EnduraColor Architectural Pavers by Unilock

Health Product Declaration v2.1.1

created via: HPDC Online Builder

CLASSIFICATION: 32 14 00 Exterior Improvements: Unit Paving

PRODUCT DESCRIPTION: Unilock's manufacturing teams have an unrelenting commitment to shipping only top quality products. Every Unilock product is durable, made with colorfast pigments, slip resistant, resistant to salt erosion, and designed to tolerate oil and gas spills. This HPD covers all EnduraColor products from Unilock. Also includes CSI MasterFormat 32 14 13 Precast Concrete Unit Paving.

Section 1: Summary — Basic Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format
- ○ Nested Materials Method
- ◉ Basic Method

Threshold Disclosed Per
- ○ Material
- ◉ Product

Threshold level
- ○ 100 ppm
- ◉ 1,000 ppm
- ○ Per GHS SDS
- ○ Per OSHA MSDS
- ○ Other

Residuals/Impurities
- ◉ Considered
- ○ Partially Considered
- ○ Not Considered

Explanation(s) provided for Residuals/Impurities?
- ◉ Yes ○ No

All Substances Above the Threshold Indicated Are:

Characterized ◉ Yes Ex/SC ○ Yes ○ No

% weight and role provided for all substances except SC substances characterized according to SC guidance.

Screened ◉ Yes Ex/SC ○ Yes ○ No

All substances screened using Priority Hazard Lists with results disclosed except SC substances screened according to SC guidance.

Identified ◉ Yes Ex/SC ○ Yes ○ No

All substances disclosed by Name (Specific or Generic) and Identifier except SC substances identified according to SC guidance.

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.

MATERIAL | SUBSTANCE | *RESIDUAL OR IMPURITY*
GREENSCREEN SCORE | HAZARD TYPE

ENDURACOLOR ARCHITECTURAL PAVERS [SC:NATURAL SAND Not Screened SC:MIXED AGGREGATE Not Screened PORTLAND CEMENT LT-P1 | END | CAN *QUARTZ* LT-1 | CAN IRON OXIDE LT-UNK | CAN *SULFUR TRIOXIDE* LT-P1 | MAM TITANIUM DIOXIDE LT-1 | CAN | END CALCIUM OXIDE LT-P1 *SILICA, AMORPHOUS* LT-P1 | CAN FERRIC OXIDE BM-2 | CAN *ALUMINUM CALCIUM IRON OXIDE* NoGS SC:TRAP ROCK Not Screened BLAST FURNACE SLAG LT-UNK FERRIC OXIDE YELLOW LT-UNK]

Number of Greenscreen BM-4/BM3 contents ... 0

Contents highest concern GreenScreen Benchmark or List translator Score ... LT-1

Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

Special conditions applied: GeologicalMaterial

[LEED v4] "Yes ex/SC" result is due only to materials and substances for which Special Conditions were applied. Thus "Yes ex/SC" does not disqualify the product for the LEED v4 Materials and Resources Disclosure and Optimization credit, Option 1.

This Health Product Declaration (HPD) was completed in accordance with the HPD Standard version 2.1.1, and discloses hazards associated with all substances present at or above 1000 parts per million (ppm) in the finished product, along with the role and percent weight.

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: CDPH Standard Method – Not tested

CONSISTENCY WITH OTHER PROGRAMS

Pre-checked for LEED v4 Material Ingredients, Option 1

Third Party Verified?
- ○ Yes
- ◉ No

PREPARER: Self-Prepared
VERIFIER:
VERIFICATION #:

SCREENING DATE: 2019-11-25
PUBLISHED DATE: 2019-12-17
EXPIRY DATE: 2022-11-25

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 2.1.1, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-1-1-standard

ENDURACOLOR ARCHITECTURAL PAVERS

PRODUCT THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Residuals and Impurities were “Considered”, as outlined in Emerging Best Practices. Residuals or impurities with the potential to be present at or above the Content Inventory Threshold indicated that return a GS score of BM-1, LT-1, LT-P1 or NoGS have been disclosed, based on information provided in supplier disclosure letters, supplier SDS, and as predicted by process chemistry (Pharos CML).

OTHER PRODUCT NOTES: Percent by weight of substances reported as range to account for formulation variations between product lines and manufacturing facilities.

SC:NATURAL SAND

ID: SC:GeoMat

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2019-11-25

%: 30.00 - 66.00 GS: Not Screened RC: None NANO: No ROLE: Aggregate

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
	Hazard Screening not performed	

SUBSTANCE NOTES:
Version: SCGeoMats/2018-02-23
Origin: Varies by supplier. Please contact manufacturer if more information is required.
Typical Composition: 50-99% Quartz/Silica (14808-60-7); <26% Tridymite (15468-32-3); <13% Christobalite (14464-46-1).
Potential presence of toxic metals: None indicated by suppliers
Presence of Radioactive Elements: None indicated by suppliers

Includes fine sand, very fine sand, and concrete sand from multiple suppliers.

