 65997-18-4, is a complex mixture of materials, fused into a glassy substance, confining the materials into a non-migratory form.

Section 4 - First Aid Measures

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards — Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.

Extinguishing Media — Use appropriate extinguishing media for surrounding fire.

Chemical Hazards from Fire — Glaze mixture does not contain hazardous decomposition products.

Protective actions and equipment for fire-fighters — Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods — 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. **Wear a N-95 face mask when cleaning up dry glaze dust.**

Personal Precautions and Personal Protective Equipment — Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**

Environmental Precautions — Do not allow spills or wastewater to flow into sewer or waterway.

Emergency Procedures & Methods of Containment — There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling — Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Frit	30-60%	65997-18-4	Not Established*
Feldspar	15-35%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Kaolin	5-20%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Calcium Carbonate	5-20%	1317-65-3	15mg/m3 / respirable 2mg/m3 / total dust
Zirconium Silicate	3-10%	14940-68-2	5 mg/m3
Crystalline Silica - quartz	0-7%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Bentonite	<2%	1302-78-9	5mg/m3 / 3mg/m3 respirable
Cobalt Oxide	<1%	1308-06-1	0.02 mg/m3
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Cobalt Oxide	1308-06-1	NO	YES - 2B	NO
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate	Refer to section 8 for proper PPE when disposing of ceramic waste material.
Disposal containers appropriate	Standard waste disposal containers - no special requirements.
Disposal methods	Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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, Cobalt Oxide and Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 6/15/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG4 Second Hand Rose Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Frit*	65997-18-4	30-60%
Feldspar	68476-25-5	15-35%
Kaolin	1332-58-7	5-20%
Calcium Carbonate	1317-65-3	5-20%
Zirconium Silicate	14940-68-2	3-10%
Ceramic Pigment**	Varies	3-10%
Crystalline Silica - quartz	14808-60-7	0-7%
Bentonite	1302-78-9	<2%
Titanium Dioxde	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%

*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

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Frit	30-60%	65997-18-4	Not Established*
Feldspar	15-35%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Kaolin	5-20%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Calcium Carbonate	5-20%	1317-65-3	15mg/m3 / respirable 2mg/m3 / total dust
Zirconium Silicate	3-10%	14940-68-2	5 mg/m3
Ceramic Pigment	3-10%	Varies	Not Established*
Crystalline Silica - quartz	0-7%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Bentonite	<2%	1302-78-9	5mg/m3 / 3mg/m3 respirable
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate	Refer to section 8 for proper PPE when disposing of ceramic waste material.
Disposal containers appropriate	Standard waste disposal containers - no special requirements.
Disposal methods	Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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 Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 6/15/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG5 Iron Red Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Gerstley Borate	12007-56-6	20-40%
Red Iron Oxide	1309-37-1	15-30%
Crystalline Silica - quartz	14808-60-7	15-30%
Feldspar	68476-25-5	5-20%
Talc	14807-96-6	5-20%
Kaolin	1332-58-7	3-15%
Titanium Dioxide	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%
Bentonite	1302-78-9	<1%

Section 4 - First Aid Measures

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Gerstley Borate	20-40%	12007-56-6	5mg/m3 respirable / 15 mg/m3 total dust
Red Iron Oxide	15-30%	1309-37-1	10PPM(STEL) / 5mg/m3
Crystalline Silica - quartz	15-30%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Feldpsar	5-20%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Talc	5-20%	14807-96-6	2mg/m3 / 2mg/m3 respirable
Kaolin	3-15%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*
Bentonite	<1%	1302-78-9	5mg/m3 / 3mg/m3 respirable

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Talc	14807-96-6	NO	YES - 1	NO
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate	Refer to section 8 for proper PPE when disposing of ceramic waste material.
Disposal containers appropriate	Standard waste disposal containers - no special requirements.
Disposal methods	Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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, Talc and Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 5/25/2017

