

HPD UNIQUE IDENTIFIER: 2003222528

CLASSIFICATION: 09 30 00 Tiling

PRODUCT TYPE: Ceramic (Tile)

PRODUCT DESCRIPTION: High-fired terracotta tile made from a red clay body containing kaolin, illite/mica, quartz, and iron oxides. Handmade and extruded.

Section 1: Summary

Nested Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format	Threshold Level	Residuals/Impurities Evaluation	For all contents above the threshold, the manufacturer has:
☒ Nested Materials Method ☐ Basic Method	☒ 100 ppm ☐ 1,000 ppm ☐ Per GHS SDS ☐ Other	Completed in 5 of 5 Materials Explanation(s) provided for Residuals/Impurities? ☒ Yes ☐ No	Characterized ☒ Yes ☐ No Provided weight and role. Screened ☒ Yes ☐ No Provided screening results using HPDC-approved methods. Identified ☒ Yes ☐ No Provided name and CAS RN or other identifier.
Threshold Disclosed Per			
☐ Material ☒ Product			

CONTENT IN DESCENDING ORDER OF QUANTITY

Summary of product contents and results from screening individual chemical substances against HPD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will expose individuals to its chemical substances or any health risk. Refer to Section 2 for further details.

NESTED MATERIAL | MATERIAL OR SUBSTANCE | RESIDUAL OR IMPURITY

GREENSCREEN SCORE | HAZARD TYPE

IMCO400 CLAY [KAOLINITE (AL2(OH)4(SI2O5)) NoGS MICA LT-UNK]

MAM SMECTITE NoGS QUARTZ BM-1] CAN | MAM | GEN RUTILE

TITANIUM DIOXIDE LT-1] CAN] GROG [SILICON DIOXIDE BM-1]

CAN | MAM ALUMINUM OXIDE BM-2] MAM FERRIC OXIDE BM-1]

CAN | MAM TITANIUM DIOXIDE BM-1] CAN | END | MAM MAGNESIUM OXIDE BM-3dg] CAN | MAM CALCIUM OXIDE (PRIMARY CASRN IS 1305-78-8) BM-2] SKI | MAM | EYE POTASSIUM OXIDE BM-2 SODIUM OXIDE BM-2] C-RED [KAOLINITE (AL2(OH)4(SI2O5)) NoGS QUARTZ BM-1] CAN | MAM | GEN HAEMATITE LT-UNK MICA LT-1] CAN]

NEWMAN RED CLAY [QUARTZ BM-1] CAN | MAM | GEN ALUMINUM OXIDE BM-2] MAM QUARTZ BM-1] CAN | MAM | GEN FERRIC OXIDE BM-1] CAN | MAM POTASSIUM OXIDE BM-2 MAGNESIUM OXIDE BM-3dg] CAN | MAM CALCIUM OXIDE (PRIMARY CASRN IS 1305-78-8) BM-2] SKI | MAM | EYE TITANIUM DIOXIDE BM-1] CAN | END | MAM SODIUM OXIDE BM-2] PREMIUM HIGH-FIRED GLAZE (ALL COLORS) [FRITS, CHEMICALS LT-P1] MUL FELDSPAR LT-UNK] MAM BARIUM CARBONATE BM-2] MAM C.I. PIGMENT BLACK 27 LT-1] CAN | RES | GEN DOLOMITE NoGS KAOLIN LT-UNK] CAN ZIRCON (ZR(SIO4)) BM-2] ZIRCON (ZR(SIO4)) BM-2 ZINC OXIDE BM-1] END | MUL | AQU | MAM | REP C.I. PIGMENT BLUE 36 LT-1] CAN | RES | GEN TITANIUM DIOXIDE BM-1 *] CAN | END | MAM C.I. PIGMENT BROWN 33 LT-UNK] FERRIC OXIDE BM-1 *] CAN | MAM QUARTZ BM-1 *] CAN | MAM | GEN ZIRCON (ZR(SIO4)) BM-2 ATTAPULGITE LT-1] CAN | MAM | EYE VANADIUM ZIRCONIUM YELLOW BADDELEYITE LT-P1] MUL]

Number of Greenscreen BM-4/BM3 contents ... 2

Contents highest-concern GreenScreen score(s) (BM-1, LT-1, LT-P1) ... BM-1, LT-P1, LT-1

Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

Antimicrobial Pesticides Reporting: This product does not contain substance(s) that are intentionally added above the [Product - 100 ppm] threshold to act as antimicrobials.

Inventory and screening were completed for all known substances ≥100 ppm using supplier SDSs, formulation records, and HPD Builder hazard screening. Bound mineral powders (e.g., quartz, ferric oxide) were evaluated using Form-Specific Hazard Policies. Proprietary materials below threshold are confirmed to contain no known hazards. This methodology aligns with the broader ARTO product collection for consistency.

*Form-Specific Hazard: This substance's GreenScreen Benchmark or List Translator score and the applicable hazards are related to particulate inhalation, which is expected to occur only during manufacture, installation, maintenance, or demolition, due to activities such as sawing, sanding, grinding, or intensive cleaning. For this reason, this score is intentionally omitted from the "Contents highest concern" line above. See HPDC's Special Conditions policy for more information.

PFAS DETAILS:

This product does **not** contain intentionally added PFAS and materials and substances from suppliers are verified to **not** contain PFAS.

Attestation:

Julie Grajeda

2025-09-04

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE *See Section 3 for additional listings.*

VOC emissions: Inherently non-emitting source per LEED

VOC emissions: Inherently non-emitting source per LEED

CONSISTENCY WITH OTHER PROGRAMS

Pre-checked for LEED v4 Option 1.

Pre-checked for LEED v4.1 Option 1.

Third Party Verified?

