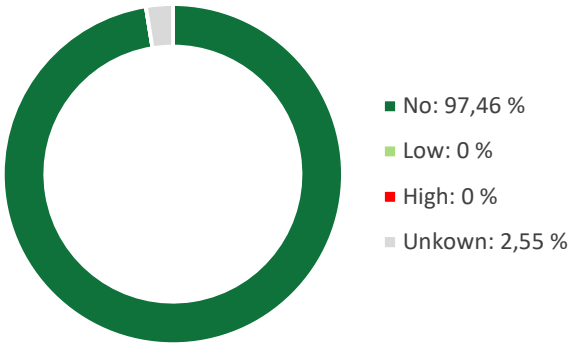
iD Square

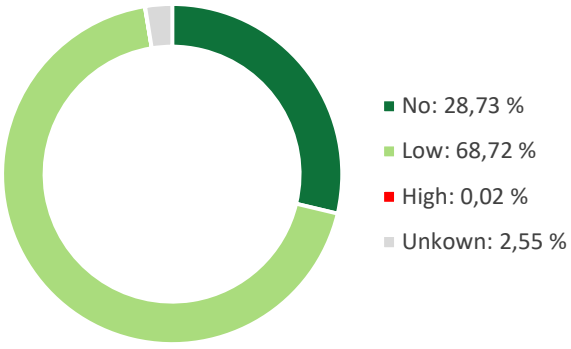
Company:	**TARKETT**
Product specifications	iD Square; Even Plane
Issue date:	October 15., 2023
Expiration date:	October 14., 2025
Evaluation and declaration threshold:	At least 100 ppm of the final product
After-use scenario:	Tarkett proposes to take back your installation residues and your products after use, thanks to the TARKETT ReStart® Program. **Check Tarkett national websites for Restart program availability**
EPEA Registry No:	40507.2
MHS Version:	3.0

Chemicals Risk Assessment: Concern level

Rating for the use phase



Overall rating



This summary presents the average mass weighted distribution of material health ratings presented on next pages. Ratings address benefits and risks of chemical components of the product for humans and the living environment:

- during the phase of use of the product.
- overally while taking into account a) the last manufacturing step using raw materials leading to them in the product's composition, b) the production of raw materials in the supply chain as far as information is attainable from suppliers or from generic literature, and c) the intended management scenario after use.

The benefit and risk analysis follows a qualitative and quantitative breakdown of the product's chemical composition from the chemical composition of raw materials, a reconstruction of chemical transformation pathways and an anticipation of the chemical's behaviour during the intended after-use processing. This information is combined with physical and (eco)toxicological properties of pure chemicals obtained from governmental and non-governmental scientific organisations to derive a level of concern.

The MHS is making transparent at a point in time results of the company's activities for developing benefits of the product, including environmental and health benefits, with its purchasing and commercialization practices.

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FUNCTION	CHEMICAL	CAS	CONTENT	EPEA RATING		GS-LT GS-BM[a]	REACH
				Use phase	Overall		
PVC	**Polyvinylchloride**	9002-86-2	40.3%			LT-P1	✓
	PVC polymerization additives[b]	*Proprietary[c]*	1.5%			N.I.	-
	Transitional use of PVC is tolerated in durable applications designed with good materials and a collection and recycling program in place[d]. Vinyl chloride content is below 1 ppm in purchased products. The PVC resin products are produced with chlorine originating from membrane-based chloralkali processes according to today best available technologies. Suppliers of the PVC resin products do not disclose the identity of polymerization auxiliaries. Mentioned amounts are estimate maxima based on scientific literature and the knowledge of the polymerization process type. VOC tests performed on comparable products do not indicate immediate emissions that could be traced back to polymerization additives. *Nanomaterials: No.*						
Fillers	**Calcium carbonate**	**471-34-1**	33.8%			LT-UNK	✓
	Aluminium trihydrate	**1333-84-2**				LT-UNK	✓
	Crystalline silica - Quartz type[b]	*14808-60-7*				LT-1	✓
	Glass fibers[b]	*65997-17-3*				LT-UNK	✓
	Fillers consist of pulverized calcium carbonate of virgin with particles with a mean size of 20 and 40 µm respectively and the flame retardant aluminium trihydrate. Calcium carbonate and glass fibres originating from recycled flooring recover a function as filler. Low levels of quartz contained in virgin calcium carbonate raw materials. *Nanomaterials: No*						
Plasticizers	**1,2-Cyclohexanedicarboxylic acid, 1,2-diisononyl ester (DINCH)**	**166412-78-8**	19.5%			LT-UNK	✓
	Terephthalic acid, dioctyl ester (DEHT)	**6422-86-2**				LT-UNK	✓
	Dibutyl terephthalate (DBT)	**1962-75-0**				None	✓
	Bis(2-ethylhexyl)adipate (DEHA)	**103-23-1**				LT-P1	✓
	1,2-Cyclohexanedicarboxylic acid, 1-methyl, 2-iisononyl ester (MINCH)[b]	*Not available*				N.I.	✓
	Terephthalic acid, butyl methyl ester (MBT)[b]	*52392-55-9*				N.I.	✓
	Alternative to phthalate plasticizers approved for food contact application with high migration limit reflecting a much better safety profile. 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. DBT is an equivocal sensitizer. No concern with synthesis impurities MBT and MINCH irrespective of their amount < 0.1% in the total composition. *Nanomaterials: No*						
Heat stabilizers	**Soybean oil, epoxidized (ESBO)**	**8013-07-8**	1.9%			LT-P1	✓
	Triisotridecyl phosphite	**77745-66-5**				LT-P1	✓
	Triisodecyl phosphite	**25448-25-3**				LT-P1	✓
	Hexanoic acid, 2-ethyl-, zinc salt, basic	**85203-81-2**				LT-UNK	✓
	Neodecanoic acid, zinc salt, basic	**84418-68-8**				None	✓
	2-Ethylhexanoic acid, potassium salt	**3164-85-0**				LT-UNK	✓
	Dibenzoylmethane	**120-46-7**				LT-UNK	✓
	2-(2-n-Butoxyethoxy)ethanol	**112-34-5**				LT-P1	✓
	Benzene, C10-13-Alkyl derivatives	**67774-74-7**				LT-UNK	✓
	Other heat stabilizer components	**Proprietary**				LT-P1	✓
						LT-UNK	✓
						N.I.	-
	ESBO is a scavenger of hydrochloric acid that may be formed during the production and the flooring use period. It has additionally a plasticizing effect. The migration potential of hazardous components of the heat stabilization system is expected low if not even absent due to absence of volatility. Conditions for restrictions of the volatile 2-(2-n-Butoxyethoxy)ethanol defined in EU legislation do not apply to occurrences in flooring productions recipes. *Nanomaterials: No*						