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Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG6 Copperhead Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Inorganic Borate	12007-56-6	20-40%
Crystalline Silica - quartz	14808-60-7	15-30%
Feldspar	68476-25-5	5-20%
Red Iron Oxide	1309-37-1	5-20%
Talc	14807-96-6	5-20%
Kaolin	1332-58-7	3-15%
Rutile	1317-80-2	<3%
Titanium Dioxide	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%
Bentonite	1302-78-9	<1%

Section 4 - First Aid Measures

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Inorganic Borate	20-40%	12007-56-6	15 mg/m3 total dust and 5 mg/m3 respirable dust
Crystalline Silica - quartz	15-30%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Feldspar	5-20%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Red Iron Oxide	5-20%	1309-37-1	10PPM(STEL) / 5mg/m3
Talc	5-20%	14807-96-6	2mg/m3 / 2mg/m3 respirable
Kaolin	3-15%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Rutile	<3%	1317-80-2	15mg/m3 / 10mg/m3 respirable
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*
Bentonite	<1%	1302-78-9	5mg/m3 / 3mg/m3 respirable

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Talc	14807-96-6	NO	YES - 1	NO
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate
Refer to section 8 for proper PPE when disposing of ceramic waste material.

Disposal containers appropriate
Standard waste disposal containers - no special requirements.

Disposal methods
Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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, Talc and Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 6/6/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG7 Gloss White Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Frit*	65997-18-4	30-60%
Feldspar	68476-25-5	15-35%
Kaolin	1332-58-7	5-20%
Zirconium Silicate	14940-68-2	5-20%
Calcium Carbonate	1317-65-3	5-20%
Crystalline Silica - quartz	14808-60-7	0-7%
Bentonite	1302-78-9	<2%
Titanium Dioxide	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%
Diiodomethyl-p-tolysufone	20018-09-1	<1%
CTAC	4080-31-1	<1%

*Frit, CAS # 65997-18-4, is a complex mixture of materials, fused into a glassy substance, confining the materials into a non-migratory form.

Section 4 - First Aid Measures

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Frit	30-60%	65997-18-4	Not Established*
Feldspar	15-35%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Kaolin	5-20%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Zirconium Silicate	5-20%	14940-68-2	5 mg/m3
Calcium Carbonate	5-20%	1317-65-3	5mg/m3 / respirable 15mg/m3 / total dust
Crystalline Silica - quartz	0-7%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Bentonite	<2%	1302-78-9	5mg/m3 / 3mg/m3 respirable
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*
Diiodomethyl-p-tolysufone	<1%	20018-09-1	Not Established*
CTAC	<1%	4080-30-1	Not Established*

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate
Refer to section 8 for proper PPE when disposing of ceramic waste material.

Disposal containers appropriate
Standard waste disposal containers - no special requirements.

Disposal methods
Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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 Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 6/16/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG11 Light Rust Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Kaolin	1332-58-7	35-70%
Frit*	65997-18-4	5-20%
Tin Oxide	18282-10-5	3-10%
Talc	14807-96-6	3-10%
Zirconium Silicate	14940-68-2	<2%
Bentonite	1302-78-9	<2%
Crystalline Silica - quartz	14808-60-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%

*Frit, CAS # 65997-18-4, is a complex mixture of materials, fused into a glassy substance, confining the materials into a non-migratory form.

Section 4 - First Aid Measures

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Kaolin	35-70%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Frit	5-20%	65997-18-4	Not Established*
Tin Oxide	3-10%	18282-10-5	2mg.m-3 / 4 mg.m-3
Talc	3-10%	14807-96-6	2mg/m3 / 2mg/m3 respirable
Zirconium Silicate	<2%	14940-68-2	5 mg/m3
Bentonite	<2%	1302-78-9	5mg/m3 / 3mg/m3 respirable
Crystalline Silica - quartz	<1%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Talc	14807-96-6	NO	YES - 1	NO
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate
Refer to section 8 for proper PPE when disposing of ceramic waste material.

Disposal containers appropriate
Standard waste disposal containers - no special requirements.