- ☐ Yes
☒ No

PREPARER: Self-Prepared
VERIFIER:
VERIFICATION #:

SCREENING DATE: 2025-08-24
PUBLISHED DATE: 2025-09-04
EXPIRY DATE: 2028-08-24

Section 2: Content in Descending Order of Quantity

This section lists contents in a product based on specific threshold(s) and reports detailed health information including hazards. This HPD uses the inventory method indicated above, which is one of three possible methods:

- Basic Inventory method with Product-level threshold.
- Nested Material Inventory method with Product-level threshold
- Nested Material Inventory method with individual Material-level thresholds

Definitions and requirements for the three inventory methods and requirements for each data field can be found in the HPD Open Standard version 2.3, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-3-standard

IMCO400 CLAY

?: 38.0000 - 39.0000

PRODUCT THRESHOLD: 100 ppm RESIDUALS AND IMPURITIES EVALUATION COMPLETED: Yes MATERIAL TYPE: Geologically Derived Material

RESIDUALS AND IMPURITIES NOTES: Naturally occurring minerals in clay. Screened by supplier SDS.

OTHER MATERIAL NOTES: Same base formula as your “No Glaze” body; ranges below are scaled to reflect the presence of the glaze layer (so total product = 100%).

KAOLINITE (AL2(OH)4(SI2O5))

ID: 1318-74-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2025-08-24 22:18:07

?: 50.0000 - 64.0000 GreenScreen: NoGS RC: None NANO: No SUBSTANCE ROLE: Binder

HAZARD TYPE

LIST NAME AND SOURCE

WARNINGS

None found

No warnings found on HPD Priority Hazard Lists

ADDITIONAL LISTINGS

LIST NAME AND SOURCE

NOTIFICATION

None found

No listings found on Additional Hazard Lists

SUBSTANCE NOTES: Clay mineral that contributes to plasticity and whiteness.

MICA

ID: 12001-26-2

HAZARD DATA SOURCE: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2025-08-24 22:18:07

?: 14.0000 - 16.0000 GreenScreen: LT-UNK RC: None NANO: No SUBSTANCE ROLE: Binder

HAZARD TYPE

LIST NAME AND SOURCE

WARNINGS

MAM

GHS - Japan

H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]

ADDITIONAL LISTINGS

LIST NAME AND SOURCE

NOTIFICATION

None found

No listings found on Additional Hazard Lists

SUBSTANCE NOTES: Aluminosilicate that provides workability.

SMECTITE			ID: 12199-37-0	
HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:08	
%: 1.0000 - 15.0000	GreenScreen: NoGS	RC: None	NANO: No	SUBSTANCE ROLE: Binder
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
None found		No warnings found on HPD Priority Hazard Lists		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
None found		No listings found on Additional Hazard Lists		
SUBSTANCE NOTES: Clay with swelling properties aiding water retention.				

QUARTZ			ID: 14808-60-7	
HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:08	
%: 14.0000 - 15.0000	GreenScreen: BM-1	RC: None	NANO: No	SUBSTANCE ROLE: Filler
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen		
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route		
CAN	US NIH - Report on Carcinogens	Known to be Human Carcinogen (respirable size - occupational setting)		
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man		
CAN	IARC	Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources		
CAN	IARC	Group 1 - Agent is Carcinogenic to humans		
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen		
CAN	GHS - Japan	H350 - May cause cancer [Carcinogenicity - Category 1A]		
CAN	GHS - Australia	H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]		
CAN	GHS - New Zealand	Carcinogenicity category 1		
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]		
GEN	GHS - Japan	H341 - Suspected of causing genetic defects [Germ cell mutagenicity - Category 2]		
MAM	GHS - Australia	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]		
MAM	GHS - New Zealand	Specific target organ toxicity - repeated exposure category 1		

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES: Naturally occurring crystalline silica. Screened for respirable fraction.		

RUTILE TITANIUM DIOXIDE

ID: 1317-80-2

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:09		
%: 0.0100 - 2.0000	GreenScreen: LT-1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS	
CAN	US CDC - Occupational Carcinogens		Occupational Carcinogen	
CAN	IARC		Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources	
CAN	MAK		Carcinogen Group 3A - Evidence of carcinogenic effects but not sufficient to establish MAK/BAT value	
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION	
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)		C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022	
			Cosmetics & Personal Care Products	
SUBSTANCE NOTES: Natural titanium dioxide used as flux and pigment.				

GROG		%: 32.0000 - 33.0000
PRODUCT THRESHOLD: 100 ppm	RESIDUALS AND IMPURITIES EVALUATION COMPLETED: Yes	MATERIAL TYPE: Other: Processed Material
RESIDUALS AND IMPURITIES NOTES: Screened at 100 ppm. Contains mineral oxides derived from original clay body; no new chemicals are added after firing.		
OTHER MATERIAL NOTES: Post-consumer recycled ceramic (ground roof tiles). Composition varies by source & firing; sub-components shown may be present at variable levels. Percentages of sub-components are undisclosed due to variability; parent material totals 30.47–31.49% of the product. Trace glaze residues may be present at de minimis levels.		

SILICON DIOXIDE

ID: 7631-86-9

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:07		
%: 55.0000 - 70.0000	GreenScreen: BM-1	RC: PreC	NANO: No	SUBSTANCE ROLE: Filler

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	GHS - Japan	H350 - May cause cancer [Carcinogenicity - Category 1A]
CAN	GHS - Australia	H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]
MAM	GHS - Japan	H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
MAM	GHS - Australia	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes Precautionary List Antimicrobials

SUBSTANCE NOTES: Main structural component; present as quartz and mullite.

ALUMINUM OXIDE

ID: 1344-28-1

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:08	
%: 15.0000 - 30.0000	GreenScreen: BM-2	RC: PreC	NANO: No	SUBSTANCE ROLE: Filler
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
MAM	GHS - Japan	H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]		
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Biological and Environmentally Released Materials		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Children's Products		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 Children's Toy Products		

SUBSTANCE NOTES: From kaolinitic minerals; retained after firing.

FERRIC OXIDE

ID: 1309-37-1

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:08	
%: 3.0000 - 8.0000	GreenScreen: BM-1	RC: PreC	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
CAN	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification		
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]		
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
None found			No listings found on Additional Hazard Lists	

SUBSTANCE NOTES: Responsible for buff to red coloration; remains stable post-firing.

