

VALUE CHAIN CHEMICAL MANAGEMENT (VCCM) SYSTEM REPORT

Prepared for: Portobello America

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DOCUMENT SUMMARY

The following table identifies relevant details of this VCCM report:

CLIENT ADDRESS	Portobello America - Tennessee 8701 Ditty Road, Baxter, TN 38544
CLIENT TEAM	Jim Neel
WAP SUSTAINABILITY TEAM	Olivia LaMarche, Sustainability Manager Mary Rose Patwell, Sustainability Analyst
VCCM SYSTEM YEARS	2023
PRODUCT(S) in SCOPE	Portobello America Porcelain Tile manufactured in Baxter, TN
FORMULATION THRESHOLD	☒ 100 ppm ☐ 1000 ppm ☐ Other
REFERENCED CHEMICAL LISTS	• CFP • CA Prop 65 • CA Prop 65 (form-specific) • Living Building challenge 4.0 Red List • Living Building Challenge 4.0 Priority List • Living Building Challenge 4.0 Watch List • US EPA – EPCRA Extremely Hazardous Substances • US EPA – Priority PBTs (NWMP) • US EPA – Toxics Release Inventory (TRI) PBTs • US NIH – Report on Carcinogens • Cradle to Cradle – Core Restricted substances List V4.0 • EU Annex VI CMRs • EU REACH Annex XVII CMRs • REACH Annex XVII Restricted Substances • EU SVHC Candidate List • EU SVHC Authorisation List • EU SVHC Prioritisation List • Per- and polyfluorinated alkyl substances (PFAS) • Phthalates (Ortho-Phthalates)
DEFINED GOALS	
• Collect supplier data required for achievement of the Green Squared Certification • Analyze supplier data against the Green Squared Standard criteria • Prepare and publish an HPD to 100ppm for full product transparency • Assess material health impacts of the Porcelain Tile supply chain • Screen materials against regulatory and best practices lists to identify opportunities for optimization	

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1 MARKET UPDATE

NEW AT WAP SUSTAINABILITY

INC. 5000 – In its second year, WAP rises to [#1693](#) on the 2023 INC. 5000 list of the fastest-growing private companies in the United States. Many thanks to our clients for selecting us to help with all your Material Health, LCA, Carbon and ESG needs. We appreciate your trust and collaboration.

Welcoming Nicole Acevedo, PhD, Director of Material Health and Integrative Toxicology - WAP welcomes [Nicole Acevedo, PhD](#) as our Director of Material Health and Integrative Toxicology! Nicole brings a wealth of expertise in human and environmental health coupled with a deep commitment to creating safer, more sustainable solutions in the marketplace, and we are ecstatic to have her lead our efforts in this critical area.

Cradle to Cradle V4.0 - WAP was the first Cradle to Cradle (C2C) assessor to support certification of a furniture product under the new V4.0 standard – the [Haworth Zody II & Zody LX Task Chairs](#). WAP also supported Material Health certification of the first yarn product under V4.0 - [Universal Fibers Thrive® matter nylon 6 – silver](#) and [Thrive® matter nylon 6 – gold](#). C2C is the world's most rigorous framework for empowering the shift to a circular economy by setting the global standard for materials, products and systems that positively impact people and planet.

EMERGING REGULATIONS

Modernization of Cosmetics Regulation Act (MoCRA) - Passed in 2022 with several provisions that went into effect on December 29, 2023, MoCRA increases the FDA's ability to [act on public health priorities in the cosmetics, personal care and beauty products industries](#). While federal guidelines had not undergone any meaningful updates in six decades prior to MoCRA, many opportunities to significantly advance cosmetic safety were missed, particularly a greater emphasis on transparency by cosmetics makers and improving guidelines on chemical substances that are safe to use in beauty products.

EU Green Deal - The deadline for finalizing the [EU's Ecodesign for Sustainable Products Regulation](#) (ESPR) is in 2024. ESPR will set forth new requirements for encouraging a circular economy for products sold into the EU.

UK further loosening post-Brexit chemical regulations - The UK Government has proposed an [alternative transition model](#) for UK REACH that weakens human and environmental health protections in favor of reducing costs to industry. [Organizations have voiced concern](#) that the UK's priorities will set its consumer protections much further behind those of the EU REACH program.