Disposal methods
Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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
Talc and Quartz are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 6/6/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG12 Metallic Green Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Frit*	65997-18-4	25-50%
Feldspar	68476-25-5	10-30%
Kaolin	1332-58-7	5-25%
Calcium Carbonate	1317-65-3	5-25%
Zirconium Silicate	14940-68-2	3-15%
Crystalline Silica - quartz	14808-60-7	1-5%
Cupric Oxide	1317-38-0	<3%
Bentonite	1302-78-9	<3%
Titanium Dioxide	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%

*Frit, CAS # 65997-18-4, is a complex mixture of materials, fused into a glassy substance, confining the materials into a non-migratory form.

Section 4 - First Aid Measures

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Frit*	25-50%	65997-18-4	Not Established*
Feldspar	10-30%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Kaolin	5-25%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Calcium Carbonate	5-25%	1317-65-3	5mg/m3 / respirable 15mg/m3 / total dust
Zirconium Silicate	3-15%	14940-68-2	5 mg/m3
Crystalline Silica - quartz	1-5%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Cupric Oxide	<3%	1317-38-0	1mg/m3
Bentonite	<3%	1302-78-9	5mg/m3 / 3mg/m3 respirable
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate	Refer to section 8 for proper PPE when disposing of ceramic waste material.
Disposal containers appropriate	Standard waste disposal containers - no special requirements.
Disposal methods	Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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 Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 5/24/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG13 Banana Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Frit*	65997-18-4	30-60%
Feldspar	68476-25-5	15-35%
Calcium Carbonate	1317-65-3	5-20%
Kaolin	1332-58-7	5-20%
Zirconium Silicate	14940-68-2	3-10%
Crystalline Silica - quartz	14808-60-7	3-10%
Ceramic Pigment**	Varies	<3%
Bentonite	1302-78-9	<2%
Titanium Dioxde	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%

*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

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Frit	30-60%	65997-18-4	Not Established*
Feldspar	15-35%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Calcium Carbonate	5-20%	1317-65-3	15mg/m3 / respirable 2mg/m3 / total dust
Kaolin	5-20%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Zirconium Silicate	3-10%	14940-68-2	5 mg/m3
Crystalline Silica - quartz	3-10%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Ceramic Pigment	<3%	Varies	Not Established*
Bentonite	<2%	1302-78-9	5mg/m3 / 3mg/m3 respirable
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate	Refer to section 8 for proper PPE when disposing of ceramic waste material.
Disposal containers appropriate	Standard waste disposal containers - no special requirements.
Disposal methods	Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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 Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 6/6/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG14 Oil Spot Black Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Kaolin	1332-58-7	35-60%
Frit*	65997-18-4	10-25%
Ceramic Pigments**	Varies	3-15%
Talc	14807-96-6	3-15%
Red Iron Oxide	1309-37-1	3-15%
Aluminum hydroxide(Al(OH)3)	21645-51-2	3-15%
Manganese Dixode	1313-13-9	<2%
Cobalt Oxide	1308-06-1	<1%
Crystalline Silica - quartz	14808-60-7	<1%
Titanium Dioxide	13463-67-7	<1%

*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

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Kaolin	35-60%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Frit*	10-25%	65997-18-4	Not Established*
Ceramic Pigments	3-15%	Varies	Not Established*
Talc	3-15%	14807-96-6	2mg/m3 / 2mg/m3 respirable
Red Iron Oxide	3-15%	1309-37-1	10PPM(STEL) / 5mg/m3
Aluminum hydroxide(Al(OH)3)	3-15%	21645-51-2	Not Established*
Manganese Dixode	<2%	1313-13-9	5 mg/m3 / 0.1 mg/m3 respirable 3 mg/m3 fume
Cobalt Oxide	<1%	1308-06-1	0.02 mg/m3
Crystalline Silica - quartz	<1%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Talc	14807-96-6	NO	YES - 1	NO
Cobalt Oxide	1308-06-1	NO	YES - 2B	NO
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate	Refer to section 8 for proper PPE when disposing of ceramic waste material.
Disposal containers appropriate	Standard waste disposal containers - no special requirements.
Disposal methods	Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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
Talc, Cobalt Oxide, Quartz and Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 2/3/2017

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.

