

MATERIAL SAFETY DATA SHEET

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PRODUCT NAME: ULTRA STAINS - US035	ISSUED: JUNE 2007
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UN NO:	None Allocated	D.G. CLASS:	None Allocated	CAS NO:	68412-79-3
HAZCHEM:	None Allocated	SUB. RISK:	None Allocated	SUSDP:	None Allocated
G.T.EPG:	None Allocated	SPEC.EPG:	None Allocated	PACK.GRP:	None Allocated

OTHER NAMES:

Ultra Stain, Ceramic Pigment, Ceramic Stain, Metal Oxide.

INGREDIENTS:

CHEMICAL ENTITY:	CAS NO:	PROPORTION:
Zirconium Oxide	1314-23-4	35 – 37%
Crystalline Silica	14808-60-7	-
Iron Oxide	1309-37-1	16 – 17%

USE:
MAJOR:

Colorant in glaze, underglaze and other kiln fired media.

PHYSICAL DESCRIPTION/PROPERTIES:

APPEARANCE:	Brown Powder.
ODOUR:	None.
BOILING POINT:	Not Applicable
MELTING POINT:	Not Applicable
VAPOUR PRESSURE:	Not Applicable
SPECIFIC GRAVITY:	4.3
FLASH POINT:	Not Applicable
FLAMMABILITY LIMITS:	No Data
SOLUBILITY IN WATER:	Negligible
VISCOSITY:	No Data
pH:	Neutral
VOLATILE ORGANIC COMP:	None

HEALTH HAZARD INFORMATION:
ZIRCONIUM OXIDE

The product contains Zirconium Oxide that contains trace quantities of naturally occurring radioactive uranium and thorium. Inhalation of respirable dust may cause lung cancer. Zirconium Oxide in the eyes may cause discomfort, tearing and blurred vision.

ACUTE:

SWALLOWED:	Not a likely route of entry, but should it occur, may cause stomach discomfort, diarrhoea and nausea.
EYE:	Dust or powder may irritate eye tissue. Rubbing may cause abrasion of cornea.
SKIN:	Prolonged or repeated contact may cause dermatitis and skin granulomas.
INHALED:	Dust or powder of this material may cause irritation of the nose, throat, and respiratory tract. Lungs may be affected by repeated or prolonged exposure to the dust or powder of this material.

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CHRONIC:

N/A

CRYSTALLINE SILICA

This product contains Crystalline Silica. Silica may cause irritation to eyes, skin and the respiratory tract. Prolonged or repeated exposure may lead to delayed lung injury (silicosis). This material is listed as a possible carcinogen.

ACUTE:

- SWALLOWED:** Expected to be a low ingestion hazard however may cause nausea.
- EYE:** Prolonged or repeated contact may result in mild irritation or mechanical irritation.
- SKIN:** Prolonged contact may result in mild irritation or mechanical irritation.
- INHALED:** Inhalation should be avoided. May cause irritation and discomfort.

CHRONIC:

Heavy, prolonged or repeated exposures may cause delayed lung injury (silicosis). Silicosis is a form of disabling pulmonary fibrosis which can be progressive and may lead to death. Lung damage may aggravate other pulmonary conditions and disease and lead to increased susceptibility to pulmonary tuberculosis. Progressive massive fibrosis may be accompanied by right heart enlargement, heart failure and pulmonary failure. There are several studies suggesting that exposure to respirable silica or that the disease Silicosis is associated with the increased incidence of kidney disorders. (Nephrotoxicity).

IRON OXIDE**ACUTE:**

- SWALLOWED:** Extremely large oral dosages may produce gastrointestinal disturbances.
- EYE:** Dust or powder may irritate eye tissue. Rubbing may cause abrasion of cornea.
- SKIN:** No adverse effects expected.
- INHALED:** May cause irritation to the respiratory tract. Symptoms may include coughing and shortness of breath.

CHRONIC:

- SWALLOWED:** -
- EYE:** Long term eye exposures may stain the eyes and leave a "rust ring".
- SKIN:** -
- INHALED:** Long-term inhalation exposure to iron has resulted in mottling of the lungs, a condition referred to as siderosis. This is considered a benign pneumoconiosis and does not ordinarily cause significant physiological impairment.

COMPOUND**ACUTE:**

- SWALLOWED:** Large amounts may cause irritation of the gastrointestinal tract, nausea, vomiting and diarrhoea.

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EYE:	Prolonged or repeated contact may result in mild irritation or mechanical irritation.
SKIN:	Prolonged contact may result in mild irritation or mechanical irritation.
INHALED:	Dust from this product may cause irritation of the respiratory system. Overexposure may cause lung damage.
FIRST AID:	
SWALLOWED:	Rinse mouth with water and drink large amounts of water. Induce vomiting only in conscious person. Seek medical attention.
EYE:	Irrigate with copious amounts of water for at least 15 minutes. Do not rub eyes. Seek medical attention if irritation persists.
SKIN:	Wash thoroughly with soap and water. Remove contaminated clothing and wash before re-use. If irritation occurs, seek medical attention.
INHALED:	Remove victim immediately from exposure. If breathing has stopped, apply artificial respiration. Seek medical attention.

ADVICE TO DOCTOR:
Treat symptomatically.

COMPONENT ANALYSIS LD50/LC50:
 Oral LD50 (Rat): 2200 mg/kg
 Dermal LD50 (rabbit 4 hr): not irritant
 Inhalation LC50 (Rat): 5.4 mg/L
 Acute Irritation to eye in rabbits: Not irritant
 Ames test (salmonellas typhimurium): Not mutagenic

The product has not been tested. The statements on toxicology have been derived from products of a similar structure and composition.