US EPA TSCA reporting requirements for PFAS - TSCA's new rule expands the reporting of listed PFAS by eliminating the de minimis exemption for the [189 PFAS](#) that must be reported. The EPA stated that increased reporting will enable the agency to better examine the uses, releases, and waste management quantities of these PFAS. The rule became effective January 1, 2024, and requires covered facilities to report to EPA by July 1, 2025.

GLOBAL THEMES

Green Claims are a concern around the world. The US Federal Trade Commission (FTC) is in the process of refreshing [the Green Guides](#), which set standards for environmental marketing. The EU Commission has proposed a [Directive on Green Claims](#) that would require claim verification. WAP is seeing lots of confusion about this legislation and encourages our clients to reach out if they have concerns or questions.

PFAS are a versatile family of chemicals commonly used to impart water, oil, stain, chemical, and heat resistance. They are also found in greases and paints to reduce friction and improve durability. PFAS are associated with various hazards to people and the environment, and legislation aimed at reducing PFAS exposure is on the rise. Examples include the [proposed PFAS phase outs in the EU under the Green Deal](#), [an expanded reporting requirement in the US by the EPA under the TSCA](#), and more than [130 policies in different states](#) regulating the use or sale of PFAS-containing products. Most notable, laws in Maine, Minnesota, and Washington have given state agencies the authority to ban PFAS in a wide range of products. Additionally, eight states, including California, Colorado, Maine, Maryland, Minnesota, New York, Vermont, and Washington have adopted restrictions on PFAS in carpets, rugs, aftermarket treatments, and/or upholstered furniture, and California and New York adopted restrictions on PFAS in apparel. Similar to Prop 65 Notice of Violation letters, manufacturers, distributors and sellers of food packaging and cookware in California are receiving enforcement advisory letters to alert them to [statutory obligations for PFAS restriction and labeling](#). Furthermore, [ILFI has added over 5000 new PFAS chemicals to their Red List](#). WAP is following these developments in PFAS restrictions and will advise their clients on current and emerging requirements they may encounter.

2 VCCM SYSTEM UPDATE

WAP's Value Chain Chemicals Management System VCCM system is an ongoing system for Supply Chain Data collection. The VCCM system assists manufacturers in the collection and management of chemical information to support hazard screening, chemical transparency reporting, certification, and other health, safety, and environmental reports. For Portobello America, 2023 was the first year implementing the VCCM system.

The foundation of the VCCM is a comprehensive material ingredient database. Data for products and materials in the project scope are aggregated by referencing safety data sheets (SDS), existing material ingredient data from public and company sources, and primary material formulation data collected from suppliers. Primary supplier data with complete material formulations is prioritized to meet the VCCM goals of understanding material health impacts, preparing product transparency disclosures to the desired threshold, and screening against regulatory and restricted substances list. For this Portobello America VCCM project, the scope comprises all raw materials present in Portobello America's porcelain tile manufactured at the Baxter, Tennessee plant.

Once created, the VCCM data system is maintained through an annual update process to ensure it is accurate and on hand for turn-key analytics, product declarations, certifications, and any other customer or compliance inquiry that may arise. WAP updates VCCM system data annually through engagement with relevant material suppliers. The annual maintenance process assures that current ingredient inventory data is collected and assessed against the market's leading material health, transparency, and sustainability requirements. A summary of the results of Portobello America's 2023 VCCM Supply Chain Data Collection for materials purchased at the Baxter, Tennessee plant are outlined below.

2.1 SUPPLIER ENGAGEMENT

The VCCM data collection process begins with tailored supply chain engagement. Portobello America's suppliers were engaged throughout Q3 and Q4 of 2023. During this time, WAP contacted seven tier 1 suppliers. These seven suppliers cover the materials used in Portobello America's porcelain tile manufactured at Baxter. All seven of the suppliers responded to WAP's request for a response rate of 100%.

Within the final Porcelain Tile Bill of Materials, there are 15 total materials purchased by Portobello America. Through supplier outreach, WAP collected primary data for all 15 of the materials. WAP relied on the primary data to support the Green Squared certification, prepare the transparency documents, and complete the hazard screening.

In table 1 below, the response rate of the suppliers, and percentage of suppliers who self-reported having a Code of Conduct and Chemicals Policy is shown.

