

February 2016

Valued Customer,

We here at Crossville, Inc. continue to be excited about the continual movement towards environmental sustainability and material transparency. The market has been moving in this direction for some time and we feel it is both important and necessary that this trend continues. We also feel that it is necessary that we provide our customers with the information that they need to make informed purchasing decisions.

In the past the purchasing decisions of our customers have centered on three important criteria; 1) value 2) performance and 3) aesthetic appeal.

Recently two additional elements have entered the mix. These are environmental performance and material health.

On the environmental performance side of things we have released Environmental Product Declarations (EPD) based on ISO14040/44 compliant Life Cycle Assessments (LCA). These documents are based on protocols and standards that have been used and vetted in the marketplace for more that a decade. Additionally, as required by these standards, both our EPDs and the LCAs have been critically reviewed and certified by an unbiased third party. Our EPDs can be found <http://crossvilleinc.com/sustainability/leed-information/>

While the disclosure of environmental impacts through EPDs has been around for a while, voluntary material health disclosure is a more recent trend. Within the market there are several options for material health disclosure and different customers require different options. These options include Health Product Declarations (HPDs), Declare, GreenScreen, Portico, Cradle to Cradle and others. At Crossville we are working to meet all customer requirements and have started this process with HPDs.

Attached with this letter is the current HPD for our Porcelain tile products. We release this document with the understanding that the HPD standard does not fully and adequately account for the actual nature in which tile products are manufactured and used. The HPD Standard is based on material ingredients in the product and not based on the form of the final product as shipped to the customer. **As such, hazards appear on our HPD even though there is no risk to our customer.**

This is an important distinction. The hazards that appear in our HPD are associated primarily with the manufacturing use of powdered raw materials. During the manufacturing process a combination of intensely high pressure and very high firing techniques create a chemical and

physical change in these materials converting these hazards into a benign, fully vitrified porcelain tile product.

Others in our industry have released HPDs with fewer or no hazard listings. This difference is not due to significantly different products (all ceramic tile use the same naturally occurring base materials) but rather a result of differing interpretations of the HPD Standard. Unlike EPDs (in which the standards have been modified over the years to meet actual conditions) the HPD standard is new and constantly going through improvements and revisions. At Crossville, Inc., we have determined that it is best to follow the standard as currently written and then diligently work with the HPD collaborative to improve what is currently in place so that future revisions will adequately account for the true nature of Porcelain products. We are doing this through participation in the HPD's Manufactures' Advisory Panel (MAP) and the Special Conditions Technical Sub-Group.

Please contact us with any questions. We welcome further discussion with our customers and other interested parties.

Sincerely,



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Name Crossville Inc. Porcelain Tiles



Product ID Crossville Produced Porcelain Tile Classification 09 30 13.00 Finishes: Ceramic Tiling

Website crossvilleinc.com/products/

Manufacturer Crossville Inc. Contact Name Noah Chitty
Address 349 Sweeney Drive Title Director of Technical Services
Crossville, TN 38555 Phone 931-484-2110
Email nchitty@crossvilleinc.com

Description Porcelain tile produced in North America is a mixture of multiple mineral-based natural materials, including but not limited to clay, sand, feldspar, and talc. The tiles are pressed into the desired shape and fired in kilns at high temperatures. Porcelain tile is fire resistant, non-combustible, durable (lasts a lifetime) and extremely easy to maintain.

As floor and wall coverings, porcelain tile products provide dual functions. They serve an aesthetic function as a design component, and a technical function as a building finishing material. As a building material, porcelain tile is capable of withstanding a wide range of environmental stresses.

Since tile is fired in kilns at high temperatures, there are no volatile organics in the finished product that can be released into the air we breathe. There are also adhesives, grouts, and backer boards available that contain zero, or very low VOCs. Additionally, tile is inhospitable to dust mites, mold, germs, and bacteria and often the preferred floor covering for people with allergies or asthma. Tile grouts and backer boards with built-in mold and mildew protection complement tile's inherent resistance to mold and mildew growth.

This HPD is representative of the following products: Argent, Basalt, Bluestone, Color Blox/Color BloxMosaics, Cotto Americana, Cross-Colors, Crossville Mosaics, Ecocycle Americana, Gotham, Main Street, Manoir, Moonstruck, Oceanaire, Ready to Wear, Reclamation, Retro Active, Shades by Crossville, Speakeasy, Structure, Virtue, Vista Americana, Wood Impressions.

