

HPD UNIQUE IDENTIFIER: 971027456
CLASSIFICATION: 09 30 00 Tiling
PRODUCT TYPE: Tile Flooring
Wall Tiles

PRODUCT DESCRIPTION: High-fired terracotta tile made from a red clay body containing kaolin, illite/mica, quartz, and iron oxides. Handmade and extruded. No glazes or coatings are used.

Section 1: SummaryNested 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	☒ 100 ppm	Completed in 4 of 4 Materials	Characterized ☒ Yes ☐ No
☐ Basic Method	☐ 1,000 ppm	Explanation(s) provided for Residuals/Impurities?	<i>Provided weight and role.</i>
Threshold Disclosed Per	☐ Per GHS SDS	☒ Yes ☐ No	Screened ☒ Yes ☐ No
☐ Material	☐ Other		<i>Provided screening results using HPDC-approved methods.</i>
☒ Product			Identified ☒ Yes ☐ No
			<i>Provided name and CAS RN or other identifier.</i>

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 CALCIUM OXIDE**
(PRIMARY CASRN IS 1305-78-8) BM-2 | SKI | MAM | EYE **MAGNESIUM**
OXIDE BM-3dg | CAN | MAM **TITANIUM DIOXIDE BM-1 |** CAN | END |
MAM **SODIUM OXIDE BM-2 |**

Number of Greenscreen BM-4/BM3 contents ... 2
Contents highest-concern GreenScreen score(s) (BM-1, LT-1, LT-P1) ...
BM-1, 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.
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
2025-06-19

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: 2025-06-19
PUBLISHED DATE: 2025-09-04
EXPIRY DATE: 2028-06-19

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: Base red clay mixture used for plasticity and firing strength. Fire clay (industrial-grade), air-floated to 200 mesh, used as a ceramic raw material.			

KAOLINITE (AL2(OH)4(SI2O5))				ID: 1318-74-7
HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-06-19 15:43:33	
%: 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: 2025-06-19 15:44:24	
%: 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: 2025-06-19 15:46:49	
#: 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: 2025-06-19 15:43:09	
#: 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: 2025-06-19 15:46:22		
%: 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: Recycled fired clay from roof tiles (post-industrial). Particulate used to add thermal and dimensional stability to ceramic bodies."		

SILICON DIOXIDE

ID: 7631-86-9

HAZARD DATA SOURCE: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2025-06-19 16:36:55		
%: 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: 2025-06-19 16:37:22	
%: 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, 2024 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: 2025-06-19 16:38:12	
%: 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: 2025-06-19 16:38:59	
%: 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, 2024
		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: 2025-06-19 16:41:53	
%: 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: 2025-06-19 16:42:16		
%: 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: 2025-06-19 16:42:58		
%: 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: 2025-06-19 15:49:01		
%: 70.0000	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: **2025-06-19 15:48:29**

%: 18.0000	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: 2025-06-19 15:50:42	
%: 13.0000	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: 2025-06-19 15:50:03		
%: 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: 2025-06-19 16:03:04	
%: 50.0000 - 60.0000	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: 2025-06-19 16:03:30		
%: 15.0000 - 25.0000	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, 2024
		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: 2025-06-19 15:53:20	
%: 18.0000 - 20.0000	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: 2025-06-19 16:04:07		
?: 6.0000 - 10.0000	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: 2025-06-19 16:04:34	
?: 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.				

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

ID: 60873-85-0

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-06-19 16:06:07	
?: 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.		

MAGNESIUM OXIDE

ID: **1309-48-4**

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2025-06-19 16:05:34	
%: 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.				

TITANIUM DIOXIDE

ID: **13463-67-7**

HAZARD DATA SOURCE: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2025-06-19 16:05:08
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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 (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 v4.0 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 (C2CP II)	C2C Certified v4.1 Product Standard Restricted Substances - Effective July 1, 2024 Cosmetics and Personal Care Products
SUBSTANCE NOTES: Occurs in minor amounts as part of natural clay.		

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.		

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 unglazed red-bodied version of Arto’s ceramic tile line. Grog is recycled from roofing tile scrap and included as a performance filler.

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.