SC:MIXED AGGREGATE

ID: SC:GeoMat

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2019-11-25

%: 29.00 - 45.00 GS: Not Screened RC: PreC NANO: No ROLE: Aggregate

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
	Hazard Screening not performed	

SUBSTANCE NOTES:
Version: SCGeoMats/2018-02-23
Origin: Varies by supplier. Please contact manufacturer if more information is required.
Typical Composition: Limestone (1317-65-3): 0-15%; Silicon dioxide (14808-60-7): >1%; Other composition information: Aggregate from limestone, granite, sand and gravel are naturally occurring mineral complexes that contain varying quantities of quartz (crystalline silica). Other forms of Crystalline Silica (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes
Potential presence of toxic metals: None indicated by suppliers
Presence of Radioactive Elements: None indicated by suppliers

Aggregate materials used in the manufacture of bricks, mortar, cement, concrete, plasters, paving materials and other constructions materials. Other means of identification: Limestone; Sand & Gravel; Granite; Recycled Concrete Aggregate (RCA). Recycled Concrete Aggregate (RCA) is a granular base material produced by reclaiming existing hydraulic cement concrete and processing the materials to make a new aggregate.

PORTLAND CEMENT

ID: **65997-15-1**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **5.00 - 27.00** GS: **LT-P1** RC: **None** NANO: **No** ROLE: **Cement Binder**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
CANCER	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification

SUBSTANCE NOTES: Includes Portland cement and white cement from multiple suppliers. From supplier documentation: "Cement is made from materials mined from the earth and processed using energy provided by fuels. Additional materials, such as fly ash, kiln dust and slag may also be introduced into the cement manufacturing process. A chemical analysis of cement may reveal trace amounts of naturally occurring but potentially harmful chemical compounds such as free crystalline silica, organic compounds, potassium and sodium compounds, heavy metals including cadmium, chromium (including hexavalent chromium), nickel and lead. Other trace constituents may include calcium oxide (also known as free lime or quick lime) and organic compounds from grinding aids such as amine acetate salts, glycols and 1,2-ethanediol."

QUARTZ

ID: **14808-60-7**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **Impurity/Residual** GS: **LT-1** RC: **None** NANO: **No** ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CANCER	IARC	Group 1 - Agent is Carcinogenic to humans
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CANCER	IARC	Group 1 - Agent is carcinogenic to humans - inhaled from occupational sources
CANCER	US NIH - Report on Carcinogens	Known to be Human Carcinogen (respirable size - occupational setting)
CANCER	MAK	Carcinogen Group 1 - Substances that cause cancer in man
CANCER	GHS - New Zealand	6.7A - Known or presumed human carcinogens
CANCER	GHS - Australia	H350i - May cause cancer by inhalation
CANCER	GHS - Japan	Carcinogenicity - Category 1A [H350]

SUBSTANCE NOTES: Sources: Natural Sand; Limestone (1317-65-3); Trap Rock; Mixed Aggregate; Portland cement (65997-15-1); Slag Cement (65996-69-2).

IRON OXIDE

ID: 1317-61-9

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **0.00 - 2.00** GS: **LT-UNK** RC: **None** NANO: **No** ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CANCER	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification

SUBSTANCE NOTES: Percent by weight of substance reported as a range due to different colors available. Contact manufacturer if more information is required.

SULFUR TRIOXIDE

ID: 7446-11-9

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **Impurity/Residual** GS: **LT-P1** RC: **None** NANO: **No** ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
MAMMALIAN	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances

SUBSTANCE NOTES: Potential source: Portland cement. As per Pharos CML: Component; Integral; 3.0%.

TITANIUM DIOXIDE

ID: 13463-67-7

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **0.00 - 1.00** GS: **LT-1** RC: **None** NANO: **No** ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CANCER	US CDC - Occupational Carcinogens	Occupational Carcinogen
CANCER	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CANCER	IARC	Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
CANCER	MAK	Carcinogen Group 3A - Evidence of carcinogenic effects but not sufficient to establish MAK/BAT value
CANCER	MAK	Carcinogen Group 4 - Non-genotoxic carcinogen with low risk under MAK/BAT levels

SUBSTANCE NOTES: Pigmentary Titanium Dioxide is identified on the US EPA Safer Chemical Ingredient List (Green Circle - Verified Low Concern). Percent by weight of substance reported as a range due to different colors available. Contact manufacturer if more information is required.

CALCIUM OXIDE

ID: 1305-78-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **0.00 - 0.50** GS: **LT-P1** RC: **None** NANO: **No** ROLE: **R/I**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Potential sources: Portland cement; slag cement. As per Pharos CML: Component; Frequent; % Unknown.

SILICA, AMORPHOUS

ID: 7631-86-9

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **Impurity/Residual** GS: **LT-P1** RC: **None** NANO: **No** ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CANCER	GHS - Japan	Carcinogenicity - Category 1A [H350]
CANCER	GHS - Australia	H350i - May cause cancer by inhalation

SUBSTANCE NOTES: Potential impurity of slag cement (65996-69-2) as per Pharos CML (Pollutant/Contaminant; Frequent; % Unknown).