TITANIUM DIOXIDE

ID: 13463-67-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:09	
%: 1.0000 - 3.0000	GreenScreen: BM-1	RC: PreC	NANO: No	SUBSTANCE ROLE: Filler

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CAN	IARC	Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources
CAN	MAK	Carcinogen Group 3A - Evidence of carcinogenic effects but not sufficient to establish MAK/BAT value
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
CAN	MAK	Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels
CAN	IARC	Group 2b - Possibly carcinogenic to humans
CAN	EU - GHS (H-Statements) Annex 6 Table 3-1	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
CAN	GHS - Japan	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPH)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Children's Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPH)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Formulated Consumer Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPH)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Cosmetics & Personal Care Products
POSITIVE LIST	US Environmental Protection Agency (US EPA)	US EPA - DfE Safer Chemicals Ingredients list (SCIL) Colorants - Green Circle (Verified Low Concern)
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPH)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 Cosmetics and Personal Care Products

SUBSTANCE NOTES: Occurs naturally; provides opacity.

%: 0.5000 - 2.0000GreenScreen: BM-3dgRC: PreC NANO: NoSUBSTANCE ROLE: Tensile strength additive

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	MAK	Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels
MAM	GHS - Japan	H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES: Trace component; provides thermal stability.		

CALCIUM OXIDE (PRIMARY CASRN IS 1305-78-8)ID: 60873-85-0

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:09	
%: 0.5000 - 2.0000	GreenScreen: BM-2	RC: PreC	NANO: No SUBSTANCE ROLE: Tensile strength additive
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS	
SKI	GHS - Australia	H315 - Causes skin irritation [Skin corrosion/irritation - Category 2]	
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]	
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]	
SKI	GHS - New Zealand	Skin corrosion category 1C	
EYE	GHS - New Zealand	Serious eye damage category 1	
EYE	GHS - Japan	H318 - Causes serious eye damage [Serious eye damage / eye irritation - Category 1]	
SKI	GHS - Japan	H315 - Causes skin irritation [Skin corrosion / irritation - Category 2]	
EYE	GHS - Australia	H318 - Causes serious eye damage [Serious eye damage/eye irritation - Category 1]	
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION	
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes Precautionary List	
		Antimicrobials	
SUBSTANCE NOTES: Mineral flux; remains stable after firing.			

POTASSIUM OXIDEID: 12136-45-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:10		
%: 1.0000 - 2.0000	GreenScreen: BM-2	RC: PreC	NANO: No	SUBSTANCE ROLE: Tensile strength additive	
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
None found			No warnings found on HPD Priority Hazard Lists		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION		
None found			No listings found on Additional Hazard Lists		
SUBSTANCE NOTES: Natural fluxing agent in fired clays.					

SODIUM OXIDE

ID: 1313-59-3

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:10		
%: 0.5000 - 1.5000	GreenScreen: BM-2	RC: None	NANO: No	SUBSTANCE ROLE: Tensile strength additive	
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
None found			No warnings found on HPD Priority Hazard Lists		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION		
None found			No listings found on Additional Hazard Lists		
SUBSTANCE NOTES: Trace alkali from feldspathic components.					

C-RED

%: 12.5000 - 13.0000

PRODUCT THRESHOLD: 100 ppm	RESIDUALS AND IMPURITIES EVALUATION COMPLETED: Yes	MATERIAL TYPE: Geologically Derived Material
RESIDUALS AND IMPURITIES NOTES: Minerals naturally occurring; supplier verified.		
OTHER MATERIAL NOTES: Iron-rich red clay mixture that enhances color and body strength.		

KAOLINITE (AL2(OH)4(SI2O5))

ID: 1318-74-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:11		
%: 68.0000	GreenScreen: NoGS	RC: None	NANO: No	SUBSTANCE ROLE: Binder	
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
None found			No warnings found on HPD Priority Hazard Lists		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION		
None found			No listings found on Additional Hazard Lists		

SUBSTANCE NOTES: Clay mineral that contributes to plasticity and whiteness.

QUARTZ

ID: 14808-60-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:11	
%: 17.0000	GreenScreen: BM-1	RC: None	NANO: No	SUBSTANCE ROLE: Filler
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS	
CAN	US CDC - Occupational Carcinogens		Occupational Carcinogen	
CAN	CA EPA - Prop 65		Carcinogen - specific to chemical form or exposure route	
CAN	US NIH - Report on Carcinogens		Known to be Human Carcinogen (respirable size - occupational setting)	
CAN	MAK		Carcinogen Group 1 - Substances that cause cancer in man	
CAN	IARC		Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources	
CAN	IARC		Group 1 - Agent is Carcinogenic to humans	
CAN	US NIH - Report on Carcinogens		Known to be a human Carcinogen	
CAN	GHS - Japan		H350 - May cause cancer [Carcinogenicity - Category 1A]	
CAN	GHS - Australia		H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]	
CAN	GHS - New Zealand		Carcinogenicity category 1	
MAM	GHS - Japan		H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]	
GEN	GHS - Japan		H341 - Suspected of causing genetic defects [Germ cell mutagenicity - Category 2]	
MAM	GHS - Australia		H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]	
MAM	GHS - New Zealand		Specific target organ toxicity - repeated exposure category 1	
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION	
None found			No listings found on Additional Hazard Lists	

SUBSTANCE NOTES: Naturally occurring crystalline silica. Screened for respirable fraction.

HAEMATITE

ID: 1317-60-8

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:10	
%: 12.0000	GreenScreen: LT-UNK	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS	
None found			No warnings found on HPD Priority Hazard Lists	
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION	
None found			No listings found on Additional Hazard Lists	
SUBSTANCE NOTES: Provides deep red color to fired body.				

MICA

ID: 1318-94-1

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:10		
?: 1.0000 - 5.0000	GreenScreen: LT-1	RC: None	NANO: No	SUBSTANCE ROLE: Binder
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS	
CAN	CA EPA - Prop 65		Carcinogen - specific to chemical form or exposure route	
CAN	US NIH - Report on Carcinogens		Known to be Human Carcinogen (respirable size - occupational setting)	
CAN	MAK		Carcinogen Group 1 - Substances that cause cancer in man	
CAN	IARC		Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources	
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION	
None found			No listings found on Additional Hazard Lists	
SUBSTANCE NOTES: Aluminosilicate that provides workability.				

