



Fundamentals Underglazes

SAFETY DATA SHEET (SDS)

Version: 01

Date of Issue: February 10, 2023

According to: OSHA Hazard Communication Standard
29 CFR 1910.1200(g) Rev. 2012

Section 1 – Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name: Fundamentals Underglazes

Product Colors: Kings Blue, Sea Blue, Baby Blue, Crimson, Electra Blue, Leaf Green, Spring Green, Sand, Chocolate, Cocoa, Chestnut Brown, Bright Yellow, Jet Black, China White, Silver Grey, Spice Brown, Harvest Gold, Ivory, Apple Green, Wedgewood Blue, Tucson Turquoise, Orange Sorbet, Regal Purple, Green Mist, True Teal, Lilac, Wild Violet, Pansy Purple, Bright Blue, Pink Pink, Dark Grey, Squash Yellow, Orange, Fire Engine Red, Flame Red, Dragon Red, Jade, Forest Green, Cinnamon, Blush, Peach, Red Coral, Pear Green, Marine Blue, Sage, Cement, Soft Yellow, Apricot, Rose, Plum, Lavender, Concord Grape, Midnight Blue, Aquamarine, Blue Grass, Lime Green, Olive, Eucalyptus, Ivory Pearl, Oatmeal, Grey

Product sizes: 2 oz, 16 oz, 128 oz

Other Means of Identification: None known

Product Description: Colored liquid glaze formulations intended to be applied using a brush and then placed in a kiln for glaze firing.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified use(s): The product is intended for general (adults) arts and crafts purposes.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Mayco Colors
4077 Weaver Court South
Hilliard, OH 43026 USA

Business Phone: 614-876-1171

Email: info@maycocolors.com

1.4 Emergency telephone number

Emergency Telephone: Contact the local poison control centre.

Section 2 – Hazard(s) Identification

2.1. Classification of the substance or mixture

According to: OSHA Hazard Communication Standard 29 CFR 1910.1200(g) Rev. 2012

Health	Environmental	Physical
Not classified	Acute aquatic toxicity (Category 3) (H402) ^a Chronic aquatic toxicity (Category 3) (H412) ^a	Not classified

^a Aquatic toxicity classifications only apply to the colors, **Chocolate**, **Chestnut Brown**, **Spice Brown**, and **Cement**.

2.2. Label elements

Label Pictogram: None required

Signal Word: Warning

Hazard statement:

Colors: Chocolate, Chestnut Brown, Spice Brown, Cement

**Acute aquatic toxicity
(Category 3) (H402)**

**Chronic aquatic toxicity
(Category 3) (H412)**

Toxic to aquatic life with long lasting effects.

P273: Avoid release to the environment.

P391: Collect spillage.

P501: Dispose of contents/container in accordance with local, regional, national, and/or international regulation.

2.3. Other hazards

- No other hazards have been identified for this product.

Section 3 – Composition / Information on Ingredients

3.1 Substances

The product is a mixture and not a substance.

3.2 Mixtures

Chemical Name	CAS No.	EC No.	% Concentration ^a	GHS Hazards
Zinc oxide	1314-13-2	215-222-5	up to 1.70%	H373: Specific target organ toxicity (repeated exposure, Category 2, gastrointestinal tract) H401: Acute aquatic toxicity (Category 1) H411: Chronic aquatic toxicity (Category 1)
Crystalline silica	14808-60-7	238-878-4	up to 0.2752%	H350: Carcinogenicity (Category 1) (Inhalation); H372: Specific target organ toxicity (repeated exposure, Category 1, lungs)

^a Concentrations are calculated as a maximum across all products, rather than by color.

The other ingredients in the product are either considered non-hazardous or are below their respective GHS cut-off values/concentration limits in the final product and were therefore not disclosed in the SDS.

Assessment of this product was based on the assumption that the glaze will not be sanded after it has been fired in the kiln.