Release Date 2016-02-24 Expiry Date 2019-02-24 HPD URL https://builder.hpd-collaborative.org/uploads/files/hpds/1456/4077-20160224084926.pdf
Self-declared Second Party Third Party Certifier Certificate #

SUMMARY DISCLOSURE

The content of this product was assessed for health hazard warnings as required using Pharos

Residuals Disclosure Full Disclosure of Intentional Ingredients Full Disclosure of Known Hazards Disclosure Notes
Measured 100 ppm (ideal) Measured 1000 ppm Predicted by process chemistry As per MSDS (1,000 & 10,000 ppm) Not disclosed Other
Yes No Yes No

Contents in Descending Order of Quantity

FELDSPAR , KAOLIN CLAY , QUARTZ , TALC , CALCIUM OXIDE , MAGNESIUM OXIDE , ZINC OXIDE , ALUMINUM OXIDE , Zirconium silicate , dipotassium oxide , SODIUM OXIDE , DIETHYLENE GLYCOL , pentasodium triphosphate , Zircon (Zr(SiO4)) , Titanium dioxide , CHROMITE , Smectite-group minerals , Rutile titanium dioxide , C.I. pigment black 27 , Mica , calcite (Ca(CO3)) , Aluminosilicate , SODIUM CARBOXYMETHYL CELLULOSE , Vanadium zirconium yellow baddeleyite , Zirconium silicate

Hazards Highest concern GreenScreen score - List Translator Benchmark 1
PBT (Persistent Bioaccumulative Toxic) Cancer Gene Mutation Development Reproductive Endocrine Respiratory Neurotoxicity Mammal Skin or Eye Aquatic toxicity Land toxicity Physical hazard Global warming Ozone depletion Multiple Unknown

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**Total VOC Content**

Material (g/L) N/A

Regulatory (g/L) N/A

**Does the product contain exempt VOCs?** N/A Yes No**Are there VOC-free tints available?** N/A Yes NoNotes

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**Certifications + Compliance**

VOC Emissions Not tested

VOC Content

N/A

Multi-attribute Green Squared Certification

The HPD Standard is solely a declaration of product content and direct health hazards associated with exposure to its individual contents. It is not a full assessment of environmental impacts from the life cycle of this product. It is not an assessment of risks associated with actual use of the product. It does not address the potential health impacts of substances used or created during manufacture that do not appear in the final product as residuals, nor substances created during combustion or other degradation processes.

This Health Product Declaration was generated following the requirements of the noted Standard version and is valid for a total of three years after date of issue or three months after a substantive change of product contents occurs. Users should verify that this Health Product Declaration is compliant with the most current version of the HPD Standard. Accuracy of claims made in this Health Product Declaration is the sole responsibility of the listed manufacturer and certifier (if applicable). The HPD Collaborative does not warrant any claim made herein, explicit or implicit. The HPD Standard is an "open standard" developed and managed by the HPD Collaborative, a nonprofit organization. For more information, visit [hpdcollaborative.org](http://hpdcollaborative.org).

## CONTENT IN DESCENDING ORDER OF QUANTITY

All ingredients must be assessed for health warnings against Priority Hazard Lists, regardless of disclosure level.

Priority Hazard Lists and information on the GreenScreen Benchmarks can be found at [www.hpdcollaborative.org/hazardlists](http://www.hpdcollaborative.org/hazardlists).

**GS:** GreenScreen Benchmark; **RC:** Recycled Content, **PC:** Post Consumer, **PI:** Post Industrial (Pre-consumer), **BO:** Both; **Nano:** comprised of nanoscale particles or nanotechnology

Name	CAS RN	% weight	GS	RC	Nano	Role
Hazard A	Warning A					
Hazard B	Warning B					
Hazard C	Warning C					
Hazard D	Warning D					
Hazard E	Warning E					
Notes						
<b>FELDSPAR</b>	68476-25-5	44.01 - 47.67 %	LT-U	N	N	Chemical used in pre-fired ceramic body and glaze.
RESPIRATORY	AOEC: Asthmagen (ARs) - sensitizer-induced - inhalable forms only					
Range due to variations in product family. Hazard associated with occupational/manufacturing use only. It is not associated with the end use of the final fired product that is purchased, installed, and used by the customer. Crossville has assured that all precautions have been taken to mitigate hazards associated with raw material use within our factory. Additionally, to emphasize the lack of risk to our customer, it can be noted that outside of being used for ceramic tile production, this naturally-occurring raw material is also approved for, and used in, everyday applications such as drinking glass, ceramic kitchen wares and household surface products.						
<b>KAOLIN CLAY</b>	1332-58-7	28.07 - 36.27 %	LT-U	N	N	Chemical used in pre-fired ceramic body.
CANCER	MAK: Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification					
Range due to variations in product family. Hazard associated with occupational/manufacturing use only. It is not associated with the end use of the final fired product that is purchased, installed, and used by the customer. Crossville has assured that all precautions have been taken to mitigate hazards associated with raw material use within our factory. Additionally, to emphasize the lack of risk to our customer, it can be noted that outside of being used for ceramic tile production, this naturally-occurring raw material is also approved for, and used in, everyday applications such as skin care and cosmetic consumer products.						
<b>QUARTZ</b>	14808-60-7	6.66 - 15.22 %	LT-1	N	N	Chemical used in pre-fired ceramic body, glaze and paste.
CANCER	IARC: Group 1: Agent is carcinogenic to humans - inhaled from occupational sources (also in NIOSH-C, MAK, NTP-RoC, Prop 65)					
Range due to variations in product family. Hazard associated with occupational/manufacturing use only. It is not associated with the end use of the final fired product that is purchased, installed, and used by the customer. Crossville has assured that all precautions have been taken to mitigate hazards associated with raw material use within our factory. Additionally, to emphasize the lack of risk to our customer, it can be noted that outside of being used for ceramic tile production, this naturally-occurring raw material is also approved for, and used in, everyday applications such as drinking glass, ceramic kitchen wares and household surface products.						