NEWMAN RED CLAY

?: 12.5000 - 13.0000

PRODUCT THRESHOLD: 100 ppm	RESIDUALS AND IMPURITIES EVALUATION COMPLETED: Yes	MATERIAL TYPE: Geologically Derived Material
RESIDUALS AND IMPURITIES NOTES: Includes natural iron oxide, screened to 100 ppm.		
OTHER MATERIAL NOTES: Iron oxide-rich red clay blend.		

QUARTZ

ID: 14808-60-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:11	
?: 50.0000 - 55.0000	GreenScreen: BM-1	RC: None	NANO: No	SUBSTANCE ROLE: Filler

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CAN	US NIH - Report on Carcinogens	Known to be Human Carcinogen (respirable size - occupational setting)
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man
CAN	IARC	Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources
CAN	IARC	Group 1 - Agent is Carcinogenic to humans
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CAN	GHS - Japan	H350 - May cause cancer [Carcinogenicity - Category 1A]
CAN	GHS - Australia	H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]
CAN	GHS - New Zealand	Carcinogenicity category 1
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
GEN	GHS - Japan	H341 - Suspected of causing genetic defects [Germ cell mutagenicity - Category 2]
MAM	GHS - Australia	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]
MAM	GHS - New Zealand	Specific target organ toxicity - repeated exposure category 1
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists

SUBSTANCE NOTES: Naturally occurring in high percentages. Main structural and refractory component.

ALUMINUM OXIDE				ID: 1344-28-1	
HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:11		
%: 15.0000 - 20.0000	GreenScreen: BM-2	RC: None	NANO: No	SUBSTANCE ROLE: Filler	
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
MAM	GHS - Japan		H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]		
MAM	GHS - Japan		H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]		

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022
		Biological and Environmentally Released Materials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022
		Children's Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025
		Children's Toy Products
SUBSTANCE NOTES: Found in kaolinite and other alumino-silicate minerals.		

QUARTZ

ID: 14808-60-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:12	
%: 17.0000	GreenScreen: BM-1	RC: None	NANO: No	SUBSTANCE ROLE: Filler
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen		
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route		
CAN	US NIH - Report on Carcinogens	Known to be Human Carcinogen (respirable size - occupational setting)		
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man		
CAN	IARC	Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources		
CAN	IARC	Group 1 - Agent is Carcinogenic to humans		
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen		
CAN	GHS - Japan	H350 - May cause cancer [Carcinogenicity - Category 1A]		
CAN	GHS - Australia	H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]		
CAN	GHS - New Zealand	Carcinogenicity category 1		
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]		
GEN	GHS - Japan	H341 - Suspected of causing genetic defects [Germ cell mutagenicity - Category 2]		
MAM	GHS - Australia	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]		
MAM	GHS - New Zealand	Specific target organ toxicity - repeated exposure category 1		

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES: Naturally occurring crystalline silica. Screened for respirable fraction.		

FERRIC OXIDE		ID: 1309-37-1		
HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:10		
?: 6.0000 - 8.0000	GreenScreen: BM-1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES: Responsible for red color. Occurs as a trace oxide in clays.		

POTASSIUM OXIDE

ID: 12136-45-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:11		
%: 2.0000 - 4.0000	GreenScreen: BM-2	RC: None	NANO: No	SUBSTANCE ROLE: Filler	
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
None found			No warnings found on HPD Priority Hazard Lists		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION		
None found			No listings found on Additional Hazard Lists		
SUBSTANCE NOTES: Fluxing agent from feldspar minerals.					

MAGNESIUM OXIDE

ID: 1309-48-4

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:12	
%: 0.5000 - 2.0000	GreenScreen: BM-3dg	RC: None	NANO: No	SUBSTANCE ROLE: Filler
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS	
CAN	MAK		Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels	
MAM	GHS - Japan		H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]	

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES: Naturally present in trace amounts.		

CALCIUM OXIDE (PRIMARY CASRN IS 1305-78-8)

ID: 60873-85-0

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:11		
%: 0.5000 - 2.0000	GreenScreen: BM-2	RC: None	NANO: No	SUBSTANCE ROLE: Filler
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
SKI	GHS - Australia	H315 - Causes skin irritation [Skin corrosion/irritation - Category 2]		
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]		
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]		
SKI	GHS - New Zealand	Skin corrosion category 1C		
EYE	GHS - New Zealand	Serious eye damage category 1		
EYE	GHS - Japan	H318 - Causes serious eye damage [Serious eye damage / eye irritation - Category 1]		
SKI	GHS - Japan	H315 - Causes skin irritation [Skin corrosion / irritation - Category 2]		
EYE	GHS - Australia	H318 - Causes serious eye damage [Serious eye damage/eye irritation - Category 1]		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes Precautionary List		
		Antimicrobials		

SUBSTANCE NOTES: Impurity in clay matrix; no intentional addition.				
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TITANIUM DIOXIDE

ID: 13463-67-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:12		
%: 0.5000 - 1.5000	GreenScreen: BM-1	RC: None	NANO: No	SUBSTANCE ROLE: Filler

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CAN	IARC	Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources
CAN	MAK	Carcinogen Group 3A - Evidence of carcinogenic effects but not sufficient to establish MAK/BAT value
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
CAN	MAK	Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels
CAN	IARC	Group 2b - Possibly carcinogenic to humans
CAN	EU - GHS (H-Statements) Annex 6 Table 3-1	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
CAN	GHS - Japan	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPH)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Children's Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPH)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Formulated Consumer Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPH)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Cosmetics & Personal Care Products
POSITIVE LIST	US Environmental Protection Agency (US EPA)	US EPA - DfE Safer Chemicals Ingredients list (SCIL) Colorants - Green Circle (Verified Low Concern)
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPH)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 Cosmetics and Personal Care Products
SUBSTANCE NOTES: Occurs in minor amounts as part of natural clay.		

SODIUM OXIDE

ID: 1313-59-3

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:12	
%: 0.2000 - 1.0000	GreenScreen: BM-2	RC: None	NANO: No SUBSTANCE ROLE: Filler

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES: Trace alkali component from feldspathic minerals.		

