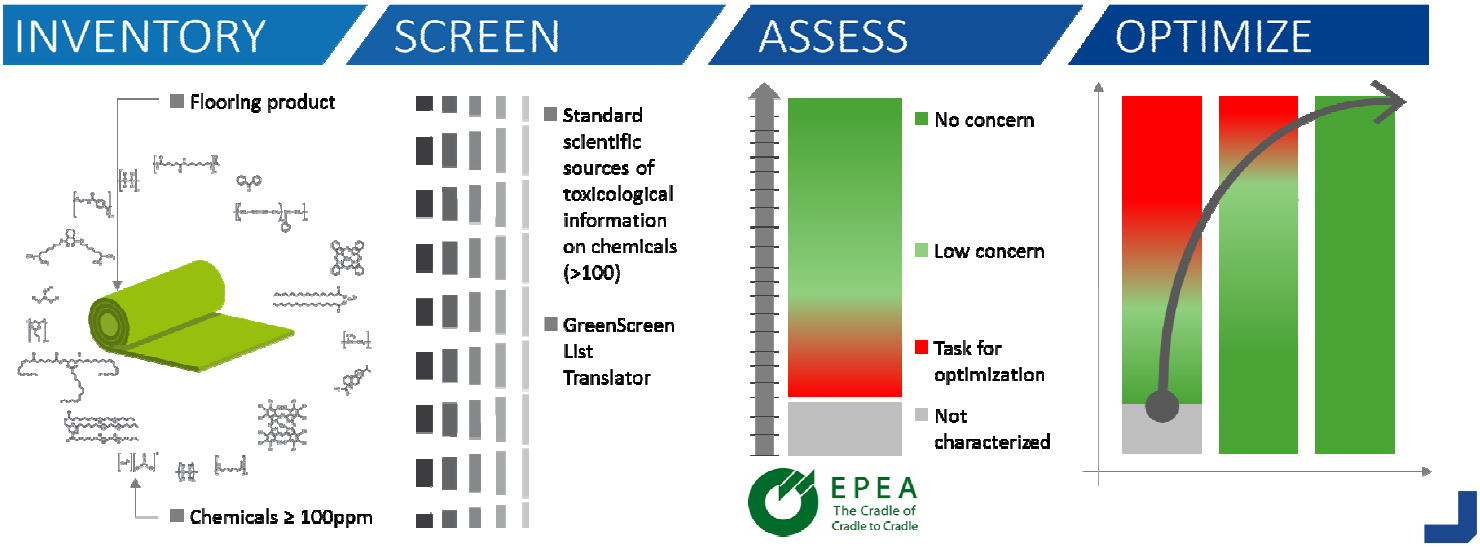
Tarkett's Path to Positive Optimization Strategy

It is estimated that we spend approximately 90% of our time indoors, therefore, it is important to consider the building materials with which we surround ourselves. Tarkett's goal is to design products that will enhance the human experience and allow us to live and work in spaces that promote health and well-being. Transparency and material reporting is essentially the first step but in order to make real and significant changes, we need to go a step further and not only inventory, screen and assess, but also optimize products for present and future uses.

At Tarkett, the optimization of our product compositions is at the core to our "Closed Loop, Circular Design" strategy powered by Cradle to Cradle® principles and the Circular Economy.
Tarkett's goal is to design our products today to be our raw materials of tomorrow, applying the first Cradle to Cradle® principle (Waste = Food), to select healthy and safe materials that can be perpetually cycled.



The Cradle to Cradle Product Optimization process is based on the following 4 steps:

- **Material Inventory:** In collaboration with our suppliers, we inventory the raw materials used in our products to 100 ppm (parts per million) and identify them by Chemical Abstracts Service Registry Number (CASRN).
- **Material Screening:** Individual chemicals are screened for their hazard rating using the Green Screen List Translator (GS-LT), along with more than 100 chemical hazard lists and scientific sources of toxicological information in use at EPEA (Environmental Protection and Encouragement Agency), the European Cradle to Cradle scientific research Institute based in Germany. For more information, please visit EPEA website (http://www.epea.com).
- **Material Assessment**: The product and its materials are assessed according to the Cradle to Cradle® principles and considering both the intrinsic hazard/safety properties of chemicals and occupant exposure. The product's environmental and health quality is assessed on the basis of a target scenario where materials involved in sourcing, production, use and post-use handling serve as technical nutrients for future production or interact beneficially with exposed organisms and ecosystems as biological nutrients. The assessment is conducted by EPEA.
- **Optimization:** Products are reformulated using Cradle to Cradle® principles, by selecting materials that are safe, healthy and beneficial for humans and the environment and that can be perpetually cycled.

Thank you for considering our products and for your commitment to improving the built environment.