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FUNCTION	CHEMICAL	CAS	CONTENT	EPEA RATING		GS-LT GS-BM[a]	REACH
				Use phase	Overall		
Reinforcement	**Glass veil**	**65997-17-3**	1.4%			LT-UNK	✓
	Polyethylenterephthalate	**25038-59-9**				LT-UNK	✓
	Binder chemicals	**Proprietary**				N.I.	
	A glass fibre veil and a polyester veil are two alternatives for enhancing the dimension stability of iD Square. They are encapsulated in the flooring matrix. The glass fibre based veil consists of fibres with a diameter exceeding 10 µm and a length of 12 mm. No information on the specific binder composition (About 25% of the reinforcement system) but no concern seen. Nanomaterials: No						
Coloration agents	**Titanium Dioxide**	**13463-67-7**	0.5%			LT-1	✓
	Carbon Black	**61512-59-2**				BM1	✓
	Pigment Yellow 93	**5580-57-4**				LT-P1	✓
	Pigment Blue 15:1	**12239-87-1**				LT-UNK	✓
	Other pigments	**Proprietary**				LT-UNK	✓
						LT-UNK	✓
						LT-UNK	✓
						N.I.	-
	The globally non-consensual labelling of titanium dioxide with the H351i (Suspected of causing cancer via inhalation) applies to titanium dioxide in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm. This does not apply to titanium dioxide products used for the production of iD Square. Potential health issue related to dust inhalation during mining/production of titanium dioxide raw materials not excluded, though. No concern in the finished product due to encapsulation in the polymer matrix. *Copper containing pigments are not recommended in the context of PVC for prevention of the formation of dioxins in case of accidental fire. No issue under normal conditions of use and in the target ReStart® recycling scenario.* *Chlorinated pigments are seen problematic because their demand contributes to stabilizing the general market offer of chemicals not supported by the charter for a responsible use of PVC and chlorine management[d].* *Nanomaterials: No*						
Other additives, processing aids and impurities	**Azodicarbonamide**	**123-77-3**	1.0%			LT-UNK	✓
	Sodium oxide	**12401-86-4**				LT-UNK	✓
	Other additives	**Proprietary**				LT-UNK	✓
						N.I.	-
	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. At most 0.2% of the total product composition, originating from both virgin and recycled content, are not defined in this functional category.For the other identified components, no significant hazards and no risk expectable. *Nanomaterials: No*						
Surface Treatment	**Pentaerythritol tetraacrylate**	**4986-89-4**	0.1%			LT-UNK	✓
	Other precursors of the surface treatment	**Proprietary**				LT-P1	✓
						LT-UNK	✓
	Complex coating macropolymer based on polyurethane acrylate that is UV cured during application. It fulfils a double function as protection of the flooring against abrasion during use and barrier against migration of mobile chemicals to the indoor environment. Chemicals listed in this section are not present as such in the finished product anymore and have lost properties that lead to specification for hazard labelling of raw materials. While recycling within the ReStart® process, surface treatment lose their function and contribute as a filler without detrimental impacts to the safety properties of flooring products of the next generation. *Nanomaterials: No*						

THEREOF			
Content sourced from abundant minerals		50%	Calcium carbonate and the chlorine of PVC originate from abundant mineral resource.
Recycled content	- Internal post-industrial source (Reprocessed own production output)	1.9%	The recycled content used to produce iD Square is originating from Tarkett own production. Its composition is currently chemically defined for 95% of its mass.
	- Post-installation / Pre-use source	-	
	- Post-use source	-	
Biologically renewable content	- Animal	-	No chemical with a possible animal origin is identified.
	- Vegetal	1.0%	Epoxydized soybean oil is of vegetal origin.

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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 further MHS V3.0 Development Guidance). 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.

Dr. Peter Mösle
Partner & Managing Director

Dr. Alain Rivière
Scientific Supervisor

EPEA
PART OF DREES & SOMMER

Legend:

EPEA RATINGS	REACH compliance:	GS-LT[(b)]	GS- BM[(b)]
No concern Low concern High concern – Task for material optimization Risk cannot be verified Task for knowledge development	✓: Substance is listed neither in Annex XIV nor in Annex XVII nor as SVHC and complies with European Union Regulation EC 1907/2006 applicable to this article. **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% - : Not applicable due to missing CAS	**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)	**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

(a) GreenScreen List Translator Score and GreenScreen Benchmark Score according to 3E Exchange

(b) Component originating either from the natural resource or from virgin or recycled raw material without functionality in the product's context.

(c) Proprietaries can be due to the decision of the producer or result from non-communication of the full composition of used raw materials either to producer, or to EPEA, or both.

(d) Please refer to EPEA's position on PVC and chlorine management