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MATERIAL SAFETY DATA SHEET

PRODUCT NAME: ULTRA STAINS - US006	**ISSUED:** JUNE 2007

UN NO:	None Allocated	**D.G. CLASS:**	None Allocated	**CAS NO:**	None Allocated
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 Silicate	10101-52-7	35-50%
Cadmium sulphide	1306-23-6	9-25
Zirconium oxide	1314-23-4	1-15

USE:

MAJOR:

Colorant in glaze, underglaze and other kiln fired media.

PHYSICAL DESCRIPTION/PROPERTIES:

APPEARANCE:	Yellow Powder.
ODOUR:	Negligible.
BOILING POINT:	Not Applicable
MELTING POINT:	2450^{o}C
VAPOUR PRESSURE:	Not Applicable
SPECIFIC GRAVITY:	4.6 @ 25^{o}C
FLASH POINT:	Not Applicable
FLAMMABILITY LIMITS:	No Data
SOLUBILITY IN WATER:	No Data
VISCOSITY:	No Data
pH:	Neutral
VOLATILE ORGANIC COMP:	None

CADMIUM RELEASE:

These inclusion pigments have been tested as per ASTM D5517-03 and have been determined to release the following amounts of cadmium:

US006: 133 ppm

These levels have been deemed to be within acceptable limits for use in glaze manufacture.

HEALTH HAZARD INFORMATION:

ACUTE & CHRONIC:

US OSHA has chosen to regulate occupational exposure to all cadmium compounds, including pigments, as a single category. The standard states that substances containing cadmium are a cancer hazard and can cause lung and kidney disease.

Cadmium and cadmium compounds are listed in the Annual NTP Report as carcinogenic to animals, but with only limited evidence of carcinogenicity to humans. This information is based on test results for cadmium compounds other than pigment forms.

Although certain cadmium compounds are known to cause kidney damage in humans and has been shown to cause lung cancer in laboratory animals, no chronic health effects have been shown to result from exposure to cadmium pigments. Cadmium pigments have been shown to be significantly less biologically available and less active than other cadmium compounds.

The product contains zirconium silicate that contains trace quantities of naturally occurring radioactive uranium and thorium. Inhalation of respirable dust may cause lung cancer.

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.
I**NHALED:**	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.

FIRST AID:

SWALLOWED:	Rinse mouth with water and drink plenty of water. Do not induce vomiting. 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:

Cadmium Sulphide (1306-23-6)

Oral LD50 Rat: 7080 mg/kg
Oral LD50 Mouse: 1166 mg/kg

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

CARCINOGENICITY

This product may be carcinogenic to humans.

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COMPONENT CARCINOGENICITY

Cadmium sulphide (1306-23-6)

German DFG — Category 2 (considered to be carcinogenic for man); (Listed under Cadmium and its compounds)

PRECAUTIONS FOR USE:

EXPOSURE STANDARDS:

Exposure Standards (air)

CAS#: 1306-23-6 — Cadmium Sulphide
United Kingdom 0.03mg/m3 TWA (respirable dust as Cd)

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: NA
Method Used: NA
Flammability Classification: NA

ENVIRONMENT:

Avoid contamination of natural waterways. Rather, cleaning of brushes and disposal should occur into settling tank for appropriate disposal and treatment.

In the food chain important to humans, bioaccumulation of cadmium compounds take place, specifically in crustacea and plants. It is strongly recommended not to let the material enter into the environment because cadmium sulfide persists in the environment for a very long time.

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:

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, including sulfur oxides which will react with strong oxidants and reacts with acids forming toxic gas (hydrogen sulfide).

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

Sulphur oxides, hydrogen sulphide and metal oxide fume.

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)

The following components have labelling requirements under Council Directive 67/548/EEC, Annex I.

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Cadmium sulphide (1306-23-6)

Annex #: 048-010-00-4 EINECS #: 215-147-8

Classification:

Toxic

Carcinogen Category 3.

Label Information:

R-22 Harmful if swallowed.

R-40 Possible risk of irreversible effects.

R-48/23/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.

R-53 May cause long-term adverse effects in the aquatic environment.

S-1/2 Keep locked up and out of the reach of children.

S-22 Do not breathe dust.

S-36/37 Wear suitable protective clothing and gloves.

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

S-61 Avoid release to the environment. Refer to special instructions/ Safety Data Sheets.

Notes:

Concentrations are percentage by weight of metallic element calculated with reference to total weight of the preparation.

COMPONENT ANALYSIS - INVENTORY

Component	CAS #	TSCA	DSL	EINECS
Silicic acid (H_4SiO_4), zirconium(4+) salt (1:1)	10101-52-7	Yes	Yes	Yes
Cadmium sulphide	1306-23-6	Yes	Yes	Yes
Zirconium oxide	1314-23-4	Yes	Yes	Yes

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