SAFETY DATA SHEET **SDS: 2023**

Section 1: Identification of the substance / mixture and of the company / undertaking

Product: **Vitracolour Stain - Dark Blue**

Recommended for use in the formulation of glazes / stains / slips for decorating ceramic ware.

Section 2: Hazard Identification

EC Regulation Criteria:
Danger, Repr. 1B, May damage fertility. Suspected of damaging the unborn child.
Aquatic Chronic 2, Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects: N/A

Label Elements / Hazard Pictograms: DANGER

Hazard Statements:
H360Fd May damage fertility. Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.
Precautionary Statements:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P308+P313 IF exposed or concerned: Get medical advice/attention.
P391 Collect spillage.

Special Provisions: None. Contains Reaction mass of cobalt olivine and crystalline silicon dioxide. Special provisions according to Annex XVII of REACH and subsequent amendments: None. Other hazards No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1% Other Hazards: None

Cont'd …

Section 3: Composition / information on ingredients

Hazardous components within the meaning of the CLP regulation and related classification: >= 90%
reaction mass of cobalt olivine and crystalline silicon dioxide
CAS: 68187-40-6, EC: 701-439-7

Repr. 1B H360Fd Aquatic Chronic H411

Section 4: First Aid Measures

Ingestion:	Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.
Inhalation:	Move affected personnel to fresh air, keep warm and at rest.
Skin:	Remove contaminated clothing and was affected areas thoroughly with soap and water. If skin irritation or rash occurs, seek medical advice.
Eyes:	Irrigate eyeball thoroughly with water for at least 10 minutes. If discomfort persists, seek medical attention.

Section 5: Firefighting Measures

Extinguishing Media:	Use fire-extinguishing media suitable for the surrounding fire – Water / Carbon Dioxide / Dry Powder
Note for fire-fighters:	Use suitable breathing apparatus. Collect contaminated fire extinguishing water separately – do not discharge this waste into drains or water courses.

Section 6: Accidental Release Measures

Personal precautions:	Wear protective clothing as per any relevant risk assessment. Provide adequate ventilation.
Environmental precautions:	Do not allow to enter soil / subsoil. Do not allow to enter surface water or drains.
Methods and material for containment / cleaning up:	Wash with plenty of water

Section 7: Handling and Storage

Precautions for sale handling:	Avoid contact with skin and eyes, inhalation of vapours and mists. Exercise the greatest care when handling or opening the container. Do not eat or drink while working. See also section 8 for recommended protective equipment. Avoid release to the environment.
Storage precautions:	Store in a dry place – avoiding extremes of temperature. Keep away from food / drink and animal feeding stuffs.

Cont'd ….

Section 8: Exposure Controls / Personal Protection

Exposure controls / personal protection:

Control Parameters:
According to REACH Annex II, this SDS section shall list the currentl applicable national limit values, also known as Occupational Exposure Limits (OELs), and the legal basis for each of them, in the EU Member State to which the Data Sheet is being provided. Likewise, information on current recommended monitoring procedures is to be provided.

The GESTIS Database on International Limit Values (http://limitvalue.ifa.dguv.de/ [link checked May 2022] can be used as a source for international OELs.

Several countries set limit values for Cobalt and its compounds. However, only Finland and Romania have set limit values for Tricobalt tetraoxide (the cobalt substances used for the read-across for the inhalation route). No occupational exposure limit available.