<b>TALC</b>	14807-96-6	1.24 - 1.37 %	LT-U	N	N	Chemical used in pre-fired ceramic body.
CANCER	MAK: Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification					
Range due to variations in product family. Hazard associated with occupational/manufacturing use only. It is not associated with the end use of the final fired product that is purchased, installed, and used by the customer. Crossville has assured that all precautions have been taken to mitigate hazards associated with raw material use within our factory.						
<b>CALCIUM OXIDE</b>	1305-78-8	0.7 - 0.83 %	LT-U	N	N	Chemical used in pre-fired ceramic body, paste and glaze.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						
<b>MAGNESIUM OXIDE</b>	1309-48-4	0.7 - 0.78 %	LT-U	N	N	Chemical used in pre-fired ceramic body, paste and glaze.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						
<b>ZINC OXIDE</b>	1314-13-2	0.7 - 0.78 %	LT-P1	N	N	Chemical used in pre-fired ceramic body, paste and glaze.
RESPIRATORY	AOEC: Asthmagen (ARs) - sensitizer-induced - inhalable forms only					
ACUTE AQUATIC	EU H-Statements: H400 - Aquatic Acute 1 - Very toxic to aquatic life (also in EU R-Phrases)					
CHRON AQUATIC	EU H-Statements: H410 - Aquatic Chronic 1 - Very toxic to aquatic life with long lasting effects					
MULTIPLE	VwVwS: Class 2 Hazard to Waters					
Range due to variations in product family. Hazard associated with occupational/manufacturing use only. It is not associated with the end use of the final fired product that is purchased, installed, and used by the customer. Crossville has assured that all precautions have been taken to mitigate hazards associated with raw material use within our factory.						
<b>ALUMINUM OXIDE</b>	1344-28-1	0.7 - 0.75 %	LT-U	N	N	Chemical used in pre-fired ceramic body.
RESPIRATORY	AOEC: Asthmagen (ARs) - sensitizer-induced - inhalable forms only					
Range due to variations in product family. Hazard associated with occupational/manufacturing use only. It is not associated with the end use of the final fired product that is purchased, installed, and used by the customer. Crossville has assured that all precautions have been taken to mitigate hazards associated with raw material use within our factory.						
<b>Zirconium silicate</b>	10101-52-7	0.7 - 0.73 %	LT-U	N	N	Chemical used in pre-fired ceramic body.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						
<b>dipotassium oxide</b>	12136-45-7	0.7 - 0.73 %	LT-U	N	N	Chemical used in pre-fired ceramic body.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						
<b>SODIUM OXIDE</b>	1313-59-3	0.7 - 0.73 %	LT-U	N	N	Chemical used in pre-fired ceramic body.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						