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Tarkett | THE ULTIMATE FLOORING EXPERIENCE

Material Health Statement - MHS™

EPEA The Cradle of Cradle to Cradle

OMNISPORTS

Issued to: Tarkett

Issue date: October 4., 2017

Expiration date: October 3., 2019

Evaluation threshold: At least 100 ppm of the final product

After-use scenario: Tarkett ReStart® program

EPEA Registry No: 39859.1 MHS Version: 2.0

MATERIAL FUNCTION	CHEMICAL COMPONENTS	CASRN	% IN PRODUCT	EPEA RATING*	COMMENT ON EPEA RATING	GS-LT/ GS-BM**	REACH
Polymer	PVC	9002-86-2	25-35		Transitional use of PVC is tolerated in durable applications designed with safe materials and a collection and recycling program in place. Vinyl chloride monomer content is below 1ppm. Tarkett provides for after use a take back guarantee within the ReStart reclaiming program. For more information, please visit EPEA's position on PVC and chlorine management**. Pre-additives unknown.	LT-UNK	✓
	Pre-additives	Proprietary 3	<2			N.I.	✓
Plasticizer	Benzoic acid nonyl ester (INB)	670241-72-2	15-30		Alternatives to phthalate plasticizers. INB, for which there good indication of absence of (eco)toxicological relevance, is ready biodegradable. DINCH is produced by hydrogenation of DINP with thus modified properties. No toxicity identifiable, especially no mutagenicity, carcinogenicity or reproductive toxicity observed in animal tests. Capacity of MINCH (primary metabolic product of DINCH) to interfere with the metobolism and differentiation of adipocytes in vitro experiments was object of a publication of 2015. DBT is an equivocal sensitizer.	N.I.	✓
	Dibutyl terephtalate (DBT)	1962-75-0				N.I.	✓
	Diisonylcyclohexane (DINCH)	166412-78-8				LT-UNK	✓
	Acetyltributyl Citrate	77-90-7				LT-P1	✓
	Di-2-ethylhexyl-adipate	103-23-1				LT-P1	✓
Heat Stabilizer s	Epoxidized soybean oil	8013-07-8	<1		Acts as plasticizer and scavenger of hydrochloric acid that may be formed during the flooring use.	LT-UNK	✓
	Tris(isotridecyl) phosphite	77745-66-5			Weak sensitization potential, migration potential unknown	LT-P1	✓
	Zinc octanoate	136-53-8			Zinc is essential trace element. Migration potential of the different components of the heat stabilization system is unknown. Barium has no biological role and toxic in form of soluble salts. Planned further evolution of recipes to substitute barium octanoate and increase the level of chemical definition of inputs.		✓
	Zinc octanoate, basic	85203-81-2				LT-UNK	✓
	Potassium octanoate	764-71-6				LT-UNK	✓
	Sodium octanoate	1984-06-1				LT-UNK	✓
	2-(2-butoxyethoxy)-ethanol	112-34-5				LT-P1	✓
	Barium octanoate	2457-01-4				LT-UNK	✓
Filler	Calcium Carbonate	1317-65-3	18-30		Natural minerals used with low levels of quartz. No concern in the finished product.	LT-UNK	✓
	Quartz	14808-60-7	<0.03			BM1	✓
Pigments	Titanium dioxide	1317-70-0	<0.5		Potential health issue related to dust inhalation during mining/production. No concern in the finished product.	LT-1	✓
	Pigment black 7	12768-98-8				N.I.	✓
	Defined pigments	Proprietary 2			Chlorinated pigments and pigments containing copper represented.	BM3 LT-UNK	✓
	Undefined pigments	Proprietary 3				N.I.	✓
Carrier	Nonwoven glass fiber tissue	Proprietary 3	<1		The length of glass fibers exceeds 10 microns; Assessment pending.	N.I.	✓
	Binder	Proprietary 3				N.I.	✓

MATERIAL FUNCTION	CHEMICAL COMPONENTS	CASRN	% IN PRODUCT	EPEA RATING*	COMMENT ON EPEA RATING	GS-LT/ GS-BM**	REACH
Coating	Dipentaerithrytol hexacrylate	29570-58-9	<1		Polyurethane acrylate coating chemistry that is UV cured during application.	N.I.	✓
	Components of aliphatic waterborne urethane	Proprietary 3				N.I.	✓
	Water	7732-18-5				N.I.	✓
Flame retardants	Aluminium hydroxide	21645-51-2	<2		Planned evolution of the recipe for substitution of this Antimony trioxide that is classified for carcinogenicity.	BM2	✓
	Antimony trioxide	1309-64-4	<0.5			BM1	✓
Blowing Agent	Azodicarbonamide (residual)	123-77-3	<0.1		Azodicarbonamide has mutagenic potential and is classified as substance of very high concern (SVHC) in the EU for its strong sensitization potential. It is decomposed to benign chemicals during the blowing reaction and present at most as traces in the finished product.	LT-UNK	✓
	Zinc oxide	1314-13-2	<0.2			LT-P1	✓
Other	Wetting & Dispersing additive	Proprietary 3	<1		Proprietary polar acidic ester of long chain alcohols	N.I.	✓
	methyl butyl terephthalate	52392-55-9	<0.15		Plasticizer synthesis impurity	N.I.	✓
TOTAL VIRGIN CONTENT			**75 - 80**				