Safety Data Sheet (SDS)

GHS - United States

Section 1 - Identification

Product Name	**HG16 Light Beige Glaze**
Common Names	Stoneware Glaze
Company/Manufacturer	Minnesota Clay Co. USA 2960 Niagara Ln N Plymouth, MN 55447 (763) 432-0875 fax (763) 432-7675 info@mnclay.com
Emergency Number	911
Product Use	Non-exhaustive list: pottery, art ware, ceramic decoration
Restrictions on Use	None Known

Section 2 - Hazardous Identification

Contains Crystalline Silica ≥ 1% Respirable

GHS label elements/ Hazard pictograms

Signal Word: Danger

OSHA/HCS status

Glaze mixture in dry form is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification of the substance or mixture

OSHA - Carcinogenicity (inhalation) - Category 1A and Specific organ toxicity Category 2 (Repeated Exposure) (Respiratory tract through inhalation) - Category 1.

Hazard Statement

(H302) Harmful if swallowed. (H350) Cancer Hazard. Contains quartz (crystalline silica) which may cause cancer. Risk of cancer depends upon duration and level of exposure to the dust. Not an acute hazard.
(H332) Prolonged inhalation of dust may cause lung injury. Inhalation of high concentrations of dust may cause mechanical irritation and discomfort of the respiratory tract. Repeated exposure may have chronic effects.
(H316 + H320 + H335) Can cause skin, respiratory, and eye irritation.

***Glaze in liquid form posses no health risk. Inhalation of dry glaze dust, fumes from firing or ingestion of glaze should be avoided.**

Precautionary Statements

(P261) Avoid breathing dust. (P280) Wear protective gloves, eye, and respiratory protection. (P264) Wash contaminated skin thoroughly after handling. (P270) Do not eat, drink or smoke when using this product. (P301+P310) If swallowed: Immediately call a poison center/doctor. (P330) Rinse mouth. (P501) Dispose of contents/ container in accordance with national regulations.

Section 3 - Composition / Information on Ingredients

Substances/Mixtures *Mixture - A trade secret claim is made for this item.*

Component	CAS#	Approx % by Wt.
Feldspar	68476-25-5	20-40%
Crystalline Silica - quartz	14808-60-7	15-35%
Frit*	65997-18-4	5-20%
Calcium Carbonate	1317-65-3	5-20%
Kaolin	1332-58-7	5-20%
Zirconium Silicate	14940-68-2	3-10%
Bentonite	1302-78-9	<3%
Talc	14807-96-6	<3%
Ceramic Pigment**	Varies	<1%
Titanium Dioxde	13463-67-7	<1%
Sodium Carboxymethyl Cellulose	9004-32-4	<1%
CTAC	4080-31-3	<1%
Diiodomethyl-p-tolysufone	20018-09-1	<1%

*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

First-Aid Measures

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.

Skin Contact Remove contaminated clothing. Wash affected area with soap and warm water. Obtain medical attention if irritation persists.

Inhalation Move victim to fresh air in well ventilated area. If coughing or irritation persists, seek medical attention.

Ingestion Rinse mouth. Give 200-300mL water to drink. Do NOT induce vomiting. If ingested, seek medical attention as a precaution.

General Never give anything by mouth to an unconscious person. If you feel unwell, seek medical attention.

Symptoms and Effects, both Acute and Delayed

Eye Contact Prolonged contact with large amounts of dust may cause mechanical irritation. Glaze is abrasive and may scratch eyes.

Skin Contact Prolonged contact with large amounts of dust may cause mechanical irritation.

Inhalation Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects (see section 11).

Ingestion Large quantities ingested may cause gastrointestinal irritation.

Chronic Symptoms Repeated or prolonged exposure to respirable crystalline silica dust may cause lung damage in the form of silicosis. Symptoms will include shortness of breath, fever fatigue, loss of appetite, chest pain, dry non-productive cough.

Other injuries Causes damage to organs through prolonged or repeated exposure (inhalation) from dust.

