



ENVIRONMENTAL PRODUCT DECLARATION

DAPcons® .100.007



IN ACCORDANCE WITH STANDARDS
ISO 14.025 and UNE EN 15804 + A1



PRODUCT

KRION®
Porcelanosa Solid
Surface Adhesive

COMPANY

SYSTEMPOOL
PORCELANOSA Grupo

PRODUCT DESCRIPTION

The product KRION® Porcelanosa Solid Surface Adhesive is a two-component acrylic adhesive for the joining and sealing of solid surfaces achieving imperceptible and high-strength joints.

PCR REFERENCE

RCP100 - Productos de construcción en general - V.2 (2016)

PRODUCTION PLANT

SYSTEMPOOL, S.A.
Ctra. Villarreal - Puebla Arenoso (CV20)
Km 1 12540 Villarreal (Castellón)
SPAIN

VALIDITY

From: 22/12/2017
To: 22/12/2022

The validity of DAPcons® .100.007 is subject to the conditions of DAPcons® regulations. The relevant version of this DAPcons® is included in the register kept by the CAATEEB; for more information, consult the Program Operator's website: www.csostenible.net



Environmental Product Declaration KRION® Porcelanosa Solid Surface Adhesives Executive Summary

PROGRAM OPERATOR DAPconstrucción® Environmental product declarations in the construction sector www.csostenible.net	
ADMINISTRATOR OF THE PROGRAM OPERATOR Col·legi d'Aparelladors, Arquitectes Tècnics de Barcelona i Enginyers de l'Edificació (CAATEEB) Bon Pastor, 5, 08021 Barcelona www.apabcn.cat	
HOLDER OF THE DECLARATION SYSTEMPOOL, S.A. Ctra. Villarreal - Puebla Arenoso (CV20) Km 1 12540 Villarreal (Castellón) SPAIN DECLARATION CARRIED OUT BY: ReMa-INGENIERÍA, S.L. Calle Crevillente 1, entlo, 12005 - Castellón - SPAIN	
DECLARATION NUMBER:	DAPcons®.100.007
PRODUCT DECLARED	KRION® PORCELANOSA SOLID SURFACE ADHESIVES
PRODUCT DESCRIPTION The product KRION® Porcelanosa Solid Surface Adhesive is a two-component acrylic adhesive for the joining and sealing of solid surfaces achieving imperceptible and high-strength joints. Non-toxic and committed to the environment as indicated by the different NSF, Greenguard Gold and REACH certificates among others.	
REGISTRATION DATE	22/12/2017
VALIDITY This verified declaration authorises the holder to use the DAPcons® eco-label logo. The declaration is applicable exclusively to the product in question and for five years as of the date of registration. SYSTEMPOOL, S.A. is responsible for the information contained in this declaration.	
ENDORSED BY CAATEEB: Mr. Jordi Gosalves i López, President of the CAATEEB	ENDORSED BY AUTHORISED VERIFIER: Sr. Ferran Pérez, Verifier accredited by the Program Operator DAPconstrucción®
This environmental product declaration complies with standards ISO 14025 and UNE EN 15804 + A1 and contains information of an environmental nature about the life cycle of KRION® Porcelanosa Solid Surface Adhesives manufactured by SYSTEMPOOL, S.A. in its production center in Villareal, Castellón (Spain). This declaration is based on the document RCP 100 Productos de construcción en general - Versión 2 - 29.02.2016. The environmental product declaration (DAPcons®) may not be comparable to another EPD if it is not based on the UNE EN 15804 + A1 standard	

Environmental Product Declaration KRION® Porcelanosa Solid Surface Adhesives

1. Description of the product and its use

KRION® Porcelanosa Solid Surface Adhesives can be used to create sections without visible joints with KRION®, thanks to the parallel production of KRION® colors. The result is a continuous element, with no visible cuts and a smooth design. In addition to the design, this helps to prevent the absorption and filtration of liquids, making maintenance and cleaning much easier. KRION® adhesives are formulated with the latest technology for the solid surface industry and offer an excellent connection between the sheets. KRION® Porcelanosa Solid Surface Adhesives are composed of two components (component A and component B), have a high resistance to water, scratching and high temperatures. Likewise, it has a greater resistance to impact and tenacity than other adhesives for solid surfaces in the market.