UNDEFINED	% IN PRODUCT	COMMENT
Recycled PVC flooring	20 - 25	Mainly post-industrial PVC of Tarkett (composition see above), and some post-consumer PVC being REACH compliant.
Other undefined	<1.2	Coming from the undefined part of some production inputs

EPEA's rating methodology is based on the Cradle to Cradle approach with the European Precautionary principle. It is made in relation with a quality target, an after-use scenario and on the background of the specific supply chain materials used by the article's manufacturer. The assessment of hazard/safety properties of chemicals is made at the best of our knowledge at the date of MHS™ issue: (See MHS Development Guidance V2.0). EPEA believes the data forth herein are accurate as of the date hereof. EPEA makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data are offered solely for your consideration, investigation and verification.

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Legend:

EPEA RATING:
- No concern
- Moderate concern
- High concern – Task for material optimization
- Unknown concern – Task for knowledge development

REACH compliance:
✓ : Substance complies with REACH regulation European Union Regulation EC 1907/2006 applicable to this article or substance is listed neither in Annex XIV nor in Annex XVII nor as SVHC
XVII or **XIV**: Substance listed in Annex XVII (Restriction) or Annex XIV (Authorisation) of REACH regulation applicable to this article
SVHC: Substance of Very High Concern. Candidate for listing in Annex XIV (Authorization list) of REACH Regulation at a concentration above 0.1%

GS-LT*
LT-1: Chemical is found on an authoritative list of the most-toxic chemicals
LT-P1: Chemical may be a serious hazard, but the confidence level is lower
LT-UNK: Unknown (no data on List Translator Lists)

GS- BM*
BM1: Avoid: Chemical of High Concern
BM2: Use but search for Safer Substitutes
BM3: Use but still opportunity for improvement
BM4: Prefer: Safer Chemical
BMU: "Unspecified"; insufficient data
N.I. (No GS rating): Chemical is not listed in the source of GS and GS-LT ratings

* GreenScreen List Translator Score and GreenScreen Benchmark Score according to Toxnot classification (https://toxnot.com/)

** For EPEA's position on PVC and chlorine management. Please see: http://epea.com/de/node/1322

Proprietary 1, 2 or 3: Distinguishing between owners of information (see See MHS Development Guidance V2.0)

LEED v4 – Score Card

Omnisports

MATERIAL & RESOURCES

MRc2. Building product disclosure and optimization – Environmental Product Declarations

☐ Option 1: Environmental Product Declaration (EPD) – 1 point

☐ Product-specific EPD ☐ Industry-wide (generic) EPD ☐ Product-specific declaration

☐ Option 2: Multi-attribute Optimization – 1 point

☐ 3rd party certified products that demonstrate impact reduction below industry average

MRc3. Building product disclosure and optimization – Sourcing of Raw Materials

☑ Option 1: Raw Material Source and Extraction Reporting – 1 point

☑ U.N. Global Compact ☐ GRI Sustainability Report ☐ ISO 26000 ☐ OECD

☑ Option 2: Leadership Extraction Practices – 1 point

Bio-based materials	Pre-Consumer	Post-Consumer	Manufacturing Location	Extended Producer Responsibility
-	19-31%	-	Sedan, FR	Yes (ReStart® program)

MRc4. Building product disclosure and optimization – Material Ingredients

☑ Option 1: Material Ingredient Disclosure – 1 point

☑ Manufacturing Inventory ☐ Cradle to Cradle Certification ☐ Declare ☐ HPD

☐ Option 2: Material Ingredient Optimization – 1 point

☐ Cradle to Cradle Certification ☐ GreenScreen Benchmark ☑ REACH ☐ Other

MRc5. Construction and demolition waste management

☑ Reclamation and recycling program proposed – Tarkett's ReStart® program

INDOOR ENVIRONMENTAL QUALITY

EQc1. Enhanced Indoor Air Quality strategies

☐ Enhanced IEQ Strategies – Abrasive Action entry walk-off systems – 1 point

EQc2. Low-emitting materials

☑ Certification compliant with California Department of Public Health (CDPH) – FloorScore®

TVOC emissions ☑ 0.5 mg/m³ or less ☐ Between 0.5 and 5.0 mg/m³ ☐ 5.0 mg/m³ or more

For more information please visit www.tarkettna.com/mhs or contact us mhs@tarkett.com

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