DNEL Exposure Limit Values
Reaction mass of cobalt olivine and crystalline silicon dioxide - CAS: 68187-40-6
Exposure: Inhalation - Frequency: Long Term, systemic effects - Endpoint: Information for Workers_No hazard identified.
Exposure: Inhalation - Frequency: Systemic effects(acute) - Endpoint: Information for Workers_No hazard Identified.
Worker Professional: 40 µg/m³ - Exposure: Inhalation - Frequency: Long Term, local effects - Endpoint: Data for workers - Notes: based on Cobalt
Exposure: Inhalation - Frequency: Local effects(acute) - Endpoint: Information for Workers_No hazard Identified
Exposure: Dermal - Frequency: Long Term, systemic effects - Endpoint: Information for Workers_No hazard Identified
Exposure: Dermal - Frequency: Systemic effects(acute) - Endpoint: Information for Workers_No hazard Identified
Exposure: Dermal - Frequency: Long Term, local effects - Endpoint: Information for Workers_No hazard Identified
Exposure: Dermal - Frequency: Local effects(acute) - Endpoint: Information for Workers_No hazard identified
Exposure: Eye - Frequency: Local effects - Endpoint: Information for Workers_No hazard identified
Exposure: Inhalation - Frequency: Long Term, systemic effects - Endpoint: General population_No hazard identified
Exposure: Inhalation - Frequency: Systemic effects(acute) - Endpoint: General population_No hazard identified
Consumer: 8 µg/m³ - Exposure: Inhalation - Frequency: Long Term, local effects - Endpoint: General population - Notes: based on Cobalt
Consumer: 15.9 µg/m³ - Exposure: Inhalation - Frequency: Long Term, local effects - Endpoint: General population - Notes: Corresponds to reaction mass of cobalt olivine and crystalline silicon dioxide Exposure: Inhalation - Frequency: Local effects(acute) - Endpoint: General population_No hazard identified Exposure: Dermal - Frequency: Long Term, systemic effects - Endpoint: General population_No hazard Identified

Cont.d ….

Exposure: Dermal - Frequency: Long Term, local effects - Endpoint: General population_No hazard Identified
Exposure: Dermal - Frequency: Local effects(acute) - Endpoint: General population_No hazard Identified
Consumer: 0.0298 mg/kg bw/d - Exposure: Oral - Frequency: Long Term, systemic effects - Endpoint: General population - Notes: based on Cobalt
Consumer: 0.059 mg/kg bw/d - Exposure: Oral - Frequency: Long Term, systemic effects –
Endpoint: General population - Notes: Corresponds to reaction mass of cobalt olivine and crystalline silicon dioxide
Exposure: Oral - Frequency: Systemic effects(acute) - Endpoint: General population_No hazard identified
Exposure: Eye - Frequency: Local effects - Endpoint: General population_No hazard identified

PNEC Exposure Limit Values
Threshold concentrations for the environment are based on elemental cobalt concentrations.
*Fresh water sediments, Marine water sediment and Soil (agricultural) are added to the natural background concentration of cobalt.
Reaction mass of cobalt olivine and crystalline silicon dioxide - CAS: 68187-40-6
Target: Intermittent freshwater - Value: 0.62 µg/l
Target: Freshwater sediments - Value: 53.8 mg/kg dw/d - Notes: *
Target: Marine water - Value: 2.36 µg/l
Target: Marine water sediments - Value: 69.8 mg/kg dw/d - Notes: *
Target: Microorganisms in sewage treatments - Value: 0.37 mg/l
Target: Soil (agricultural) - Value: 10.9 mg/kg dw/d - Notes: *
Target: Food chain - Type of hazard: No potential for bioaccumulation
Target: Air - Type of hazard: No hazard identified

Refer to section 11 of the SDS for information on PNEC derivation. Guidance on how to comply with these PNECs is provided in the attached Annex.

Exposure Controls:

Protective equipment:	Respirator / Safety Goggles / Gloves. Ensure adequate ventilation is available and observe any occupational exposure limits for the product – see guidance Note EH40 latest edition.
Eye Protection:	Eyewear complying with an approved standard should be worn if a risk assessment indicated eye contact is possible. Dust-resistant, chemical splash goggles are recommended.
Hand Protection:	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible.
Respiratory Protection:	Respiratory protection must be used if the airborne contamination exceeds the airborne contamination exceeds the recommended OEL. Use adequate protective respiratory equipment, at least FPP1 – ideally FPP3 mask

Cont'd …..