Section 5 - Fire Fighting Measures

General Fire Hazards	Glaze mixture in dry or moist form is not flammable and does not support fire. The paper bags or plastic bags and cardboard boxes containing the mixture are flammable.
Extinguishing Media	Use appropriate extinguishing media for surrounding fire.
Chemical Hazards from Fire	Glaze mixture does not contain hazardous decomposition products.
Protective actions and equipment for fire-fighters	Glaze mixture and packaging can become slippery when wet. Fire-fighters should wear appropriate protective equipment.

Section 6 - Accidental Release Measures

Clean-up Methods	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. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Personal Precautions and Personal Protective Equipment	Wear appropriate protective equipment and clothing during clean-up. When dry sweeping use NIOSH approved respirators when dust levels exceed exposure limits. **Wear a N-95 face mask when cleaning up dry glaze dust.**
Environmental Precautions	Do not allow spills or wastewater to flow into sewer or waterway.
Emergency Procedures & Methods of Containment	There are no emergency procedures required for this mixture. Place dry glaze dust in a sealed container for re-use or proper disposal.

Section 7 - Handling & Storage

Precautions for Safe Handling	Use proper lifting techniques to avoid physical injury. 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 Counts/Personal Protection

Airborne Exposure Limits

Hazardous Ingredient	Wt. % Approx.	CAS#	OSHA PEL* / ACGIH TLV*
Feldspar	20-40%	68476-25-5	5mg/m3 / 2mg/m3 respirable
Crystalline Silica - quartz	15-35%	14808-60-7	0.1mg/m3 / 0.025mg/m3 respirable
Frit	5-20%	65997-18-4	Not Established*
Calcium Carbonate	5-20%	1317-65-3	15mg/m3 / respirable 2mg/m3 / total dust
Kaolin	5-20%	1332-58-7	5mg/m3 / 2mg/m3 respirable 15mg/m3 total dust
Zirconium Silicate	3-10%	14940-68-2	5 mg/m3
Bentonite	<3%	1302-78-9	5mg/m3 / 3mg/m3 respirable
Talc	<3%	14807-96-6	2mg/m3 / 2mg/m3 respirable
Ceramic Pigment	<1%	Varies	Not Established*
Titanium Dioxide	<1%	13463-67-7	15mg/m3 / 10mg/m3 total dust
Sodium Carboxymethyl Cellulose	<1%	9004-32-4	Not Established*
CTAC	<1%	4080-31-3	Not Established*
Diiodomethyl-p-tolysufone	<1%	20018-09-1	Not Established*

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

Engineering Measures

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.

Personal Protective Equipment (PPE)

Respiratory

N-95 face mask

Dust is generated when working with dry glaze mixture. 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.

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.

Eyes

Use of NIOSH/OSHA approved safety glasses with side shields is recommended. 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 and Body

Protective Clothing is not essential. Use gloves and/or protective clothing if abrasion or allergic reactions are experienced.

Hygienic Practices

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.

Section 9 - Physical & Chemical Properties

Appearance	Liquid/dry	**Evaporation**	No data available
		Solubility in water at 100 C	None
Color	Various Colors	**Decomposition temperature**	Not Applicable
Physical state	Liquid/dry glaze	**Viscosity**	Not Applicable
pH	6-8	**Flash point**	Not Applicable
Odor	Earthly odor	**Boiling Point**	100°C (212°F)
Odor threshold	Not Applicable	**Flammability**	Not Applicable
Melting Point	> 982 °C (>1800°F)	**Vapor Pressure (mm HG)**	Not Applicable
Freezing Point	< 0 °C (<32°F)	**Vapor Density**	Not Applicable
Relative density/Specific Gravity	10.8-15.0 lb/gal (liquid) 1.3-1.8	**Partition coefficient**	Not Applicable
		Auto-ignition temp	Not Applicable

Section 10 - Stability & Reactivity

Reactivity

No dangerous reactions are known under normal conditions of use.

Chemical Stability

Stable at standard temperature and pressure. No stabilizers required to maintain chemical stability.

Possibility of Hazardous Reactions and Conditions to Avoid

None known

Incompatibility / Hazardous decomposition products

None known

Section 11 - Toxicological Information

Primary Route of Exposure: Skin, Eye Contact, Inhalation and Ingestion

Specific Organ Toxicity - Single Exposure
Target organs include ears, skin, respiratory system, and gastrointestinal tract.

