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SAFETY DATA SHEET

UNDERGLAZE COLOURS

PRODUCT NAME: UNDERGLAZE COLOURS –
UG049 – MANDARIN

ISSUED: March 2007

Cadmium Colours

CONTACT NUMBER: 01243 265845

HAZARDOUS INGREDIENTS

ENTITY	%	CAS NO	ACGIH TLV	OSHA PEL
INSOLUBLE CADMIUM	< 26%	12656-57-4 & 58339-34-7	0.01 mg / m ³ (as Cd)	0.2 mg / m ³ (as Cd)
SELENIUM COMPOUNDS	< 26%	7782-49-2	0.01 mg / m ³	0.2 mg / m ³
ZIRCONIUM SILICATE	0 – 9%	10101-52-7	0.5 mg / m ³ (as Zr)	0.5 mg / m ³ (as Zr)
CLAY/POTASH	< 15%	1302-78-9	N/A	N/A
CALCINED ALUMINA	0 - 2%	1344-28-1	10 mg / m ³	5 mg / m ³
SILICA	0 - 6%	14808-60-7	0.1 mg / m ³	0.1 mg / m ³
ZINC OXIDE	0 - 6%	1314-13-2	2 mg / m ³	5 mg / m ³

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Colour dependent on pigments present
ODOUR:	Negligible
BOILING POINT:	N/A
MELTING POINT:	> 400°C
VAPOUR PRESSURE:	N/A
SPECIFIC GRAVITY:	1.2 – 1.45 @ 25°C
FLASH POINT:	N/A
FLAMMABILITY LIMITS:	No data
SOLUBILITY IN WATER:	Negligible
VISCOSITY:	No data
pH:	7.0 – 8.5
VOLATILE ORGANIC COMP:	7 – 14%



HAZARDS IDENTIFICATION

SILICA

Crystalline Silica may be present. Crystalline silica may cause irritation to eyes, skin and the respiratory tract. Prolonged or repeated inhalation of silica, in excess of TLV, may lead to delayed lung injury (silicosis). This material is listed as a possible carcinogen.

CADMIUM-SULPHO-SELENIDE/CADMIUM

Product contains insoluble cadmium pigments.

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.

COMPONENT ANALYSIS LD50/LC50:

Cadmium Sulfide (12656-57-4 & 58339-34-7)

Oral LD50 Rat: 7080 mg/kg

Oral LD50 Mouse: 1166 mg/kg

Selenium (7782-49-2)

Oral LD50 Rat: 6700 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.

COMPONENT CARCINOGENICITY

Cadmium Sulfide (12656-57-4 & 58339-34-7)

German DFG Category 2 (considered to be carcinogenic for man);

(Listed under Cadmium and its compounds)

Selenium (7782-49-2)

IARC Supplement 7, 1987; Monograph 9, 1975 (Group 3 (not classifiable))

German DFG Category 3B (could be carcinogenic for man)

ROUTES OF ENTRY: Ingestion. Absorption through skin negligible. Inhalation only if sprayed.



FIRST AID MEASURES

SWALLOWED:	Dilute by drinking water.
EYE:	Flush eyes with copious quantities of water for at least 15 minutes. If irritation persists contact a physician.
SKIN:	Wash skin with soap and water.
INHALED:	Remove from exposure. Apply artificial respiration if breathing has stopped and contact physician.

FIRE/EXPLOSION HAZARD

FLASH POINT:	N/A
FLAMMABLE LIMITS:	N/A
EXTINGUISHING MEDIA:	Not combustible
SPECIAL FIRE FIGHTING PROCEDURE:	None
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None

ACCIDENTAL RELEASE MEASURES

Spillage:	Uncontaminated material may be recovered and re-used. If contaminated, scoop, vacuum or wash into a receptacle for disposal.
Waste Disposal:	Follow Federal or State and Local regulations for disposal. Testing of the waste may be required to determine status under hazardous waste regulations.