Section 9: Physical and Chemical Properties

Appearance:	Powder
Odour:	Odourless

Section 10: Stability and Reactivity

Reactivity:	Stable under normal conditions and when used as recommended
Stability:	Stable under normal conditions and when used as recommended
Conditions / Materials to avoid:	No specific data available

Section 11: Toxicological Information

Information of toxicological effects:
The information provided in this section is consistent with the information provided in the REACH chemical safety report (CSR) for Reaction mass of cobalt olivine and crystalline silicon dioxide. All available toxicological data have been evaluated for relevance and reliability.
Toxicological information of the main substances found in the mixture: Reaction mass of cobalt olivine and crystalline silicon dioxide - CAS: 68187-40-6
Acute Toxicity:
Test: LD50 - Route: Oral - Species: Rat >= 2000 mg/kg bw - Source: OECD 423.Based on available data, the classification criteria are not met
Test: LC50 (4h) - Route: Inhalation - Species: Rat = 5.05 mg/l - Duration: 4h - Source: OECD 436.Based on available data, the classification criteria are not met
Skin Corrosion / Irritation:
Route: cutaneous - Source: OECD 439.Based on available data, the classification criteria are not met
Serious Eye Damage / Irritation:
Route: Eyes - Source: OECD 492.Based on available data, the classification criteria are not met
Respiratory or skin Sensitisation:
Route: Skin - Source: OECD 429.Based on available data, the classification criteria are not met
Germ Cell Mutagenicity:
Test: Based on available data, the classification as germ cell mutagen are not met. Carcinogenicity:
Test: No data available
Reproductivity Toxicity:
Test: Category 1B (reproductive) based on GHS criteria
STOT – Single Exposure:
Test: LD50 - Route: Oral - Species: Rat >= 2000 mg/kg bw - Source: OECD 423.Based on available data, the classification criteria are not met
Test: LC50 (4h) - Route: Inhalation - Species: Rat = 5.05 mg/l - Duration: 4h - Source: OECD 436. Based on available data, the classification criteria are not met
STOT – Repeated Exposure:
Test: NOAEL - Route: Oral - Species: Rat = 3 mg/kg - Duration: 90d - Source: OECD 408.Based on available data, the classification criteria are not met
Test: NOAEC - Route: Inhalation - Species: human = 0.12 mg/m3 - Source: Based on available data, the classification criteria are not met
Information of other hazards:
Endocrine disrupting properties: No endocrine disruptor substances present in concentration >= 0.1%

Cont'd ….

Section 12: Ecological Information

The aquatic hazard potential of Reaction mass of cobalt olivine and crystalline silicon dioxide is assessed based on the release of cobalt ions, when no data on the substance is available. A conservative read-across approach is applied based on all available information for various inorganic cobalt substances, and the fate of released cobalt ions can eventually be considered comparable to the general fate of cobalt ions in the environment.

The information provided in this section is consistent with the information provided in the REACH chemical safety report (CSR) for Reaction mass of cobalt olivine and crystalline silicon dioxide.

Toxicity:
The aquatic toxicity data of Reaction mass of cobalt olivine and crystalline silicon dioxide indicate that its potential for acute toxicity is significantly lower than the acute aquatic toxicity of soluble cobalt salts. The EC/LC50 values of Reaction mass of cobalt olivine and crystalline silicon dioxide for all three trophic levels are above the classification criteria for acute (short-term) aquatic hazard. Sufficient data on the acute aquatic toxicity of Reaction mass of cobalt olivine and crystalline silicon dioxide in marine water are not available. Thus, read-across to the assessment entity soluble cobalt substances is made since cobalt cations determine the fate and toxicity in the environment. Use with appropriate work techniques, avoiding the dispersion of the product in the environment. Reaction mass of cobalt olivine and crystalline silicon dioxide –
CAS: 68187-40-6
Aquatic toxicity - Endpoint: LC50 - Species: Danio rerio > 10000 mg/l - Duration h: 96 - Notes: OECD 203, mortality; Reaction mass of cobalt olivine and crystalline silicon dioxide Aquatic toxicity - Endpoint: EC50 - Species: Daphnia magna = 6840 mg/l - Duration h: 48 - Notes: OECD 202, immobilisation; Reaction mass of cobalt olivine and crystalline silicon dioxide