PRECAUTIONS FOR USE:
EXPOSURE STANDARDS:

Exposure Standards (air)

CAS#: 1314-23-4	Zirconium Oxide (ZrO ₂)	
	ACGIH-TLVs	10mg/m ³ Total 5mg/m ³ Respirable
	OSHA PELs	15mg/m ³ Total 5mg/m ³ Respirable
	NOISHA	5mg/m ³ 15 min. C
CAS#: 14808-60-7	Crystalline Silica SiO ₂	
	ACGIH-TLVs	0.1mg/m ³ Respirable
	OSHA PELs	10mg/m ³ Respirable
	NOISHA	0.05mg/m ³
CAS#: 1314-13-2	Iron Oxide	Fe ₂ O ₃
	ACGIH-TLVs	5 mg/m ³ Respirable

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OSHA PELs 10 mg/m³ Respirable
NOISHA -**ENGINEERING CONTROLS:**

Ventilation should effectively remove and prevent build-up of any dust generated from the handling of this product. Local exhaust ventilation is recommended when generating excessive levels of airborne dust or vapours from handling or thermal processing. Use explosion-proof equipment if high dust/air concentrations are possible.

PERSONAL PROTECTION:

PERSONAL PROTECTION GUIDE: COTTON OVERALLS, GLOVES & GLASSES. Avoid eye contact and repeated or prolonged skin contact. Wear overalls, safety glasses and impervious gloves. If ventilation is not sufficient to effectively prevent build-up of dusts, appropriate NIOSH/MSHA respiratory protection must be provided. Always wash hands before smoking, eating, drinking or using the toilet.

FLAMMABILITY:

Flash Point: N/A
Method Used: N/A
Flammability Classification: N/A

ENVIRONMENT:

Slightly water soluble inorganic product. It can be eliminated mechanically from water in purification tanks.

Acute fish toxicity (zebra fish, *Brachydamia rerio*): LCO (48hr): 1000 mg/L, LC50 (96hr): >1000 mg/l

The product has not been tested. The statement has been derived from products of a similar structure and composition.

SAFE HANDLING INFORMATION:**STORAGE:**

Keep container dry. Store away from excessive heat and away from strong oxidizing agents, strong acids, food and feedstuffs. Keep container tightly closed to prevent contamination.

HANDLING:

Remove all ignition sources from material handling, transfer, and processing areas where dust may be present. Local exhaust ventilation should be provided in work areas. Ensure that airborne dust concentrations are controlled within regulatory dust standards.

TRANSPORT:

Not a hazardous material for transportation.

DOT REGULATIONS:

Hazard Class: None

Land transport ADR/RID (cross-border)

ADR/RID Class: None

Maritime transport IMDG:

IMDG Class: None

Air transport ICAO-TI and IATA-DGR:

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ICAO/IATA Class: None

SPILLS & DISPOSAL:

Sweep spilled substance into containers and if appropriate, moisten first to minimize or prevent dusting and the generation of airborne particulates, then move to a safe place. Do not let the spilled substance enter the environment. Avoid the generation of dust during clean-up. Collect dust or powder using a vacuum cleaner with a HEPA filter. Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering.

FIRE/EXPLOSION HAZARD:**HAZARDS OF USE/STORAGE:**

Dust accumulation from this product may present an explosion hazard in the presence of an ignition source.

DANGEROUS DECOMPOSITION/COMBUSTION PRODUCTS:

Product is not considered combustible. Toxic and irritating fumes are given off of unknown composition if burned. If the substance is heated, it will decompose producing toxic and irritating fumes.

PERSONAL PROTECTION:

Wear a NIOSH approved positive pressure self-contained breathing apparatus and fire fighter turnout gear.

REACTIVITY:**Chemical Stability**

This is a stable material.

Chemical Stability: Conditions to Avoid

Avoid contact with strong oxidizers, acids, excessive heat, sparks or open flame or dust accumulation.

Incompatibility

Strong oxidizing agents, acids, and heat.

Hazardous Decomposition

Produces toxic and irritating fumes.

Hazardous Polymerization

Will not occur.

FIRE EXTINGUISHING AGENTS:

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

REGULATORY INFORMATION:**COMPONENT CLASSIFICATION AND LABELLING (EEC)****Zirconium Oxide (1314-23-4)**

Annex #: - EINECS #: 215-227-2

Classification:

N/A

Label Information:

S-37 Wear suitable gloves.

S-45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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S-28 After contact with skin, wash immediately with plenty of water.

Crystalline Silica (14808-60-7)

Annex #: - EINECS #: 238-878-4

Classification:

N/A

Label Information:

R-48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

R-40/20 Harmful: possible risk of irreversible effects through inhalation

S-22 Do not breathe dust.

S-38 In case of insufficient ventilation, wear suitable respiratory equipment

Iron Oxide (1309-37-1)

Annex #: - EINECS #: 215-168-2

Classification:

N/A

Label Information:

R-36 Irritating to eyes.

R-37 Irritating to respiratory system.

R-38 Irritating to skin.

S-26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

COMPONENT ANALYSIS - INVENTORY

Component	CAS #	TSCA	DSL	EINECS
Zirconium oxide	1314-23-4	Yes	Yes	Yes
Crystalline Silica	14808-60-7			Yes
Iron Oxide	1309-37-1			No

OTHER INFORMATION:

This product is a blend of various metal oxides, salts and some compounds which are interfused by high calcination to form the finished product. The document deals with the individual components and the finished product..

DISCLAIMER:

Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product.

KEY/LEGEND:

NA = Not available or Not Applicable. ACGIH = American Conference of Governmental Industrial Hygienists. TLV = Threshold Limit Value. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration.

END OF MATERIAL SAFETY DATA SHEET

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