HANDLING AND STORAGE

ENGINEERING CONTROL:	None
WORK PRACTICES:	Store away from food. Do not smoke, eat or drink while handling.
PROCEDURE/EQUIPMENT:	None.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Use of the following protective measures are strongly recommended if the glazes are to be applied by spraying.

The work hygiene practices apply regardless of the method of application.

RESPIRATORY PROTECTION:	Use NIOSH approved dust and/or fume respirator as necessary.
VENTILATION:	Local Exhaust for spraying.
PROTECTIVE GLOVES:	N/A
EYE PROTECTION:	For spraying.
OTHER PROTECTION:	Wear appropriate clean, protective clothing such as, but not limited to overalls, smocks and aprons.
WORK PRACTICES:	Food, beverages and smoking materials should not be in the work area. Hygiene is very important. Wash thoroughly before eating, drinking and smoking or applying cosmetics.



STABILITY AND REACTIVITY DATA

INCOMPATIBILITY: N/A

STABILITY: Stable.

HAZARDOUS DECOMPOSITION: N/A

HAZARDOUS POLYMERISATION: N/A

CONDITIONS TO AVOID: Fumes from firing, inhalation of spray.

TOXICOLOGY INFORMATION

USA

Hazard to Humans: None during normal use. Harmful if inhaled or swallowed.

DO NOT SPRAY APPLY

If glaze is spray applied the following warnings apply: Warning: Contains Quartz.

1. Possible cancer agent based on tests with laboratory animals.
2. Exposure may cause lung damage.
3. Keep out of reach of children; avoid inhalation.

This product contains chemicals known to the State of California to cause cancer.

Health Hazards (acute and chronic): Prolonged inhalation of silica, in excess of TLV, over an extended period of time may result in injury to the lungs.

Additional information: Frits are fused silica glass like substances. The bioavailability may be limited because of the physical nature of the frit. The cadmium pigments used are encapsulated in a zirconium matrix to render the cadmium insoluble. According to current US toxicology regulations, these products may be classified as NON – TOXIC.

ECOLOGICAL INFORMATION

MOBILITY: N/A

PERSISTENCE/DEGRADABILITY: N/A

BIOACCUMULATION: N/A

ECOTOXICITY: N/A

DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Follow Federal, State or Local regulations for disposal. Testing of waste may be required to determine status under hazardous waste regulations.

WASTE RESIDUE/UNUSED PRODUCT: Can be land filled according to local regulations.

CONTAMINATED PACKAGING: Can be land filled according to local regulations.

TRANSPORTATION

UN NUMBER: for cadmium 2570, guide number 53



REGULATORY INFORMATION

Silica is listed by California, Proposition 65
Silica and cadmium are listed on the IARC, OSHA or NTP carcinogen list.
All ingredients are on U.S. TSCA/EC/AICS/DSL Inventory.
See local requirements.

EU Status:

Symbol: For Cadmium Compounds
Harmful (xb)

EEC

R-20/22 Harmful by inhalation and if swallowed
R-37/38 Irritating to respiratory system and skin
S-20/21 When using do not eat, drink or smoke
S-22 Do not breathe dust or spray
S-24/25 Avoid contact with skin and eyes
S-36/37 Wear suitable protective clothing and gloves
S-45 In case of accident or if you feel unwell, seek medical advice immediately

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

Cadmium sulfide (1306-23-6)

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

Classification:

Toxic
Carcinogen Category 3.

Label Information:

R-20/22 Harmful by inhalation and 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.

Selenium (7782-49-2)

Annex #: 034-001-00-2 EINECS #: 231-957-4

Classification:

Toxic

Label Information:

R-20/22 Harmful by inhalation and if swallowed
R-33 Danger of cumulative effects.
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-20/21 When using do not eat, drink or smoke.

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

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.

WHMIS Status: Not controlled

ADDITIONAL INFORMATION:

This information is provided without warranty, representation, inducement or license of any kind, except that it is accurate to the best of knowledge of Clayman or obtained from sources believed to be accurate.

Clayman does not assume any legal responsibility for use or reliance on same. Customers are encouraged to conduct their own tests before using any product. Read the product label.

END OF MATERIAL SAFETY DATA SHEET