Section 4 – First Aid Measures

4.1 Description of first aid measures

Eye contact: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and immediately flush eyes with water. Seek medical attention if in doubt.

Skin contact: No specific first aid measures are required. If irritation occurs, wash with plenty of water and soap. Take off contaminated clothing. If skin irritation persists: Get medical advice/attention.

Inhalation: No specific first aid measures are required. Inhalation route of exposure is not anticipated with intended use. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Seek medical attention if in doubt.

Ingestion: No specific first aid measures are required. Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention if in doubt.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to **Section 11 - Toxicological Information.**

4.3 Indication of any immediate medical attention and special treatment needed

- Not required.

Section 5 – Fire Fighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media: Use extinguishing media suitable for surrounding area if material is involved in a fire (e.g., water fog, foam, dry chemical or carbon dioxide).

Unsuitable Extinguishing Media: None known.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:

- Irritating vapours or fumes may form if product is involved in fire:
- Also see **Section 10 - Stability and Reactivity.**

5.3 Advice for firefighters

- Wear a self-contained breathing apparatus to protect against potentially irritating vapours or fumes.

Section 6 – Accidental Release Measures

6.1 Personal precautions, protective equipment (PPE) and emergency procedures

Personal Precautions: Ventilate area if spilled in confined space or other poorly ventilated areas. Observe PPE advice in **Section 8 – Exposure Controls/Personal Protection.**

Emergency Procedures: Not available.

6.2 Environmental precautions:

- Prevent entry and contact with soil, drains, sewers, and waterways. Inform relevant local/regional/national/international authorities. Prevent further leakage or spillage if it is safe to do so.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures: Contain spill if safe to do so. Collect recoverable product and place in a designated container for recycle and/or disposal. Ventilate contaminated area thoroughly. Dispose of contents/container in accordance with local/regional/national/international regulations.

6.4 Reference to other sections

- Refer to **Section 8 - Exposure Controls/Personal Protection** and **Section 13 – Disposal Considerations.**

Section 7– Handling and Storage

7.1 Precautions for safe handling

- Wash hands thoroughly after handling.
- Wash contaminated clothing before reuse.
- Employees should be trained in the safe use and handling of chemical materials.
- Refer to **Section 8 - Exposure Controls/Personal Protection.**

7.2 Conditions for safe storage, including any incompatibilities

- Keep container tightly closed to avoid spills.
- Keep in a cool dry place.
- Store locked up.

7.3 Specific end use(s)

- Refer to **Section 1.2 - Relevant identified uses.**

8.1 Control Parameters:

Occupational exposure limits: Only vapours were considered to be foreseeable under conditions of normal use. Airborne particles, such as dust, are not foreseeable under conditions of normal use.

Chemical Name	CAS No.	ACGIH TLV TWA	OSHA PEL TWA	NIOSH REL TWA	DFG MAKs TWA
Kaolin	1332-58-7	2 mg/m ³ R	15 mg/m ³ * 5 mg/m ³ **	10 mg/m ³ *** 5 mg/m ³ ****	N/A
Crystalline silica	14808-60-7	0.025 mg/m ³ R	0.05 mg/m ³	0.05 mg/m ³	N/A
Zinc oxide	1314-13-2	2 mg/m ³ R	15 mg/m ³ **** 5 mg/m ³ *****	5 mg/m ³ (dust only)	0.1 mg/m ³ R
Zirconium dioxide	1314-23-4	N/A	N/A	N/A	0.3 mg/m ³ R*****
* Total dust			R	Measured as respirable fraction of the aerosol	
** Respirable fraction			N/A	Not applicable	
*** Total					
**** Respirable					
***** Multiplied with the material density					

8.2 Exposure Controls:

Appropriate engineering controls

- No special requirements under ordinary conditions of use and with adequate ventilation. Mechanical ventilation or local exhaust ventilation may be required.

8.3 Personal Protective Equipment

Note: Consider the concentration and amount of product at the workplace when selecting PPE. Use protective equipment as required.

