

# Environmental Product Declaration



In accordance with EN 15804:2012+A2:2019/AC:2021, ISO 14025  
and ISO 21930:2017 for:

## CERESIT CT81/ZS (PL)

From

Programme:

The International EPD® System, [www.environdec.com](http://www.environdec.com)

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*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR)</b>
CEN standard EN 15804 and ISO 21930 serve as the Core Product Category Rules (PCR).
Product Category Rules (PCR): <i>PCR 2019:14 Construction products, version 1.3.2 Published on 2023.12.08 valid until: 2024.12.20.</i>
PCR review was conducted by: <i>Technical Committee of the International EPD System. Chair: Claudia A. Peña. Contact via <a href="mailto:info@environdec.com">info@environdec.com</a>.</i>
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: <i>Anthesis Group</i>
<b>Third-party verification</b>
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:  <input checked="" type="checkbox"/> EPD verification by accredited certification body  Third-party verification: <i>Cristina Gazulla Santos, TECNALIA R&amp;I Certification is an approved certification body accountable for the third-party verification. The certification body is accredited by: ENAC (accreditation no. 125/C-PR283).</i>
Procedure for follow-up of data during EPD validity involves third party verifier:  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. The currently EPD complies also with the ISO (2017): ISO 21930:2017, Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

## Company information

### Owner of the EPD:

Henkel AG & Co. KGaA  
Henkelstraße 67  
40589 Düsseldorf  
Deutschland

### Contact:

Sébastien Glorie  
sebastien.glorie@henkel.com

### Description of the organisation:

Henkel AG & Co. KGaA, commonly known as Henkel, is a German multinational chemical and consumer goods company headquartered in Düsseldorf, Germany.

Henkel Adhesive Technologies Construction is a division of Henkel which offers, among others, a wide choice of ETICS (External Thermal Insulation Composite System) tailored to varied needs. This EPD is focused on the key components of ETICS. These components are mainly sold under the brand CERESIT.

For more information, please visit: [www.ceresit.com](http://www.ceresit.com)

Product-related or management system-related certifications: The plant, located in Poland, holds certificates for ISO 9001, 14001 and 45001.

### Name and location of production site(s):

Henkel Polska Operations Sp. z o.o.  
Stara Góra, skrytka pocztowa 24  
26-220 Stąporków  
Polska

## Product information

Product name: CT81/ZS.

Product description: CERESIT® CT 81/ZS adhesive mortar is used for gluing EPS and XPS polystyrene boards in complex external wall insulation systems (ETICS) of buildings using the CERESIT Ceretherm light-wet method. It is suitable for both newly erected and thermo-renovated buildings.

CERESIT ETICS is a trade name for ETICS, which comprises insulation board (bonded and mechanically fixed) with reinforced undercoat, and decorative finishes. This product is used in such systems as described in European Technical Approval ETA-13/0086 or ETA-08/0309. The system is complete and equipped with a vast selection of adhesives, base coats, renders and decorative coats of various colours. The system provides variety of solutions depending on requirements of the investors, building designers and construction workers. CERESIT ETICS also offers a wide range of solutions for all building types, from detached houses to multi-story developments (< 25 m high). It is fully certified, and the exact specification is tailored to meet the requirements of each project, whether residential or commercial, in compliance with all current building regulations in Poland and Europe. Dry mortars are a

combination of mixed raw materials such as sand and cement in dry form, usually they also include different additives and polymers.

CERESIT ETICS significantly lower down energy consumption of the building and its costs, ensure comfortable and balanced temperature inside your house and raise its market value with energy passport.

Moreover, with a diverse offer of final coatings, our systems not only protect facades, but also make them look appealing and trendy. They were designed to help you express your specific preferences and style. Take a look at our coloristic pallets of Colours of Nature, Intense or natural effect plasters line of Visage with different structures, which are perfectly compatible with all our systems.

UN CPC code: 3751 - Non-refractory mortars and concretes

Geographical scope: Global. The products are manufactured in Europe, but they could be sold global.

## **LCA information**

Functional unit / declared unit: one kilogram (1 kg) of packed dry mortar.