Aquatic toxicity - Endpoint: EC50 - Species: Pseudokircherniella subcapitata = 89 mg/l - Duration h: 72 - Notes: OECD 201, growth rat; Reaction mass of cobalt olivine and crystalline silicon dioxide
Aquatic acute toxicity - Endpoint: LC50 - Species: Danio rerio, Oncorhynchus mykiss, Pimephales promelas species between 1.5-85 mg/l - Duration h: 96 - Notes: ASTM guideline, USEPA; cobalt dichloride, based on mortality a) Aquatic acute toxicity - Endpoint: EC50 - Species: Ceriodaphnia dubia, Chironomus tentans, Lymenaea stagnalis, Daphnia magna, Hyalella azteca, Chironomus tentans, Aeolosoma sp. Asellus intermedius, Lumbriculus variegatus, Gammarus fasciatus between 0.61-429 mg/l - Duration h: 48 - Notes: ASTM guideline, USEPA;OECD 202, cobalt dichloride, based on mortality and immobilization

Aquatic acute toxicity - Endpoint: EC50 - Species: Dendraster excentricus, Crassostrea sp., Stronglyocentrotus purpuratus, Mytilus Galloprovincialis, Crassostrea gigas,Tisbe holothuriae between 2.32-3.7 mg/l - Duration h: 48 - Notes: ASTM; cobalt dichloride, based on mortality and proportion normal a) Aquatic acute toxicity - Endpoint: EC50 - Species: Pseudokirchneriella subcapitata, Chlamydomonas reinhardtii between 90-485 µg/L - Duration h: 72 - Notes: OECD 201, cobalt dichloride, based on growth rat
Aquatic acute toxicity - Endpoint: EC50 - Species: Champia parvula, Skeletonema costatum, Dunaliella tertiolecta. between 24.1-100000 µg/L - Duration h: 72 - Notes: ASTM, USEPA, OECD 201, cobalt dichloride, based on growth rat, cystocarp development
Aquatic chronic toxicity - Endpoint: No relevant information available in the CSR of Reaction mass of cobalt olivine and crystalline silicon dioxide. - Species: Freshwater fish
Aquatic chronic toxicity - Endpoint: No relevant information available in the CSR of Reaction mass of cobalt olivine and crystalline silicon dioxide. - Species: Freshwater invertebrates

Cont'd …..

Aquatic chronic toxicity - Endpoint: EC10 - Species: Pseudokirchneriella subcapitata, Chlamydomonas reinhardtii between 22-296 µg/L - Duration h: 72 - Notes: OECD 201, Cobalt dichloride, based on growth rate. Aquatic chronic toxicity - Endpoint: No relevant information available in the CSR of Reaction mass of cobalt olivine and crystalline silicon dioxide. - Species: Marine fish. Aquatic chronic toxicity - Endpoint: No relevant information available in the CSR of Reaction mass of cobalt olivine and crystalline silicon dioxide. - Species: Marine invertebrates. Aquatic chronic toxicity - Endpoint: EC10 - Species: Champia parvula, Skeletonema costatum, Dunaliella tertiolecta. between 1.23-11961 µg/L - Notes: Saltwater, cobalt dichloride, based on production, growth rate, Terrestrial toxicity - Endpoint: EC10 - Species: Microorganisms in sewage treatment = 3.73 mg/l - Duration h: 0.5 - Notes: OECD 209, respiration inhibition; Cobald dichloride. Terrestrial toxicity - Endpoint: EC50 - Species: Microorganisms in sewage treatment = 120 mg/l - Duration h: 0.5 - Notes: OECD 209, respiration inhibition; Cobalt dichloride The environmental hazard assessment of Reaction mass of cobalt olivine and crystalline silicon dioxide is based on cobalt ions and the PNEC is expressed accordingly.