It is manufactured to the highest standard available and faces rigorous quality control tests before its sale and distribution. Customers will also benefit from the environmental compliance properties of KRION® adhesives. In addition, KRION® Porcelanosa Solid Surface Adhesives complies with the low VOC content emission limits requirements for Greenguard Gold, certified by UL. KRION® adhesives have been verified to show that none of the substances that appear on the SVHC (Substances of Very High Concern) list, published by ECHA (European Chemicals Agency), are present in its formula. The KRION® adhesive complies with article 7 "Registration and notification of substances contained in the articles" of the REACH Regulation and with the fact that it does not contain any SVCH in a concentration higher than 0.1%. In addition, the NSF / ANSI 51 regulation "Food Contact Materials" certifies that the material can be used on surfaces in contact with food.

This product is available in a wide range of colors and in two types of cartridges (50 ml and 250 ml). The results of this declaration correspond to an average product of these two types of cartridges, whose variability of Life Cycle Inventory Assessment (LCIA) results doesn't exceed 10%.

Table 1: Main technical characteristics of the product.

ADHESIVE CHARACTERISTICS - 25 °C (77°F)			
Characteristics	Part A (Adhesive)	Part B (Catalyst)	Mix (A+B)
Color / Appearance	Multiple	Clear / Opaque	Multiple
Mixing ratio by volume	10	1	-
Mixing ratio by weight	8'94	1	-
Viscosity, cps	30.000 ± 6.000	2.700 ± 800	-
Density, g/ml	1'20 ± 0'05	1'18 ± 0'05	1'19 ± 0'05

PHYSICAL PROPERTIES - 25 °C (77°F)			
Tensile strength MPa (psi)	> 20 MPa	Butt Joint Tensile MPa (psi)	> 13 MPa
Flexural strength MPa (psi)	> 35 MPa	Hardness shore D scale	> 40 MPa

PRODUCT PROPERTIES - 25 °C (77°F) – Fixing time (time to achieve a resistance of 1.4 MPa at 200 psi in shear)		
Cartridge	Working time (minutes)	Fixing time (minutes)
KRION® adhesive cartridge	12 - 20	>16

The main recommended use for this product is to serve as an adhesive for the joining and sealing of solid surfaces.



Illustration 1. KRION® Porcelanosa Solid Surface Adhesive.

2. Description of the life cycle phases

PRODUCT STAGE		CONSTRUCTION PROCESS STAGE			USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE SYSTEM BOUNDARY
Raw materials supply		Manufacturing	Product Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy use	Operational water use	Decommission and demolition	Transport	Waste processing	Disposal	Reuse, recovery, recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

X: Declared module

MND: Module not declared

2.1. Manufacture (A1, A2 and A3)

Raw materials (A1 and A2)

KRION® Adhesive is an acrylic adhesive composed of two components, the adhesive (mainly composed of Methacrylate Methyl, Polymethyl Methacrylate and Alumina Trihydrate) and a catalyst.

The raw materials used in the production of the KRION Adhesive come from the United States and the packaging components of Europe and Spain. The import raw materials are transported by truck to the port of departure and from there to the port of Valencia by freighter. Finally, they are transported by truck to the production plants in SYSTEMPOOL S.A.

The transport of the packaging materials to the KRION® Adhesive producing factory is made by truck.

Manufacture (A3)

Preparation of the adhesive.

The operator of the adhesive section, according to the units to be manufactured, prepares the amount of translucent base necessary and mixes it with the automatic agitator to ensure that the base is homogeneous. Next, it is pigmented to the percentage indicated by the pigment container. After this, two color tests are done to check that the mixture has been made correctly and the material is ready to be inserted into the cartridges.

Cartridge filling.