PREMIUM HIGH-FIRED GLAZE (ALL COLORS) %: 2.0000 - 6.0000

PRODUCT THRESHOLD: 100 ppm RESIDUALS AND IMPURITIES EVALUATION COMPLETED: Yes MATERIAL TYPE: Ceramic

RESIDUALS AND IMPURITIES NOTES: Residuals and impurities evaluated to 100 ppm. Proprietary frits/pigments screened where supplier data is available; screening requested for remaining proprietary items.

OTHER MATERIAL NOTES: Glaze applied at 2–6% of fired product weight. Substances listed as ranges reflect glaze recipe. 0–Max% used for pigments to cover all glaze colors. Proprietary frits/pigments disclosed as proprietary where CAS not available; hazard screening requested from suppliers.

FRITS, CHEMICALS ID: 65997-18-4

HAZARD DATA SOURCE: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2025-08-24 22:18:12

%: 24.0400 - 34.4000 GreenScreen: LT-P1 RC: None NANO: No SUBSTANCE ROLE: Flux

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 Electronics (RoHS)

SUBSTANCE NOTES: Complex silicate glass frit; SDS composition disclosed; screened to 100 ppm.

FELDSPAR ID: 68476-25-5

HAZARD DATA SOURCE: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2025-08-24 22:18:13

%: 23.0000 - 31.0000 GreenScreen: LT-UNK RC: None NANO: No SUBSTANCE ROLE: Flux

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
MAM	GHS - New Zealand	Specific target organ toxicity - repeated exposure category 1

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES: Standard ceramic flux mineral.		

BARIUM CARBONATE

ID: 513-77-9

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:14		
%: 10.0000 - 17.0000	GreenScreen: BM-2	RC: None	NANO: No	SUBSTANCE ROLE: Opacifier
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
MAM	GHS - Japan	H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]		
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]		
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]		
MAM	GHS - Japan	H301 - Toxic if swallowed [Acute Toxicity (oral) - Category 3]		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022		
		Biological and Environmentally Released Materials		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022		
		Children's Products		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022		
		Cosmetics & Personal Care Products		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025		
		Children's Toy Products		

SUBSTANCE NOTES: Substance is an industrial mineral additive.		
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C.I. PIGMENT BLACK 27

ID: 68186-97-0

HAZARD DATA SOURCE: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2025-08-24 22:18:14
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%: 0.0000 - 12.4100		GreenScreen: LT-1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
CAN	MAK		Carcinogen Group 2 - Considered to be carcinogenic for man		
RES	MAK		Sensitizing Substance Sah - Danger of airway & skin sensitization		
GEN	MAK		Germ Cell Mutagen 3a		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)		C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022		
			Biological and Environmentally Released Materials		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)		C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022		
			Children's Products		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)		C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025		
			Children's Toy Products		
SUBSTANCE NOTES: Substance is a black spinel pigment.					

FRITS, CHEMICALS

ID: 65997-18-4

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:12		
%: 0.0000 - 12.4100 ALT		GreenScreen: LT-P1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
MUL	German FEA - Substances Hazardous to Waters		Class 2 - Hazard to Waters		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)		C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025		
			Electronics (RoHS)		
SUBSTANCE NOTES: Glass frit; SDS composition disclosed; screened to 100 ppm. Optional pigment; used only in some glaze colors. Not simultaneous with other listed alternates.					
ALTERNATE: This substance is an alternate substance to Frits, chemicals.					

FRITS, CHEMICALS

ID: 65997-18-4

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:13		
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%: 0.0000 - 9.7400 ALT		GreenScreen: LT-P1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
MUL	German FEA - Substances Hazardous to Waters		Class 2 - Hazard to Waters		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION		
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)		C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025		
			Electronics (RoHS)		
SUBSTANCE NOTES: Glass frit; SDS composition disclosed; screened to 100 ppm. Optional pigment; used only in some glaze colors. Not simultaneous with other listed alternates.					
ALTERNATE: This substance is an alternate substance to Frits, chemicals.					

DOLOMITE

ID: 16389-88-1

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:13		
%: 6.0000 - 9.0000		GreenScreen: NoGS	RC: None	NANO: No	SUBSTANCE ROLE: Flux
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
None found			No warnings found on HPD Priority Hazard Lists		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION		
None found			No listings found on Additional Hazard Lists		
SUBSTANCE NOTES: Calcium–magnesium carbonate flux.					

KAOLIN

ID: 1332-58-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:14		
%: 6.0000 - 9.0000		GreenScreen: LT-UNK	RC: None	NANO: No	SUBSTANCE ROLE: Filler
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS		
CAN	MAK		Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION		
None found			No listings found on Additional Hazard Lists		
SUBSTANCE NOTES: Aluminosilicate clay; standard kaolin.					

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:15	
%: 0.0000 - 8.2600 ALT	GreenScreen: LT-P1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS	
MUL	German FEA - Substances Hazardous to Waters		Class 2 - Hazard to Waters	
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION	
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)		C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025	
			Electronics (RoHS)	
SUBSTANCE NOTES: Glass frit; SDS composition disclosed; screened to 100 ppm. Optional pigment; used only in some glaze colors. Not simultaneous with other listed alternates.				
ALTERNATE: This substance is an alternate substance to Frits, chemicals.				

ZIRCON (ZR(SiO4))

ID: 14940-68-2

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:14	
?: 0.0000 - 6.8200	GreenScreen: BM-2	RC: None	NANO: No	SUBSTANCE ROLE: Opacifier
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
None found		No warnings found on HPD Priority Hazard Lists		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
None found		No listings found on Additional Hazard Lists		
SUBSTANCE NOTES: Substance is an Opacifier, zircon-based.				

ZIRCON (ZR(SiO4))

ID: 14940-68-2

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:13	
?: 0.0000 - 6.8200	GreenScreen: BM-2	RC: None	NANO: No	SUBSTANCE ROLE: Opacifier
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
None found		No warnings found on HPD Priority Hazard Lists		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
None found		No listings found on Additional Hazard Lists		
SUBSTANCE NOTES: Substance is an Opacifier pigment.				