FERRIC OXIDE

ID: 1309-37-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **0.00 - 1.00** GS: **BM-2** RC: **None** NANO: **No** ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CANCER	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification

SUBSTANCE NOTES: GreenScreen Benchmark® assessment score of BM-2 was provided by the HPD Builder Tool. Percent by weight of substance reported as a range due to different colors available. Contact manufacturer if more information is required.

ALUMINUM CALCIUM IRON OXIDE

ID: **12068-35-8**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **Impurity/Residual** GS: **NoGS** RC: **None** NANO: **No** ROLE: **Impurity/Residual**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Component of Portland cement, as per one supplier's SDS.

SC:TRAP ROCK

ID: **SC:GeoMat**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **0.00 - 5.00** GS: **Not Screened** RC: **None** NANO: **No** ROLE: **Colored Aggregate**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
	Hazard Screening not performed	

SUBSTANCE NOTES:
Version: SCGeoMats/2018-02-23
Origin: Varies by supplier. Please contact manufacturer if more information is required.
Typical Composition: Quartz (14808-60-7): 40-60%; see Substance notes
Potential presence of toxic metals: None indicated by suppliers
Presence of Radioactive Elements: None indicated by suppliers

Trap rock is a name used for any dark-colored igneous rock that is used to produce crushed stone. Basalt, gabbro, diabase, and peridotite are the most common rock types referred to as trap rock.

BLAST FURNACE SLAG

ID: **65996-69-2**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2019-11-25**

%: **0.00 - 10.00** GS: **LT-UNK** RC: **None** NANO: **No** ROLE: **Cement Binder**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Slag cement. Other means of identification: GGBFS; Ground Granulated Blast Furnace Cement. Industrial uses in manufacture of concrete, portland cement, blended cement and other building and construction materials. Supplier documentation states: The majority of components in Granulated Blast Furnace Slag are various glassy Metallic Silicates (Iron, Calcium, Magnesium, Aluminum, and Titanium Silicates), including: Dicalcium Silicate (Ca2SiO4) 14284-23-2, Merwinite (Ca3MgSi2O8) 13813-64-4, and Gehlenite (Ca2Al2SiO7) 1302-56-3. Granulated blast-furnace slag is a co-product of the steel industry produced by adding a limestone flux to the ore to remove non-ferrous contaminants. As such, it may contain small quantities of hazardous heavy metals, including trace amounts of chromium, usually in solution in the glass. Ground granulated blast-furnace slag (GGBFS) is a vitreous material containing silica, alumina, magnesia and calcium oxides. It also contains a small quantity of iron, sodium, titanium and manganese oxides. The oxides do not actually occur in free form but as complexed silica-based glasses.

FERRIC OXIDE YELLOW

ID: **51274-00-1**

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library**

HAZARD SCREENING DATE: **2019-11-25**

%: **0.00 - 1.00**

GS: **LT-UNK**

RC: **None**

NANO: **No**

ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: Percent by weight of substance reported as a range due to different colors available. Contact manufacturer if more information is required.

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 — **CDPH Standard Method – Not tested**

CERTIFYING PARTY: Self-declared
APPLICABLE FACILITIES: N/A
CERTIFICATE URL:

ISSUE DATE: 2019-08-14

EXPIRY DATE:

CERTIFIER OR LAB: N/A

CERTIFICATION AND COMPLIANCE NOTES:

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.

No accessories are required for this product.

Section 5: General Notes

EnduraColor Architectural Pavers are manufactured at the following Unilock facilities: Brewster, New York; Aurora, Illinois; Marengo, Illinois; Brighton, Michigan; Rittman, Ohio; Uxbridge, Massachusetts; Pickering, Ontario; Ayr, Ontario; Georgetown, Ontario.

Section 6: References

MANUFACTURER INFORMATION

MANUFACTURER: **Unilock**
ADDRESS: **401 The West Mall**
Suite 610
Toronto ON M9C 5J5, CANADA
WEBSITE: **www.unilock.com**

CONTACT NAME: **Brad Swanson**
TITLE: **Director of Commercial Sales**
PHONE: **800-864-5625**
EMAIL: **Brad.Swanson@unilock.com**

KEY

OSHA MSDS Occupational Safety and Health Administration Material Safety Data Sheet
GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

Hazard Types

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

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)
BM-3 Benchmark 3 (use but still opportunity for improvement)
BM-2 Benchmark 2 (use but search for safer substitutes)
BM-1 Benchmark 1 (avoid - chemical of high concern)
BM-U Benchmark Unspecified (insuficient data to benchmark)
LT-P1 List Translator Possible Benchmark 1
LT-1 List Translator Likely Benchmark 1
LT-UNK List Translator Benchmark Unknown (insufficient information from List Translator lists to benchmark)
NoGS Unknown (no data on List Translator Lists)

Recycled Types

PreC Preconsumer (Post-Industrial)
PostC Postconsumer
Both Both Preconsumer and Postconsumer
Unk Inclusion of recycled content is unknown
None Does not include recycled content

Other Terms
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.

The product manufacturer and any applicable independent verifier are solely responsible for the accuracy of statements and claims made in this HPD and for compliance with the HPD standard noted.