Table 1: Summary of VCCM supplier engagement responses

Product line	# Suppliers	% Responded	% Code of Conduct	% Chemicals Policy
Porcelain Tile	7	100%	86% * (6)	57% (4)

*One supplier has a code of conduct in progress, but not yet published

2.2 INPUT REVIEW

Breakdown of the 15 unique materials in Portobello America Ceramic Tile:

- 6 Clay body components, including sodium feldspar, ball Clay, and nepheline syenite
- 4 Inks/Pigments
- 4 Glaze Components including base glaze, over glaze, kilnwash, and grit
- 1 Deflocculant

3 MATERIAL INGREDIENT SCREENING

Following supply chain outreach, WAP reviewed supplier provided information and added materials to WAP's material database then screened Portobello America's database of materials against regulatory, best practices, and other brand relevant chemical lists to verify compliance and identify potential risks.

The following table shows the results of the VCCM Screening Matrix as of February 2024. Suppliers and their respective materials appear in the first two columns, followed by a column indicating whether the material is bound under any **proprietary** data restrictions. None of the raw materials in this VCCM campaign were bound by an NDA. The remaining columns reference the chemical lists each material's ingredients were screened against. Chemical lists change regularly, so the information below is current as of the date of this report. The presence of a substance is **at the material level** and not within the final product.

- **Yes** – At least one substance is present at greater than 1000ppm (0.1%) by weight in the material
- **<1000ppm** – At least one substance is present at less than 1000ppm (<0.1%) but greater than 100ppm (0.01%) by weight in the material
- **<100ppm** – At least one substance is present at less than 100ppm (<0.01%) by weight in the material

Ten lists that were screened against but are not included in Table 2 because no CASRNs in the raw materials appeared on those lists.

- Living Building challenge 4.0 Red List
- Living Building Challenge 4.0 Priority List¹
- Living Building Challenge 4.0 Watch List²
- US EPA – Priority PBTs (NWMP)³
- US NIH – Report on Carcinogens
- Cradle to Cradle Certified – Core Restricted substances C2C v4.0⁴
- EU SVHC Authorisation List
- EU SVHC Prioritisation List
- Per- and polyfluorinated alkyl substances (PFAS)
- Phthalates (Ortho-Phthalates)

¹LBC 4.0 Priority List includes chemicals that will be added to the LBC Red List in future versions. A chemical must be designated as "Priority" for at least 12 months before it can be added to the Red List.

²LBC 4.0 Watch List is to signal to manufacturers that ILFI has identified certain chemicals and compound groups for potential inclusion in the LBC Red List. Chemicals on the Watch List will be designated as priority prior to being added to the Red List.

³PBTs are persistent bioaccumulative toxic substances that do not degrade easily in the environment and are a growing focus of material health initiatives.

⁴C2C V4.0 Core RSL is the [Cradle to Cradle Standard Version 4.0 Restricted Substances List](https://www.cradletothecradle.com/standard/4.0-restricted-substances-list). All products applying for C2C certification must meet the restrictions included on the most up to date version of the RSL.

Table 2: VCCM Screening Matrix

Supplier	Part Name	Confidential	Data Source	CFP ⁵	CA Prop 65	CA Prop 65 ⁶ (form-specific)	US EPA EPCRA EHSs ⁷	US EPA Toxics Release Inventory (TRI) PBTs	EU REACH - Annex VI CMRs ⁸	EU REACH Annex XVII CMRs	REACH Annex XVII Restricted Substances	List - EU SVHC Candidate List
Imerys /KT Clay	TN Stone		Primary data	Yes	Yes	Yes			Yes		Yes	
Imerys /KT Clay	Super Strength 2		Primary data	Yes	Yes	Yes			Yes		Yes	
Sibelco North America	Na-Feldspar F1 WS		Primary data	Yes	Yes	Yes						
Sibelco North America	Na-Feldspar F2 WS		Primary data	Yes	Yes	Yes						
Short Mountain Silica	SMS Clay		Primary data	Yes	Yes	Yes	Yes		Yes		Yes	
3M Company	Nepheline Syenite 700 Wet		SDS	Yes	Yes	Yes			Yes	Yes	Yes	Yes
SICER USA	SCD015E-Ink Honey		Primary data									
SICER USA	SCD062E-Blue Ink		Primary data									
SICER USA	SCD071E-Special Absolute Black Ink		Primary data									
SICER USA	SCD080E-Red Brown Ink		Primary data									
SICER USA	SCM3688-Matte Transparent Glaze		Primary data	Yes	Yes	Yes		Yes			Yes	
SICER USA	SEM2110-Smaltoobbio Low Zircon		Primary data	Yes	Yes	Yes		Yes			Yes	
SICER USA	SGM6019-Transparent Anti-Glare HI-Resistance Grit		Primary data		Yes			Yes			Yes	
SMALTICERAM USA Inc.	2SF0030, Kilnwash		Primary data	Yes	Yes	Yes			Yes		Yes	