Respiratory: Under normal conditions of use, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.

Eyes/Face: If contact is likely, safety glasses with side shields are recommended.

Hands: Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur, wear chemically protective gloves.

Body/Skin: Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material.

Thermal Hazards: None known.

Environmental

Exposure

Controls: Not available.

Hygiene measures: Observe good industrial hygiene practices. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace and should be washed before reuse. When using the product do not eat, drink or smoke.

Section 9 – Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Note: The data below are typical values and do not constitute a specification.

Appearance: Physical state: Colour: Odour/Odour threshold:	Liquid See Section 1.1 Not available	Partition Coefficient n-octanol/water: Auto-ignition temperature:	Not available Not available
pH (as supplied):	8 - 9	Decomposition temperature:	Not available
Melting/freezing point:	Not available	Dynamic viscosity:	Not available
Boiling point/range:	Not available	Molecular weight:	Not available
Flash point:	Not available	Taste:	Not available
Evaporation rate:	Not available	Explosive properties:	Not available
Flammability:	Not available	Oxidizing properties:	Not available
Upper/lower explosive limits:	Not available	Surface tension:	Not available
Vapor pressure:	Not available	Volatile component:	Not available
Water solubility:	Not available	Gas group:	Not available
Vapor density (Air = 1):	Not available	pH (as solution):	Not available
Specific gravity (Water = 1):	Not available	VOC:	Not available
Relative density:	Not available	Particle size range:	Not available

9.2 Other information

- No further data available.

Section 10 – Stability and Reactivity

10.1 Reactivity

- This material is not considered to be reactive under normal handling and storage conditions.

10.2 Chemical stability

- This material is considered stable under normal handling and storage conditions.

10.3 Possibility of hazardous reactions

- Not expected to occur under normal handling and storage conditions.

10.4 Conditions to avoid

- Exposure to high temperatures
- Strong acids
- Strong bases
- Strong oxidisers

10.5 Incompatible materials

- Strong acids
- Strong bases
- Strong oxidisers
- Strong reducing agents.

10.6 Hazardous decomposition products

- Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, and other products of incomplete combustion. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids.

Section 11 – Toxicological Information

11.1 Likely routes of exposure: Skin contact.

Potential signs and symptoms: None expected under conditions of normal use.

Acute oral toxicity:	The product is practically non-toxic based on available animal and human use data. Oral ATE >5000 mg/kg
Acute dermal toxicity:	The product is practically non-toxic based on available animal and human use data. Dermal ATE >2000 mg/kg
Acute inhalation toxicity:	The product is practically nontoxic based on available animal and human use data.
Skin corrosion/irritation:	The components >1% of this product are not corrosive to the skin or skin irritants based on human and/or animal studies.
Serious eye damage/irritation:	The components of this product >1% are not damaging to the eyes or eye irritants based on available human and/or animal studies.
Respiratory or skin sensitization:	The components in this product are not sensitizing to the skin based on human and/or animal studies.
Mutagenicity:	The components in the product >0.1% are not mutagenic based on animal studies or no data identified for the components in this product.
Carcinogenicity:	Crystalline silica (CAS No. 14808-60-7) has been classified for carcinogenicity (Category 1). Crystalline silica [listed as silica dust, crystalline, in the form of quartz or cristobalite (CAS No. 14808-60-7)] is listed as a carcinogen by IARC, NTP and ACGIH. Product classification is not warranted based on a review of available data and the nature of the product (<i>i.e.</i> , liquid). Classification is not warranted based on a review of available data. The other components in the product >0.1% are not carcinogenic based on animal studies or no data identified for the components in this product.
Reproductive Toxicity:	The components in the product >0.1% are not reproductive toxicants based on animal studies or no data identified for the components in this product.
Specific target organ toxicity (single exposure):	The components in the product >1% are not specific target organ toxicity (single exposure) toxicants based on animal studies or no data identified for the components in this product.
Specific target organ toxicity (repeated exposure):	Zinc oxide (CAS No. 1314-13-2) has been classified for specific target organ toxicity (repeated exposure, Category 2; may cause irritation to the gastrointestinal tract through oral exposure). Product classification is not warranted for this effect based on the concentration present in the product. Crystalline silica (CAS No. 14808-60-7) classified for specific target organ toxicity (repeated exposure, Category 1; causes damage to lungs through prolonged or repeated exposure via inhalation); however, classification is not warranted based on a review of available data and the nature of the product (<i>i.e.</i> , liquid). The other components in this product >1% are not repeated exposure specific target organ toxicity hazards based on available information, human and/or animal studies.
Aspiration hazard:	The components in the product >1% are not aspiration hazards based on animal studies or no data identified for the components in this product.