Once the adhesive has been validated, the pigmented base and the catalyst are poured into the packaging machine. The empty cartridge is inserted in the matrix destined for this purpose and the machine ejects the exact amount each activation to fill a cartridge of 50 ml (for the cartridge of 250 ml 5 activations will be made). With the cartridge full of base and catalyst, it is introduced into the next machine, which serves to introduce the plugs in the back.

Packaging of the adhesive cartridge.

Once the adhesive is manufactured, it will be labeled and packaged. The corresponding identification label is pasted on the body of the cartridge. Subsequently, it is inserted inside a transparent bag, accompanied by 2 application cannulas, and an instruction sheet in several languages. Finally, the entire package is heat sealed. The cartridges are individually packed and placed in cardboard boxes.

2.2. Construction

Not included within the limits of the study system.

2.3. Use of product

Not included within the limits of the study system.

2.4. End of life

Not included within the limits of the study system.

2.5. Module D: potential environmental benefits and burdens derived from reuse, recovery and recycling activities.

Not included within the limits of the study system.

3. Life cycle assessment

The life cycle assessment on which this declaration is based was carried out in keeping with ISO standards 14040 and 14044 and the document *RCP 100 Productos de construcción en general Versión 2 – 29.02.2016*.

This LCA is “**cradle to gate**”, that is, it covers the Production phase.

Specific data from the SYSTEMPOOL, S.A. plant (Villareal, Castellón, Spain) corresponding to the year 2016 has been used to inventory the manufacturing phase. For the rest of the phases, generic data has been used, taken mostly from the official database of the DAPconstrucción® Program Operator and the ELCD database.

3.1. Declared Unit

The declared unit is “100 ml of KRION® Porcelanosa Solid Surface Adhesive”