<b>DIETHYLENE GLYCOL</b>	111-46-6	0.05 - 0.1 %	LT-U	N	N	Chemical used in pre-fired body paste.
MAMMALIAN	EU R-Phrases: R22: Harmful if swallowed.					
Range due to variations in product family.						
<b>pentasodium triphosphate</b>	7758-29-4	0.01 %	LT-U	N	N	Chemical used in pre-fired body glaze.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						
<b>Zircon (Zr(SiO4))</b>	14940-68-2	0 - 3.94 %	LT-U	N	N	Range due to variations in product family.
None found	No warnings found on HPD Priority lists					
Chemical used in pre-fired body paste, glaze and stain.						
<b>Titanium dioxide</b>	13463-67-7	0 - 1.07 %	LT-1	N	N	Chemical used in pre-fired ceramic body and glaze.
CANCER	NIOSH-C: Occupational carcinogen (also in Prop 65, IARC, MAK)					
Range due to variations in product family. Hazard associated with occupational/manufacturing use only. It is not associated with the end use of the final fired product that is purchased, installed, and used by the customer. Crossville has assured that all precautions have been taken to mitigate hazards associated with raw material use within our factory. This chemical is also used in everyday applications such as sunscreens, paints and fabric dyes.						
<b>CHROMITE</b>	1308-31-2	0 - 0.27 %		N	N	Chemical used in pre-fired body stain.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						
<b>Smectite-group minerals</b>	12199-37-0	0 - 0.1 %		N	N	Chemical used in pre-fired body glaze.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						
<b>Rutile titanium dioxide</b>	1317-80-2	0 - 0.1 %	LT-U	N	N	Chemical used in pre-fired body stain.
CANCER	NIOSH-C: Occupational carcinogen (also in Prop 65, IARC, MAK)					
Range due to variations in product family. Hazard associated with occupational/manufacturing use only. It is not associated with the end use of the final fired product that is purchased, installed, and used by the customer. Crossville has assured that all precautions have been taken to mitigate hazards associated with raw material use within our factory. This chemical is also used in everyday applications such as sunscreens, paints and fabric dyes.						
<b>C.I. pigment black 27</b>	68186-97-0	0 - 0.09 %	LT-U	N	N	Chemical used in pre-fired body paste and glaze.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						
<b>Mica</b>	12001-26-2	0 - 0.03 %	LT-U	N	N	Chemical used in pre-fired body glaze.
None found	No warnings found on HPD Priority lists					
Range due to variations in product family.						
<b>calcite (Ca(CO3))</b>	13397-26-	0 - 0.03 %		N	N	Chemical used in pre-fired ceramic body.

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None found	No warnings found on HPD Priority lists						
Range due to variations in product family.							
<b>Aluminosilicate</b>	1327-36-2	0 - 0.02 %	LT-U	N	N	Chemical used in pre-fired body glaze.	
None found	No warnings found on HPD Priority lists						
Range due to variations in product family.							
<b>SODIUM CARBOXYMETHYL CELLULOSE</b>	9004-32-4	0 - 0.01 %	LT-U	N	N	Chemical used in pre-fired body glaze.	
None found	No warnings found on HPD Priority lists						
Range due to variations in product family.							
<b>Vanadium zirconium yellow baddeleyite</b>	68187-01-9	0 - 0.01 %	LT-U	N	N	Chemical used in pre-fired body glaze.	
None found	No warnings found on HPD Priority lists						
Range due to variations in product family.							
<b>Zirconium silicate</b>	10101-52-7	R	LT-U			Additive - Reactive	
None found	No warnings found on HPD Priority lists						

**CERTIFICATIONS AND COMPLIANCE**

**Certifying Party** = First: Manufacturer's self-declaration; Second: Verification by trade association or other interested party; Third: Verification by independent certifier (ideal).

**Applicable facilities** = Manufacturing sites to which testing applies.

Type	Standard or Certification			Certifier or Laboratory	
	Certifying Party	Issue Date	Expiry Date	Certificate URL	
	Applicable Facilities				
	Notes				
VOC Emissions	Not tested				
VOC Content	N/A				
Recycled Content	Not tested				



Multi-attribute	Green Squared Certification			SCS Global Services
	3rd party independent certification	2015-05-01	2018-04-30	<a href="http://crossvilleinc.com/sustainability/g2-certified/">crossvilleinc.com/sustainability/g2-certified/</a>
	All			

**ACCESSORY MATERIALS**

This section is for additional products required by warranty or recommended by the manufacturer for installation (such as adhesives, fasteners, or factory coatings) or for maintenance, cleaning, or operations. Refer to Health Product Declarations, published separately, for a complete view of these products. Note: This declaration is not intended to address hazards of the installation process.

Required or Recommended Product	URL for Companion Health Product Declaration
<b>Condition when required or recommended and/or other notes</b>	
Grout	
A polymer-modified, liquid-latex fortified or epoxy grout should be used with porcelain stone tiles.	
Mortar	
Depending on the application and conditions present, the use of a liquid-latex fortified sanded cement mortar, Polymer modified sanded cement, medium bed, or epoxy mortar is recommended for the installation of Porcelain Stone® tile.	

**NOTES**

Environmental Product Declarations (EPDs) are also available for Crossville Porcelain Tiles. Additionally, Crossville has also published a LEED compliant corporate sustainability report. These documents can be viewed and downloaded at <http://crossvilleinc.com/sustainability/leed-information/> .