References:

ECHA (European Chemicals Agency). 2023. REACH Registered Substances Database. <https://echa.europa.eu/search-for-chemicals>
IARC (International Agency for Research on Cancer). 2023. Agents Classified by the IARC Monographs, Volumes 1–129. <https://monographs.iarc.who.int/list-of-classifications/>
NTP (National Toxicology Program). 2023. Report on Carcinogens, Fifteenth Edition.; Research Triangle Park, NC: Official Journal of the European Union. 2008. Regulation (EC) No 1272/2008. <http://data.europa.eu/eli/reg/2008/1272/2022-03-01>
U.S. Department of Health and Human Services, Public Health Service. <https://ntp.niehs.nih.gov/go/roc14>

Section 12 – Ecological Information

12.1 Toxicity

- Product is classified for acute and chronic aquatic toxicity (Category 3).

Chemical Name	CAS No.	Species	Value
Zinc oxide	1314-13-2	Danio rerio	LC ₅₀ (96h): 1.55 mg/L (nano ZnO) nominal LC ₅₀ (96h): 1.793 mg/L (bulk ZnO) nominal EC ₅₀ (84h): 2.065 mg/L (nano ZnO) nominal EC ₅₀ (84h): 2.066 mg/L (bulk ZnO) nominal
		Danio rerio	NOEC (32d): ≥540 µg/L nominal
		Daphnia magna	EC ₅₀ (48h): >1.4 - <2.5 mg/L nominal
		Daphnia magna	EC ₁₀ (21d): 127 µg/L nominal EC ₁₀ (21d): 195 µg/L nominal

12.2 Persistence and degradability

- No data available for the components of the product.

12.3 Bioaccumulative potential

- No data available.

12.4 Mobility in Soil

- No data available.

12.5 Results of PBT and vPvB assessment

- No data available.

12.6 Other adverse effects

- No further data available.

Section 13 – Disposal Considerations

13.1 Waste treatment methods

Preparing wastes for disposal: Use product for its intended purpose or recycle if possible. Dispose of waste in accordance with local, regional, national, and/or international regulations. The empty container has residues which may exhibit hazards of the product.

Contaminated Packaging: Container packaging is not expected to exhibit hazards.

Section 14 – Transport Information

Note: This product is not regulated as dangerous goods for transport.

14.1 UN number	Not applicable
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es):	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	None
14.7 Maritime transport in bulk according to IMO instruments	Not applicable

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Note: The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in **Section 3 – Composition / Information on Ingredients**.

United States

Federal Regulations:

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):

No components in this product >0.1% are subject to reporting under CERCLA.

Clean Water Act (CWA): Chromium compounds, cadmium compounds, and zinc compounds are listed by the CWA as toxic pollutants. No other components in this product are listed as toxic pollutants.

Clean Air Act (CAA): No components in this product are listed under the CAA.

Superfund Amendments and Reauthorization Act (SARA) Title III Information:

SARA 302 Components: No components in this product are subject to reporting requirements of S.302.

SARA 304 Emergency Release Notification: No components in this product are subject to reporting requirements of S.304.

SARA 311/312 Hazards: No components in this product are subject to reporting requirements of S.311/312.