3.2. System boundaries

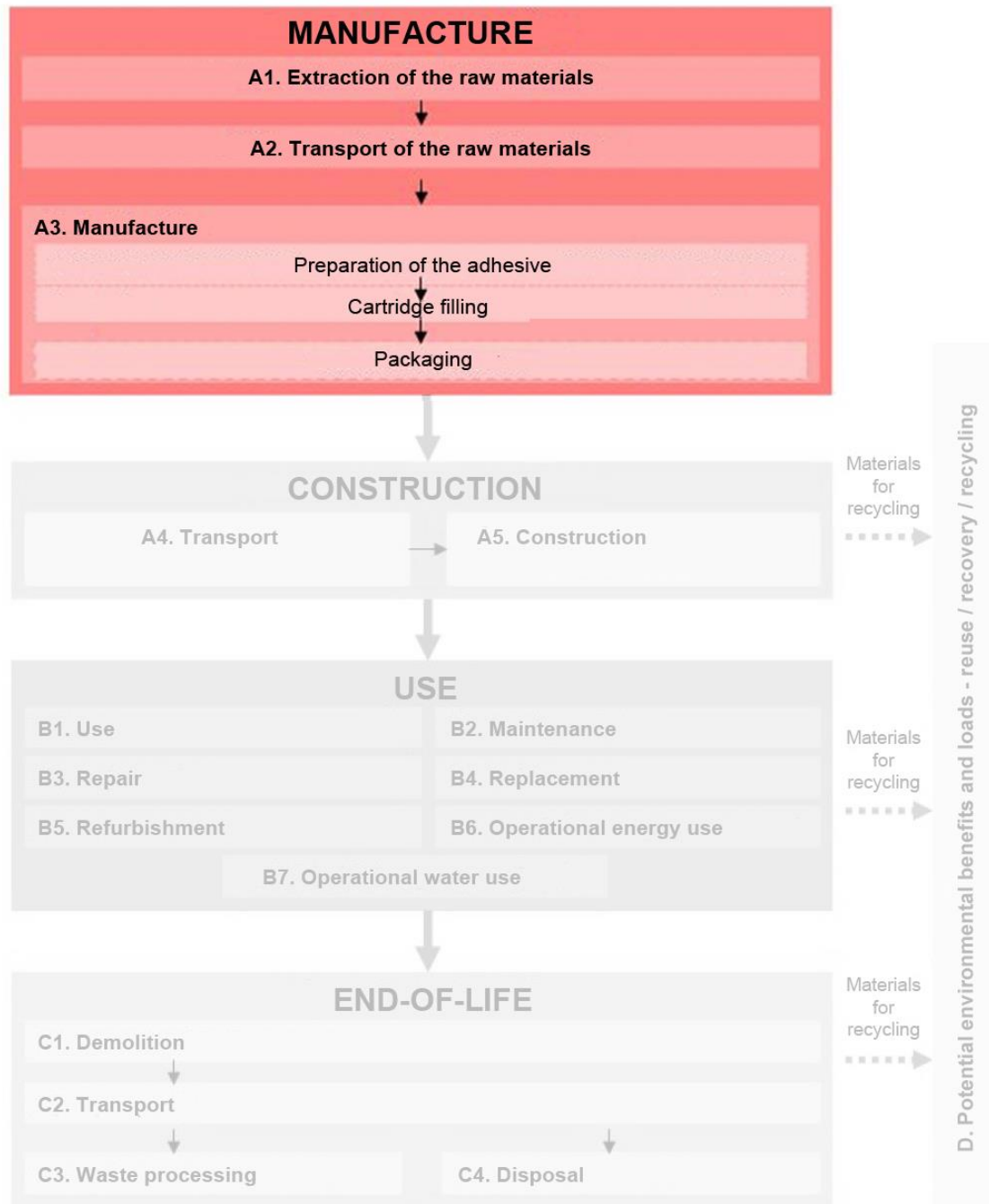


Figura 1. System boundaries

3.3. Indicators of the evaluation of impacts

Table 2. Indicators of environmental impact							
Impact Category	Unit per m ² of panel	Life Cycle Phase					
		Manufacture	Construction		Use		
		A1. - A3.	A4.	A5.	B1. - B7.		
End Of Life	C1. - C4.						
Abiotic Resources Depletion Potential (Elements)	Kg of Sb eq.	1,34E-06	MND	MND	MND	MND	
Abiotic Resources Depletion Potential (Fossil fuels)	MJ, net calorific value	1,61E+01	MND	MND	MND	MND	
Acidification Potential	Kg of SO ₂ eq.	4,52E-03	MND	MND	MND	MND	
Ozone Depletion Potential	Kg of CFC11 eq.	5,66E-08	MND	MND	MND	MND	
Global Warming Potential	kg of CO ₂ eq.	8,80E-01	MND	MND	MND	MND	
Eutrophication Potential	Kg of PO ₄ ⁻³ eq.	7,14E-04	MND	MND	MND	MND	
Photochemical Ozone Formation Potential	kg of C2H4 eq.	2,39E-04	MND	MND	MND	MND	
A1. Supply of raw materials A2. Transport A3. Manufacture according to figure 1) A4. Transport A5. Precesses of installation and construction		C1. Deconstruction and demolition C2. Transport C3. Waste management for reuse, recovery and recycling C4. Disposal		B1. Use B2. Maintenance B3. Repair B4. Replacement B5. Refurbishment B6. Operational energy use B7. Operational water use		MND. Non Declared Module	

3.4. Life cycle inventory data (LCI)

Table 3. Parameters of resources use						
Parameter	Unit per m ² of panel	Life Cycle Phase				
		Manufacture A1. - A3.	Construction		Use B1. - B7.	End of Life C1. - C4.
			A4.	A5.		
Use of renewable primary energy resources, PERT material, PERE	MJ	8,51E-01	MND	MND	MND	MND
Total use of non-renewable primary energy resources, PENRT	MJ	1,76E+01	MND	MND	MND	MND
Use of renewable secondary fuels, RSF	MJ	0,00	MND	MND	MND	MND
Use of non-renewable secondary fuels, NRSF	MJ	0,00	MND	MND	MND	MND
Net use of fresh water, FW	m ³	1,46E-03	MND	MND	MND	MND
Waste production						
Hazardous waste disposed, HWD	kg	3,91E-03	MND	MND	MND	MND
Non-hazardous waste disposed, NHWD	kg	3,55E-02	MND	MND	MND	MND
Radioactive waste disposed, RWD	kg	2,29E-05	MND	MND	MND	MND
Output material for						
Components for reuse, CRU	kg	0,00	MND	MND	MND	MND
Materials for recycling, MFR	kg	1,78E-02	MND	MND	MND	MND
Materials for energy recovery, MER	kg	3,10E-04	MND	MND	MND	MND