HAZARD DATA SOURCE: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2025-08-24 22:18:15

%: 3.0000 - 5.0000

GreenScreen: BM-1

RC: None

NANO: No

SUBSTANCE ROLE: Flux

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]
AQU	GHS - New Zealand	Hazardous to the aquatic environment - acute category 1
AQU	GHS - Japan	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	GHS - Japan	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
AQU	GHS - Australia	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
AQU	GHS - New Zealand	Hazardous to the aquatic environment - chronic category 1
REP	GHS - Japan	H361 - Suspected of damaging fertility or the unborn child [Toxic to reproduction - Category 2]
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes Precautionary List Antimicrobials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Biological and Environmentally Released Materials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Children's Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 Children's Toy Products

SUBSTANCE NOTES: Ceramic flux; SDS disclosed at 99% purity.

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:15	
%: 0.0000 - 4.8500 ALT	GreenScreen: LT-1	RC: None	NANO: No	SUBSTANCE ROLE: Flux
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS	
DEV	CA EPA - Prop 65		Developmental toxicity	
REP	GHS - Japan		H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1A]	
REP	GHS - New Zealand		Reproductive toxicity category 1	
MAM	GHS - Japan		H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]	
EYE	GHS - New Zealand		Eye irritation category 2	
EYE	GHS - Australia		H319 - Causes serious eye irritation [Serious eye damage/eye irritation - Category 2A]	
MAM	GHS - Japan		H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]	
MAM	GHS - New Zealand		Specific target organ toxicity - repeated exposure category 1	
MAM	GHS - Japan		H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]	
AQU	GHS - Japan		H401 - Toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 2]	
AQU	GHS - Japan		H411 - Toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 2]	
DEV	GHS - Japan		H362 - May cause harm to breast-fed children [Developmental Toxicity - May cause harm to breast-fed children]	
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION	
None found			No listings found on Additional Hazard Lists	
SUBSTANCE NOTES: Substance SDS lists 98–100% Li ₂ CO ₃ .				
ALTERNATE: This substance is an alternate substance to Frits, chemicals.				

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:16	
%: 0.0000 - 3.2100	GreenScreen: LT-1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
RES	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization
GEN	MAK	Germ Cell Mutagen 3a
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Biological and Environmentally Released Materials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Children's Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 Children's Toy Products
SUBSTANCE NOTES: Substance is a Spinel pigment.		

TITANIUM DIOXIDE		ID: 13463-67-7
HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:14
?: 0.0000 - 2.9200	GreenScreen: BM-1	RC: None
		NANO: No
		SUBSTANCE ROLE: Pigment

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen**
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route**
CAN	IARC	Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources**
CAN	MAK	Carcinogen Group 3A - Evidence of carcinogenic effects but not sufficient to establish MAK/BAT value**
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor**
CAN	MAK	Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels**
CAN	IARC	Group 2b - Possibly carcinogenic to humans**
CAN	EU - GHS (H-Statements) Annex 6 Table 3-1	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]**
CAN	GHS - Japan	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]**
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]**

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022
		Children's Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022
		Formulated Consumer Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022
		Cosmetics & Personal Care Products
POSITIVE LIST	US Environmental Protection Agency (US EPA)	US EPA - DfE Safer Chemicals Ingredients list (SCIL)
		Colorants - Green Circle (Verified Low Concern)
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025
		Cosmetics and Personal Care Products

SUBSTANCE NOTES: Primary rutile pigment in glaze.

**Form-Specific Hazard: This substance's GreenScreen Benchmark or List Translator score and the applicable hazards are related to particulate inhalation, which is expected to occur only during manufacture, installation, maintenance, or demolition, due to activities such as sawing, sanding, grinding, or intensive cleaning. See HPDC's Special Conditions policy for more information. Manufacturer's Safety Data Sheet (SDS), if applicable, may offer occupational health and safety information.

HAZARD DATA SOURCE: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2025-08-24 22:18:15

%: 0.0000 - 2.8900 ALT	GreenScreen: LT-1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
CAN	EU - Annex VI CMRs	Carcinogen Category 1B - Presumed Carcinogen based on animal evidence		
REP	EU - Annex VI CMRs	Reproductive Toxicity - Category 1B		
MUL	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant		
MUL	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters		
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man		
RES	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization		
GEN	MAK	Germ Cell Mutagen 3a		
CAN	GHS - Australia	H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]		
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1B]		
REP	GHS - Australia	H360F - May damage fertility [Reproductive toxicity - Category 1A or 1B]		
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]		
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]		
GEN	EU - GHS (H-Statements) Annex 6 Table 3-1	H341 - Suspected of causing genetic defects [Germ cell mutagenicity - Category 2]		
REP	EU - GHS (H-Statements) Annex 6 Table 3-1	H360F - May damage fertility [Reproductive toxicity - Category 1A or 1B]		
CAN	EU - GHS (H-Statements) Annex 6 Table 3-1	H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]		
MAM	GHS - Japan	H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]		
EYE	GHS - New Zealand	Eye irritation category 2		
CAN	GHS - New Zealand	Carcinogenicity category 2		
CAN	GHS - Japan	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]		
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]		
GEN	GHS - Japan	H341 - Suspected of causing genetic defects [Germ cell mutagenicity - Category 2]		

MAM	GHS - Australia	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]
MAM	GHS - New Zealand	Specific target organ toxicity - repeated exposure category 1
SKI	GHS - New Zealand	Skin sensitisation category 1
REP	GHS - New Zealand	Reproductive toxicity category 2
AQU	GHS - Australia	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
GEN	EU - Annex VI CMRs	Mutagen - Category 2
RES	GHS - Japan	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled [Respiratory sensitization - Category 1A]
REP	EU - SVHC List	Toxic to reproduction - Candidate list
REP	EU - SVHC List	Toxic to reproduction - Prioritized for listing
CAN	EU - REACH Annex XVII CMRs	Carcinogens: Category 1B
REP	EU - REACH Annex XVII CMRs	Reproductive toxicants: Category 1B
CAN	EU - SVHC List	Carcinogenic - Candidate list
CAN	EU - SVHC List	Carcinogenic - Prioritized for listing
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Biological and Environmentally Released Materials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Children's Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4.0 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Formulated Consumer Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 All Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 Children's Toy Products
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2025 Cosmetics and Personal Care Products

SUBSTANCE NOTES: Substance is a cobalt blue pigment. Optional pigment; used only in some glaze colors. Not simultaneous with other pigments. Any single glaze formula totals ~100%.