⁵ CFP lists chemicals that are included in metrics for the Chemical Footprint Project, which allows companies to assess the total mass of chemicals of high concern (CoHCs) used in their products and organization.

⁶ CA Prop 65 (form-specific) list includes chemicals whose hazard is specific to the form during exposure. These chemicals are hazardous only if unbound and/or particles of respirable size.

⁷ EPA EPCRA refers to the EPA's Emergency Planning and Community Right-to-Know Act list of [Extremely Hazardous Substances](#).

⁸ EU Annex VI CMRs include all substances classified as [carcinogenic, mutagenic or toxic for reproduction of category 1A, 1B or 2 under Regulation \(EC\) No 1272/2008 \(CLP\)](#). For C2C Silver level and above, the product cannot contain substances above 100ppm classified as CMR on EU Annex VI.

Supplier	Part Name	Confidential	Data Source	CFP ⁶	CA Prop 65	CA Prop 65 ⁶ (form-specific)	US EPA EPCRA EHSs ⁷	US EPA Toxics Release Inventory (TRI) PBTs	EU REACH - Annex VI CMRs ⁸	EU REACH Annex XVII CMRs	REACH Annex XVII Restricted Substances	List - EU SVHC Candidate List
Bulk Chemical Services	BCS 4210		Primary data								<1000 ppm	

Sixteen individual chemical substances comprise the chemicals of concern in the material ingredient screening table (Table 2). Those specific substances are presented below.

Table 3: Chemicals of concern present in Portobello America's purchased raw materials

CASRN	Substance Name	CFP	CA Prop 65	CA Prop 65 (form-specific)	US EPA EPCRA EHSs	US EPA Toxics Release Inventory (TRI) PBTs	EU REACH - Annex VI CMRs	EU REACH Annex XVII CMRs	REACH Annex XVII Restricted Substances	List - EU SVHC Candidate List
79-10-7	Acrylic acid								Yes	
1344-28-1	Aluminum Oxide	Yes								
14808-60-7	Amorphous Quartz	Yes	Yes	Yes						
1303-96-4	Borax decahydrate, disodium tetraborate decahydrate	Yes					Yes	Yes	Yes	Yes
1305-78-8	Calcium Oxide								Yes	
1333-86-4	Carbon black	Yes	Yes	Yes						
1332-58-7	Clay	Yes								
65997-18-4	Frits, chemicals		Yes			Yes			Yes	
64742-52-5	Hydrotreated heavy naphthenic distillates	Yes					Yes	Yes	Yes	
1318-94-1	Muscovite	Yes								
1314-56-3	Phosphorus oxide (P2O5)								Yes	
7446-11-9	Sulfur trioxide				Yes				Yes	
14807-96-6	Talc		Yes							

CASRN	Substance Name	CFP	CA Prop 65	CA Prop 65 (form-specific)	US EPA EPCRA EHSs	US EPA Toxics Release Inventory (TRI) PBTs	EU REACH - Annex VI CMRs	EU REACH Annex XVII CMRs	REACH Annex XVII Restricted Substances	List - EU SVHC Candidate List
13463-67-7	Titanium dioxide	Yes	Yes	Yes			Yes		Yes	
1314-13-2	Zinc Oxide								Yes	
14940-68-2	Zircon (Zr(SiO4))									

3.1 IDENTIFIED HAZARDS:

Clay bodies contain forms of quartz (e.g., amorphous, crystalline, fused, etc.) and many color concentrates contain carbon black or titanium dioxide. These compounds and substances are typically associated with form-specific hazards, which means the hazards are only relevant when there is the potential for particles of specific sizes to be inhaled. Inhalation of unbound particles of respirable size is only relevant in the manufacturing setting, and not in the final products. Hydrotreated heavy naphthenic distillates are recognized in the EU as carcinogenic and included on the EU REACH Annex VI as a classified carcinogen 1B. Classification as a carcinogen for certain complex oil-derived substances does not apply if it can be shown that the substance contains less than 3% DMSO extract. Borax decahydrate, disodium tetraborate decahydrate, a commonly used borate, is included on the EU REACH Annex VI as a classified reproductive toxicity 1B, with potential to harm the unborn child.