A1. Supply of raw materials
 A2. Transport
 A3 Manufacture according to figure 1)
 A4. Transport
 A5. Precesses of installation and construction
 B1. Use
 B2. Maintenance
 B3. Repair
 B4. Replacement
 B5. Refurbishment
 B6. Operational energy use
 B7. Operational wáter use
 C1. Deconstruction and demolition
 C2. Transport
 C3. Waste management for reuse, recovery and recycling
 C4. Disposal
 MND. Non Declared Module

3.5. Potential environmental benefits and impacts derived from activities of reuse, recovery and recycling

Not included within the limits of the study system.

3.6. Recommendations of this DAP

Construction products should be compared by applying the same functional unit and level of building, i.e. including the product's behaviour throughout its life cycle.

Environmental product declarations of different systems of type III eco-labelling are not directly comparable, as the rules of calculation may be different.

This declaration represents the average behaviour of the product KRION® Porcelanosa Solid Surface Adhesives manufactured by SYSTEMPOOL S.A.

3.7. Cut-off rules

Over 95% of all the inputs and outputs of mass and energy of the system have been included, excluding, among others, diffuse emissions in the factory.

3.8. Additional environmental information

The KRION® Porcelanosa Solid Surface Adhesive does not release any hazardous substances to the indoor air, soil and water during its application or during its use phase, certifying Greenguard Gold its low emission of VOCs. It does not possess any of the prohibited substances from the list of candidates and therefore complies with the requirements of REACH. It is also suitable for use with food contact certified by NSF.

3.9. Other data

Waste from this product is included as "non-hazardous waste" in the European List of Waste under LOW code 08 04 10.

4. Technical information and scenarios

A) Transport

Not included within the limits of the study system.

B) Processes of installation

Not included within the limits of the study system.

C) Operational use of energy and water

Not included within the limits of the study system.

E) Maintenance and repair

Not included within the limits of the study system.

F) End of life


Not included within the limits of the study system.

5. Información adicional

Technical characteristics of the product	<ul style="list-style-type: none">- Greenguard Gold Certificate 59708-420- NSF/ANSI 5 Food Equipment Materials Certificate- Reach Compliance HKHL 1501002788JL certificate- Certificates of the company: ISO 9001 (ES15 / 17872) and ISO 14001 (ES15 / 17871)
Transport and construction	Not included within the limits of the study system.
Use and maintenance	Not included within the limits of the study system.
End of life	Not included within the limits of the study system.

6. PCR and verification

This declaration is based on the document RCP 100 Productos de construcción en general - Versión 2 – 29.02.2016.

RCP 100 Productos de construcción en general - Versión 2 was revised by the Advisory Board of the Program Operator DAPconstrucción®.	
Independent verification of the declaration and data, in accordance with standards ISO 14025 and UNE EN 15804 + A1	
<input type="checkbox"/> Internal <input checked="" type="checkbox"/> external	
Third-party verifier: - Ferran Pérez Ibáñez	 Oficina d'Accreditació d'Entitats Col·laboradores Verificació VEDAP-001-10
	
Date of verification : 2017, 17 th December	

References

- INFORME DE ANÁLISIS DE CICLO DE VIDA DE KRION® Porcelanosa Solid Surface Adhesive DE SYSTEMPOOL. ReMa-INGENIERÍA, S.L. 2017 (not published)

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