Specific Organ Toxicity - Repeated Exposure
Causes damage to eyes, skin, respiratory system, and gastrointestinal tract through prolonged or repeated exposure.

Acute Short-Term Exposure Effects
May cause eye irritation, skin irritation, respiratory tract irritation, and gastrointestinal tract irritation. Inhalation of high concentrations of dry glaze dust may cause mechanical irritation and discomfort. Long term exposure may cause chronic effects.

Chronic Long Term Exposure Effects
Silica has been classified by OSHA as a human lung carcinogen. Repeated or prolonged exposure of respirable crystalline silica dust may cause lung damage in the form of silicosis.

Effects of silicosis include bronchitis/chronic obstructive pulmonary disorder, increased susceptibility to tuberculosis, scleroderma (a disease affecting skin, blood vessels, joints and skeletal muscles), and possible renal disease. Acute silicosis can be fatal.

Related Symptoms
Symptoms will include shortness of breath, fever, fatigue, loss of appetite, chest pain, dry non-productive cough.

Medical Conditions Aggravated by Exposure:
Individuals with pre-existing allergies, eye disorders, skin disorders, respiratory disorders and/or gastrointestinal disorders may have increased susceptibility to the effects of exposure.

OSHA, IARC, and NTP Carcinogen Classifications

Chemicals with Carcinogen Potential	CAS#	OSHA	IARC	NTP
Crystalline Silica - quartz	14808-60-7	YES	YES - 1	YES
Talc	14807-96-6	NO	YES - 1	NO
Titanium Dioxide	13463-67-7	NO	YES - 2B	NO

IARC - International Agency for Research on Cancer
1 = Carcinogenic to humans
2A = Probably carcinogenic to humans
2B = Possibly carcinogenic to humans

OSHA - Occupational Safety & Health Administration
NTP - National Toxicology Program

Section 12 - Ecological Information

Ecotoxicity	Harmful to fish
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

General Notes:
Prevent from entering drains, sewers and waterways. Zinc compounds may be hazardous to the environment and aquatic life, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground.

Section 13 - Disposal Configurations (non-mandatory)

Personal protection appropriate
Refer to section 8 for proper PPE when disposing of ceramic waste material.

Disposal containers appropriate
Standard waste disposal containers - no special requirements.

Disposal methods
Disposal of this product should comply with the requirements of environmental protection and waste disposal legislation and any regional or 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, Talc and Titanium Dioxide are listed in the TSCA Chemical Substance Inventory.

California Prop. 65 WARNING
This product contains a chemical known to the State of California to cause cancer. (Prop. 65 - California Health and Safety Code Section 2549 Et Seq).

SARA/Title III (Emergency Planning & Community Right-to-Know Act)
This mixture contains no substances at or above the reporting threshold under section 313, based on available data.

Section 16 - Other Information (non-mandatory)

Definitions

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstract Service
CAL-OSHA	California Occupational Safety & Health Administration
IARC	International Agency for Research on Cancer
OSHA	Occupational Safety & Health Administration
MSHA	Mine Safety and Health Administration
NIOSH	National Institute of Occupational Safety and Health
NTP	National Toxicology Program

HCS	Hazardous communication standard
OSHA PEL	OSHA permissible exposure limit
STEL	Short-term exposure limit
TLV	Threshold limit value
TWA	Time weighted average

Three types of TLVs for chemical substances as defined by the **ACGIH** are:

TLV-TWA	Time weighted average - average exposure on the basis of an 8h/day, 40h/week work schedule.
TLV-STEL	Short-term exposure limit - spot exposure for a duration of 15 minutes, that cannot be repeated more than 4 times per day, with at least 60 minutes between exposure periods.
TLV-C	Ceiling limit - absolute exposure limit that should not be exceeded at any time.

This SDS is in compliance with The Globally Harmonized System of Classification and Labeling of Chemicals (GHS), and is subject to revision at any time without notice. Its current revision date is : 6/13/2017

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