ALTERNATE: This substance is an alternate substance to C.I. Pigment Black 27.

C.I. PIGMENT BROWN 33

ID: 68186-88-9

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:15	
%: 0.0000 - 2.7400	GreenScreen: LT-UNK	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
None found		No warnings found on HPD Priority Hazard Lists		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
None found		No listings found on Additional Hazard Lists		
SUBSTANCE NOTES: Substance is a brown spinel pigment.				

CUPRIC CARBONATE, BASIC

ID: 12069-69-1

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:16	
%: 0.0000 - 2.5700 ALT	GreenScreen: LT-P1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
MUL	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters		
EYE	EU - GHS (H-Statements) Annex 6 Table 3-1	H319 - Causes serious eye irritation [Serious eye damage/eye irritation - Category 2A]		
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]		
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]		
EYE	GHS - New Zealand	Eye irritation category 2		
EYE	GHS - Australia	H319 - Causes serious eye irritation [Serious eye damage/eye irritation - Category 2A]		
AQU	GHS - New Zealand	Hazardous to the aquatic environment - acute category 1		
AQU	GHS - Australia	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]		
AQU	GHS - New Zealand	Hazardous to the aquatic environment - chronic category 1		

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes Precautionary List Antimicrobials
SUBSTANCE NOTES: Substance is a Green pigment; SDS confirmed. Optional pigment; used only in some glaze colors. Not simultaneous with other pigments. Any single glaze formula totals ~100%.		
ALTERNATE: This substance is an alternate substance to C.I. Pigment Black 27.		

FERRIC OXIDE

ID: 1309-37-1

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:16		
%: 0.0000 - 1.5400	GreenScreen: BM-1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
CAN	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification**		
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]**		
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]**		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
None found		No listings found on Additional Hazard Lists		

SUBSTANCE NOTES: Substance is a Brown/red ceramic pigment.

**Form-Specific Hazard: This substance's GreenScreen Benchmark or List Translator score and the applicable hazards are related to particulate inhalation, which is expected to occur only during manufacture, installation, maintenance, or demolition, due to activities such as sawing, sanding, grinding, or intensive cleaning. See HPDC's Special Conditions policy for more information. Manufacturer's Safety Data Sheet (SDS), if applicable, may offer occupational health and safety information.

QUARTZ

ID: 14808-60-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:15		
%: 0.0000 - 1.0000	GreenScreen: BM-1	RC: None	NANO: No	SUBSTANCE ROLE: Impurity/Residual

HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen**
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route**
CAN	US NIH - Report on Carcinogens	Known to be Human Carcinogen (respirable size - occupational setting)**
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man**
CAN	IARC	Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources**
CAN	IARC	Group 1 - Agent is Carcinogenic to humans**
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen**
CAN	GHS - Japan	H350 - May cause cancer [Carcinogenicity - Category 1A]**
CAN	GHS - Australia	H350i - May cause cancer by inhalation [Carcinogenicity - Category 1A or 1B]**
CAN	GHS - New Zealand	Carcinogenicity category 1**
MAM	GHS - Japan	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]**
GEN	GHS - Japan	H341 - Suspected of causing genetic defects [Germ cell mutagenicity - Category 2]**
MAM	GHS - Australia	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]**
MAM	GHS - New Zealand	Specific target organ toxicity - repeated exposure category 1**
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists

SUBSTANCE NOTES: Trace crystalline silica reported in Rutile SDS (~1%).

**Form-Specific Hazard: This substance's GreenScreen Benchmark or List Translator score and the applicable hazards are related to particulate inhalation, which is expected to occur only during manufacture, installation, maintenance, or demolition, due to activities such as sawing, sanding, grinding, or intensive cleaning. See HPDC's Special Conditions policy for more information. Manufacturer's Safety Data Sheet (SDS), if applicable, may offer occupational health and safety information.

ZIRCON (ZR(SiO4))

ID: 14940-68-2

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:16	
%: 0.0000 - 1.0000	GreenScreen: BM-2	RC: None	NANO: No	SUBSTANCE ROLE: Impurity/Residual
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
None found		No warnings found on HPD Priority Hazard Lists		

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
None found		No listings found on Additional Hazard Lists
SUBSTANCE NOTES: Present as trace constituent in Rutile pigment SDS; exact % not specified.		

ATTAPULGITE

ID: 12174-11-7

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-08-24 22:18:16	
%: 0.4000 - 0.6000	GreenScreen: LT-1	RC: None	NANO: No	SUBSTANCE ROLE: Processing regulator
HAZARD TYPE	LIST NAME AND SOURCE		WARNINGS	
CAN	CA EPA - Prop 65		Carcinogen - specific to chemical form or exposure route	
CAN	IARC		Group 2b - Possibly carcinogenic to humans	
CAN	MAK		Carcinogen Group 2 - Considered to be carcinogenic for man	
CAN	GHS - New Zealand		Carcinogenicity category 2	
CAN	GHS - Japan		H351 - Suspected of causing cancer [Carcinogenicity - Category 2]	
MAM	GHS - Japan		H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organs/systemic toxicity following repeated exposure - Category 1]	
EYE	GHS - Japan		H319 - Causes serious eye irritation [Serious eye damage / eye irritation - Category 2A]	
CAN	GHS - Australia		H351 - Suspected of causing cancer [Carcinogenicity - Category 2]	
ADDITIONAL LISTINGS	LIST NAME AND SOURCE		NOTIFICATION	
None found			No listings found on Additional Hazard Lists	
SUBSTANCE NOTES: Clay mineral, thickening agent.				

VANADIUM ZIRCONIUM YELLOW BADDELEYITE

ID: 68187-01-9

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-08-24 22:18:16		
%: 0.0000 - 0.1510	GreenScreen: LT-P1	RC: None	NANO: No	SUBSTANCE ROLE: Pigment
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
MUL	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters		
ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION		
None found		No listings found on Additional Hazard Lists		

SUBSTANCE NOTES: Substance is a Yellow zircon-based pigment.