Persistence and degradability – N/A

Bioaccumulative potential - Reaction mass of cobalt olivine and crystalline silicon dioxide –
CAS: 68187-40-6 No relevant information available in the CSR of Reaction mass of cobalt olivine and crystalline silicon dioxide. Based on the available information, there is no indication of a bioaccumulation potential and, hence, secondary poisoning is not considered relevant.

Mobility in soil - Reaction mass of cobalt olivine and crystalline silicon dioxide - CAS: 68187-40-6 Mobile - Test: log kpsoil 3.47

Results of PBT and vPvB assessment – vPvB Substances: None - PBT Substances: None

Endocrine disrupting properties - No endocrine disruptor substances present in concentration >= 0.1% No REACH CSR relevant data available for Reaction mass of cobalt, olivine and crystalline silicon dioxide.

Other Adverse Effects – N/A

Section 13: Disposal Considerations

Recover any waste and dispose of in accordance with local / national / international regulations.

Section 14: Transport Information

UN number
ADR-UN number: 3077 IATA-Un number: 3077 IMDG-Un number: 3077

UN proper shipping name
IATA-Shipping Name: TOXIC SUBSTANCE FOR THE ENVIRONMENT, SOLID, NOS
IMDG-Shipping Name: SUBSTANCE POTENTIALLY DANGEROUS FOR THE ENVIRONMENT – NEP

Cont'd ….

Transport hazard class(es) ADR-Class: 9
ADR-Label: 9+MA
ADR - Hazard identification number: 90 IATA-Class: 9
IATA-Label: 9+MA
IMDG-Class: 9
IMDG-Label: 9+MA
Packing group
ADR-Packing Group: III
IATA-Packing group: III
IMDG-Packing group: III
Environmental hazards
Marine pollutant: MARINE POLLUTANT IMDG-EMS: F-A,S-A
Special precautions for user Rail
(RID): 3077
IATA-Passenger Aircraft: 956 IATA-Cargo Aircraft: 956
IMDG-Shipping Name: SUBSTANCE POTENTIALLY DANGEROUS FOR THE ENVIRONMENT – NEP

Section 15: Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture Dir. 98/24/EC (Risks related to chemical agents at work) Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) 2015/830
Regulation (EU) n. 453/2010 (Annex II)
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2020/878

Cont'd ….

Section 16: Other Information

Full text of phrases referred to in Section 3:
H360Fd May damage fertility. Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.

Hazard Class & Category	Code	Description
Repr. 1B	3.7/1B	Reproductive toxicity, Category 1B
Aquatic Chronic 2	4.1/C2	Chronic (long term aquatic hazard, category 2

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) No 1272/2008	Classification Procedure
Repr. 1B, H360FD	Calculation Method
Aquatic Chronic 2, H41	Calculation Method

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE: Acute Toxicity Estimate
ATEmix: Acute toxicity Estimate (Mixtures)
CAS: Chemical Abstracts Service (division of the American Chemical Society).
CLP: Classification, Labeling, Packaging.
DNEL: Derived No Effect Level.
EINECS: European Inventory of Existing Commercial Chemical Substances.
GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO: International Civil Aviation Organization. ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
PNEC: Predicted No Effect Concentration.
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWA: Time-weighted average
WGK: German Water Hazard Class

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended. This MSDS cancels and replaces any preceding release.

Cont'd ….

The information contained in this safety data sheet has been prepared using the best available information, however in view of technical developments, this may alter.
The material must only be used for its stated purpose and the information contained within this data sheet is offered solely for use in the evaluation of this product in respect of safety, health and environmental hazards. Due to the many factors outside our control when using this product, we cannot accept liability for any injury, accident, loss or damage caused through its use.