4 TRANSPARENCY DOCUMENTATION

For this VCCM data cycle, one HPD was published for the Portobello America Porcelain Tile manufactured at the Baxter, TN plant.

Table 3: Summary of current Portobello America transparency documents

Product line	Document type	Expiration date	Link
Porcelain Tile	HPD	May 10, 2025	Porcelain Tile HPD ⁹

⁹ https://hpdrepository.hpd-collaborative.org/repository/HPDs/1466_Porcelain_Tile.pdf

5 RECOMMENDATIONS & NEXT STEPS

Overall, the supplier engagement went well and WAP was able to get data from all the suppliers. The scope of the VCCM is meant to include all raw materials used in the manufacturing of the porcelain tile at the Baxter, TN plant. For the next round of the VCCM outreach, WAP wants to ensure that we are reaching out to all the suppliers and not just a sample of the suppliers for the raw materials used in the representative BOM. If there are any additional suppliers WAP did not contact in this round of outreach, we will focus on those suppliers next year.

Based on the data collected from suppliers, Portobello America would be a candidate for publishing a red list free Declare Label. “Declare is a nutrition label for building products. It is designed to help specifiers quickly identify products that meet their project requirements. Declare labels disclose all intentionally-added ingredients and residuals at or above 100ppm (0.01%) present in the final product by weight. Each ingredient must be reported with a chemical name, CAS number, and percentage or percentage range.” You can read more about Declare Labels on the [Declare Label Website](#). Like the HPD, WAP can facilitate the publication of the Declare Label should Portobello elect to go this route.

Portobello America’s Health & Safety policies, practices, and procedures at the Baxter plant should be reviewed to ensure they are in line with the hazards identified in the VCCM Screening Matrix (see Section 3). The primary hazards identified are associated with the inhalation of hazardous particles. Based on the hazards Portobello America should ensure implementation of proper PPE to prevent inhalation risk.

The primary formulation data that Sicer shared with WAP in our VCCM Survey was not consistent with the formulations listed in their Safety Data Sheets. WAP chose to proceed with the primary information provided in the VCCM Survey. Next maintenance cycle WAP will engage with Sicer to reconcile the discrepancies between the SDS and BOMs to make sure we are capturing the most accurate formulation data.

Based on some of the substances found in 3M’s Nepheline Syenite WAP wants to prioritize learning more about their exact compositional percentages during maintenance. 3M only provided an SDS and with a more specific Bill of Materials WAP can assess the actual composition of the substances currently flagged as hazardous to determine the actual risks. WAP and Portobello should request testing data from 3M during the next maintenance to demonstrate the level of DMSO extract is <3%. The classification as a carcinogen for certain complex oil-derived substances does not apply if it can be shown that the substance contains less than 3% DMSO extract.

APPENDIX A: GLOSSARY OF ABBREVIATIONS AND ACRONYMS

BOM: Bill of Materials
BIFMA: Business Institutional Furniture Manufacturers Association
C2C: Cradle to Cradle
CA Prop 65: California Proposition 65
CFP: Chemical Footprint Project
CoHC: Chemicals of High Concern
CMR: Carcinogenic, Mutagenic, or Reprotoxic
EHS: Extremely Hazardous Substance
EPCRA: Emergency Planning and Community Right-to-Know Act
EU REACH: European Union Registration Evaluation Authorisation and Restriction of Chemicals
GSPI: Green Science Policy Institute
HPD: Health Product Declaration
ILFI: International Living Future Institute
LBC: Living Building Challenge
MH: Material Health
NWMP: National Waste Minimization Program
PBT: Persistent, Bioaccumulative, and Toxic
PFAS: Per- and polyfluoroalkyl substances
RSL: Restricted Substances List
SDS: Safety Data Sheet
SVHC: European Union Substance of Very High Concern
TRI: Toxics Release Inventory
VCCM: Value Chain Chemical Management
US EPA: United States Environmental Protection Agency
US NIH: United States National Institutes of Health