SARA 313 Components: Arsenic, cadmium, chromium VI, cobalt, lead, mercury, nickel, and selenium sulfide are subject to reporting requirements of S.313. No other components in this product are subject to reporting requirements of S.313.

Toxic Substances Control Act (TSCA): Silica, amorphous (CAS No. 112945-52-5) and silicic acid, zirconium salt, cadmium pigment-encapsulated (CAS No. 102184-95-2) are not listed on the TSCA. All other components are listed on the non-confidential TSCA inventory or are exempt.

State Regulations:

California Proposition 65 List: Cobalt, arsenic, cadmium, chromium VI, lead, mercury, nickel, and selenium sulfide are listed on the Proposition 65 List. A screening assessment indicates that the levels of these chemicals in the products does not warrant warnings for the purpose of California Proposition 65. Crystalline silica [listed as silica, crystalline (airborne particles of respirable size) CAS No. 14808-60-7] is listed on the Proposition 65 List. Given the nature/physical form of the product (i.e., liquid) airborne respirable particles would not likely be released from this product and therefore the listed form of silica, crystalline is not relevant for the product. No other components in this product are listed on the Proposition 65 List.

International:

IARC: Crystalline silica [listed as silica dust, crystalline, in the form of quartz or cristobalite (CAS No. 14808-60-7)], arsenic, chromium VI, cadmium and cadmium compound, and nickel compounds are listed as Group 1, carcinogenic to humans. Cobalt (listed as cobalt metal) and lead are classified as Group 2B, possibly carcinogenic to humans. Lead is classified as Group 2B, possibly carcinogenic to humans. Mercury (listed as mercury and inorganic mercury compounds) and cobalt [listed as cobalt(II) compounds] are classified as Group 3, not classifiable as to its carcinogenicity to humans. No other components in this product are classified with respect to carcinogenicity.

15.2 Chemical Safety Assessment

- None available for the components in this product.

Section 16 – Other Information

List of acronyms and abbreviations:

ACGIH: American conference of Governmental Hygienists	N/A: Not applicable
ATE: Acute Toxicity Estimate	NIOSH: National Institute for Occupational Safety & Health
CAA: Clean Air Act	NOEC: No observed effect concentration
CAS: Chemical Abstract Service Number	OSHA: Occupational Safety and Health Administration
CERCLA: Comprehensive Environmental Response and Liability Act	PBT: Persistent, Bioaccumulative and Toxic
CWA: Clean Water Act	PEL: Permissible Exposure Level
DFG MAK: Deutsche Forschungsgemeinschaft Maximale Arbeitsplatz-Konzentration	PPE: Personal Protective Equipment
EC: European Commission	REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
ECHA: European Chemicals Agency	REL: Recommended exposure level
EC ₁₀ : Concentration causing a predetermined effect to 10% of the population	SARA: Superfund Amendment and Reauthorization Act
EC ₅₀ : Concentration causing a predetermined effect to 50% of the population	SDS: Safety Data Sheet
GHS: Global Harmonized System	TLV: Threshold limit value
HEPA: High Efficiency Particulate Air	TSCA: Toxic Substances Control Act
IARC: International Agency for Research on Cancer	TWA: Time-weighted average
IBC: International Bulk Chemical	UN: United Nations
IMO: International Maritime Organization	vPvB: very Persistent, very Bioaccumulative
MARPOL: Maritime Pollution	UN: United Nations

References:

ECHA (European Chemicals Agency). 2023. REACH Registered Substances Database.

<https://echa.europa.eu/search-for-chemicals>

IARC (International Agency for Research on Cancer). 2023. Agents Classified by the IARC Monographs, Volumes 1–129. <https://monographs.iarc.who.int/list-of-classifications/>

NTP (National Toxicology Program). 2023. Report on Carcinogens, Fifteenth Edition.; Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. <https://ntp.niehs.nih.gov/go/roc14>

Disclaimer:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Revision Indicator: This is a new Safety Data Sheet.

Creation Date: February 10, 2023