Section 3: Certifications and Compliance

This section lists applicable certification and standards compliance information for VOC emissions and VOC content. Other types of health or environmental performance testing or certifications completed for the product may be provided.

VOC EMISSIONS	Inherently non-emitting source per LEED	
CERTIFYING PARTY: Self-declared APPLICABLE FACILITIES: All manufacturing facilities producing this product (Gardena, CA) CERTIFICATE URL:	ISSUE DATE: 2025-06-19 00:00:00 EXPIRY DATE:	CERTIFIER OR LAB: None
CERTIFICATION AND COMPLIANCE NOTES: High-fired ceramic tile is non-emitting. No testing required.		

VOC EMISSIONS	Inherently non-emitting source per LEED	
CERTIFYING PARTY: Self-declared APPLICABLE FACILITIES: All manufacturing facilities producing this product (Gardena, CA) CERTIFICATE URL:	ISSUE DATE: 2025-09-04 00:00:00 EXPIRY DATE:	CERTIFIER OR LAB: None
CERTIFICATION AND COMPLIANCE NOTES: High-fired ceramic tile is non-emitting. No testing required.		

Section 4: Accessories

This section lists related products or materials that the manufacturer requires or recommends for installation (such as adhesives or fasteners), maintenance, cleaning, or operations. For information relating to the contents of these related products, refer to their applicable Health Product Declarations, if available.

GROUT MANUFACTURER (OR GENERIC): Laticrete
HPD URL: https://cdnmdm.laticrete.com/ProductAssets/Objects%20Assets/New%20PERMACOLOR%20HPD%20v2.3_3.pdf ACCESSORY TYPE: Installation Accessory CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES: Accessories are site-applied and not included in this product formulation. VOC content and emissions must be assessed separately.

ADHESIVE (THINSET) MANUFACTURER (OR GENERIC): Laticrete
HPD URL: https://cdnmdm.laticrete.com/ProductAssets/Product%20Documents/253-grey-hpd-la-en.pdf ACCESSORY TYPE: Adhesive CONDITION WHEN RECOMMENDED OR REQUIRED AND/OR OTHER NOTES: Accessories are site-applied and not included in this product formulation. VOC content and emissions must be assessed separately.

Section 5: General Notes

This HPD represents the red-bodied version of Arto’s ceramic tile line glazed with Premium High-Fired Glazes. Grog is recycled from roofing tile scrap and included as a performance filler. Fired tile contains no VOCs and no remaining process water/CMC. UVCB approach used for clays/grog at 100-ppm threshold; known phases identified; proportions variable.

MANUFACTURER INFORMATION

MANUFACTURER: **arto**
ADDRESS: **15209 S Broadway**
Gardena, California West Rancho Dominguez
COUNTRY: **United States**
LATITUDE: **-118.2794000**
LONGITUDE: **33.8935000**

WEBSITE: **www.arto.com**
CONTACT NAME: **Julie Grajeda**
TITLE: **Head of Product and Sustainability**
PHONE: **310-768-8500**
EMAIL: **julie@arto.com**

The listed contact is responsible for the validity of this HPD and attests that it is accurate and complete to the best of his or her knowledge.

KEY

Hazard Types

AQU Aquatic toxicity	LAN Land toxicity	PHY Physical hazard (flammable or reactive)
CAN Cancer	MAM Mammalian/systemic/organ toxicity	REP Reproductive
DEV Developmental toxicity	MUL Multiple	RES Respiratory sensitization
END Endocrine activity	NEU Neurotoxicity	SKI Skin sensitization/irritation/corrosivity
EYE Eye irritation/corrosivity	NF Not found on Priority Hazard Lists	UNK Unknown
GEN Gene mutation	OZO Ozone depletion	
GLO Global warming	PBT Persistent, bioaccumulative, and toxic	

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)	LT-P1 List Translator Possible 1 (Possible Benchmark-1)
BM-3 Benchmark 3 (use but still opportunity for improvement)	LT-1 List Translator 1 (Likely Benchmark-1)
BM-2 Benchmark 2 (use but search for safer substitutes)	LT-UNK List Translator Benchmark Unknown
BM-1 Benchmark 1 (avoid - chemical of high concern)	NoGS No GreenScreen.
BM-U Benchmark Unspecified (due to insufficient data)	

GreenScreen Benchmark scores sometimes also carry subscripts, which provide more context for how the score was determined. These are DG (data gap), TP (transformation product), and CoHC (chemical of high concern). For more information, see 2.2.2.4 GreenScreen® for Safer Chemicals, www.greenscreenchemicals.org, and Best Practices for Hazard Screening on the HPDC website (hpd-collaborative.org).

Recycled Types

PreC Pre-consumer recycled content
PostC Post-consumer recycled content
UNK Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms:

GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

Inventory Methods:

Nested Method / Material Threshold Substances listed within each material per threshold indicated per material
Nested Method / Product Threshold Substances listed within each material per threshold indicated per product
Basic Method / Product Threshold Substances listed individually per threshold indicated per product

Nano Composed of nano scale particles or nanotechnology
Third Party Verified Verification by independent certifier approved by HPDC
Preparer Third party preparer, if not self-prepared by manufacturer
Applicable facilities Manufacturing sites to which testing applies

The Health Product Declaration (HPD) Open Standard provides for the disclosure of product contents and potential associated human and environmental health hazards. Hazard associations are based on the HPD Priority Hazard Lists, the GreenScreen List Translator™, and when available, full GreenScreen® assessments. The HPD Open Standard v2.1 is not:

- a method for the assessment of exposure or risk associated with product handling or use,*
- a method for assessing potential health impacts of: (i) substances used or created during the manufacturing process or (ii) substances created after the product is delivered for end use.*

Information about life cycle, exposure and/or risk assessments performed on the product may be reported by the manufacturer in appropriate Notes sections, and/or, where applicable, in the Certifications section.

The HPD Open Standard was created and is supported by the Health Product Declaration Collaborative (the HPD Collaborative), a customer-led organization composed of stakeholders throughout the building industry that is committed to the continuous improvement of building products through transparency, openness, and innovation throughout the product supply chain.

