



Fundamentals Underglazes

SAFETY DATA SHEET (SDS)

Version: 01

Date of Issue: July 15, 2025

According to: Regulation (EC) No. 1272/2008
Regulation (EC) No 1907/2006

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

Unique Formula Identifier: Not required as the product does not pose human health concerns.

Other: None known

Product Description: Coloured 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 43026USA

EU Contact:

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: Regulation (EC) No 1272/2008 [CLP]

| Classification(s) | Physical | Health | Environment |
|---------------------|----------------|----------------|--|
| | Not classified | Not classified | Acute aquatic toxicity (Category 3) (H402) ^a Chronic aquatic toxicity (Category 3) (H412) ^a |
| SCL and/or M-factor | N/A | N/A | N/A |

| | | | |
|---------------------------------|-----|-----|-----|
| Classification Procedure | N/A | N/A | N/A |
|---------------------------------|-----|-----|-----|

^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

- This product is not expected to be endocrine disrupting.
- 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.

| | Specific Concentration Limit | Multiplying-Factor | Acute Toxicity Estimate |
|--------------------------|------------------------------|--------------------|--|
| Fundamentals Underglazes | N/A | N/A | >2000 mg/kg (oral/dermal) >20 mg/L (inhalation) |

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.

7.3 Specific end use(s)

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

Section 8– Exposure Controls / Personal Protection

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 ** Respirable fraction *** Total **** Respirable ***** Multiplied with the material density | | | | | |

R Measured as respirable fraction of the aerosol

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: | Liquid | | |
| Colour: | See Section 1.1 | Partition Coefficient n-octanol/water: | Not available |
| Odour/Odour threshold: | Not available | | |
| Melting/freezing point: | Not available | pH (as supplied): | 8 - 9 |
| Boiling point and boiling range: | Not available | Solubility: | Not available |
| Flammability: | Not available | Kinematic viscosity: | Not available |
| Upper/lower explosive limits: | Not available | Vapour pressure: | Not available |
| Flash point: | Not available | Density: | Not available |
| Auto-ignition temperature: | Not available | Relative vapour density | Not available |
| Decomposition temperature: | Not available | Particle characteristics: | Not available |

9.2.1 Information with Regard to Physical Hazard Classes

| | |
|--|---------------|
| Explosives | Not available |
| Flammable gases | Not available |
| Aerosols | Not available |
| Oxidising gases | Not available |
| Gases under pressure | Not available |
| Flammable liquids | Not available |
| Flammable solids | Not available |
| Self-reactive substances and mixtures | Not available |
| Pyrophoric liquids | Not available |
| Pyrophoric solids | Not available |
| Self-heating substances and mixtures | Not available |
| Substances and mixtures, which emit flammable gases in contact with water | Not available |
| Oxidising liquids | Not available |
| Oxidizing solids | Not available |
| Organic peroxides | Not available |
| Corrosive to metals | Not available |
| Desensitised explosives | Not available |

9.2.2 Other Safety Characteristics

| | |
|---|---------------|
| Mechanical sensitivity | Not available |
| Self-accelerating polymerisation temperature | Not available |
| Formation of explosible dust/air mixtures | Not available |
| Acid/alkaline reserve; (e) evaporation rate | Not available |
| Miscibility | Not available |
| Conductivity | Not available |
| Corrosiveness | Not available |
| Gas group | Not available |
| Redox potential | Not available |
| Radical formation potential | Not available |
| Photocatalytic properties | Not 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. |

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

- This product is not expected to be endocrine disrupting

11.2.2 Information on other hazards

- No other hazards to note.

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 other 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 Endocrine disrupting properties

- This product is not expected to be endocrine disrupting.

12.7 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 | None |
| 14.6 Special precautions for user | None |
| 14.7 Maritime transport in bulk according to IMO instruments | Not applicable |

Section 15 – Regulatory Information

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**.

European Union

Seveso Directive (2012/18/EU): Nickel is listed. No other components in this product are listed.

Regulation (EC) No. 1005/2009, Annex I and II: No components in this product are listed.

Regulation (EU) No. 649/2012, Annex I, Parts I-III: Arsenic compounds, cadmium and its compounds, and mercury and its compounds are listed. No other components in this product are listed.

Regulation (EU) No. 2019/1021, Annex I: No components in this product are listed.

Germany:

Wassergefährdungsklasse (water hazard class): WGK 1 – Schwach wassergefährdend (low hazard to waters)

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 Industrial Hygienists | MARPOL: Maritime Pollution |
| ATE: Acute Toxicity Estimate | mg/kg: Milligrams per kilogram |
| CAS: Chemical Abstract Service Number | M-factor: Multiplying factor |
| CLP: Classification, Labelling and Packaging Regulation (EC) No. 1272/2008 | N/A: Not applicable |
| DFG: German Research Foundation | NIOSH: National Institute for Occupational Safety & Health |
| EC: European Commission | NOEC: No observed effect concentration |
| ECHA: European Chemicals Agency | NTP: National Toxicology Program |
| EC ₁₀ : Concentration causing a predetermined effect to 10% of the population | PBT: Persistent, Bioaccumulative and Toxic |
| EC ₅₀ : Concentration causing a predetermined effect to 50% of the population | PPE: Personal Protective Equipment |
| EU: European Union | REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals |
| EINECS: European Inventory of Existing Commercial Substances | SCL: Specific Concentration Limit |
| GHS: Globally Harmonized System | SDS: Safety Data Sheet |
| IARC: International Agency for Research on Cancer | TLV: Threshold limit value |
| IBC: International Bulk Chemical | TWA: Time Weighted Average (8-hour) |
| IMO: International Maritime Organization | UN: United Nations |
| LC ₅₀ : Lethal concentration to 50% of the population | vPvB: very Persistent, very Bioaccumulative |
| MAK: Maximale Arbeitsplatzkonzentration (maximum workplace concentration) | VOC: Volatile Organic Compound |

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.

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