Time representativeness: All specific data related to the production plants and used for the study date from 2021.

Database(s) and LCA software used: The primary inventory data has been directly obtained from Henkel and corresponds to the products mentioned above. The product analysed in this study is manufactured in Henkel's plant located in Staporkow (Poland).

The secondary data has been extracted from the generic Ecoinvent version 3.10 database, included in the SimaPro v9.5.0.1. software which is internationally recognised. Wherever possible, inventory data related to specific countries or on its absence, from Europe in general has been selected. This has been used for the stage of production and transport of raw materials, as well as for electricity generation or waste management processes, over which the manufacturer has no direct influence.

Description of system boundaries: cradle-to-gate with modules C1-C4, module D and optional modules A4 and A5, covering the modules of extraction and processing of raw materials (A1), their transportation to the production plant (A2), the manufacturing process (A3), transport to construction site (A4), installation (A5), end of life (C1-C4) and potential benefits and loads from the reuse and recycling of the products at its end of life (D).

Product stage (A1-A3):

- Raw material supply (A1): this module considers the extraction and processing of raw materials used for the manufacture of the products. Moreover, raw materials' packaging enabling transportation to the production plant is included. Likewise, the production of the energy necessary for the manufacturing process (electricity, natural gas and other fuels) is also taken into account.
- Transport of the raw materials (A2): this module consists of the transportation of all raw materials covered by module A1, from the extraction, production, and treatment site to the factory, considering the specific distances of each material supplier.

- Manufacturing of products (A3): this module refers to the production process of the façade solutions products in the production plants. It includes the burning of fuels (natural gas and diesel) and the water consumed during the manufacturing process. It also considers the waste generated from the production process: the treatment and transport from the production plant to the waste manager. Finally, it takes into account the packaging used for distribution: the production of the primary and secondary packaging of the product (cans, buckets, bags, plastic films and wooden pallets), and the transport of this packaging from suppliers to the factory.

Installation stage (A4-A5):

- Transport from factory to construction site (A4): this module considers the distribution of the product and its packaging to the construction site. The following table gathers the additional technical information on module A4 according to EN 15804.

Scenario information	Unit (by declared unit)
Type and amount of fuel of the vehicle used for the transport	Lorry >32-ton EURO V
Distance	250 km
Capacity use (including empty return)	Capacity use of 32%, including empty return
Useful capacity ratio	No applicable

- Installation (A5): this module considers the preparation of the product in order to be installed. It applies to the dry products, since they need to be hydrated and stirred in order to be used, therefore electricity and water consumptions are included.

- Additional raw materials and processes for installation.

Representative product	Time of mixing before application	Necessary tool for installation	Product loss
Adhesive/rendering mortars - CT81/ZS	3 min mix + 5 min break + 1 min mix	Hand driller	1%

- Additional technical information on module A5 according to EN 15804.

Scenario information	Unit (by declared unit)
Auxiliary materials for installation	Dry mortars: water
Water use	Dry mortars: 0.22 l of water
Use of other resources	No applicable
Energy consumption during the installation	Dry mortars: 0.04 kWh
Wastes and output flows as result of the waste treatment at the demolition point	Dry mortars: 3.28E-03 kg paper bag, 2,08E-02 kg wood, 3.12E-03 kg cardboard and 4.75E-04 kg film

Scenario information	Unit (by declared unit)
Direct emissions to air, soil and water	No applicable

End of life stage (C):

- Deconstruction or demolition (C1): this stage considers the dismantling of the products after its use by a hydraulic digger.
- Transport to the waste processing site (C2): this module considers a default distance of 50 km between the building where the product was installed and the waste manager facility.
- Waste processing (C3): this module includes the reconditioning of the products waste for its reuse or recycling. However, in this study it is assumed that the products cannot be reused nor recycled after its end of useful life. Thus, there are not environmental impacts allocated to this module. On the other hand, following the "polluter pays" principle, if there were impacts due to the reuse/recycling of this product, they would not be attributed to its life cycle.
- Disposal (C4): this module includes the final discharge of waste that has not been destined for recovery or treatment processes. It has been assumed that the 60% of the product are finally disposed in the landfill after its end of useful life.

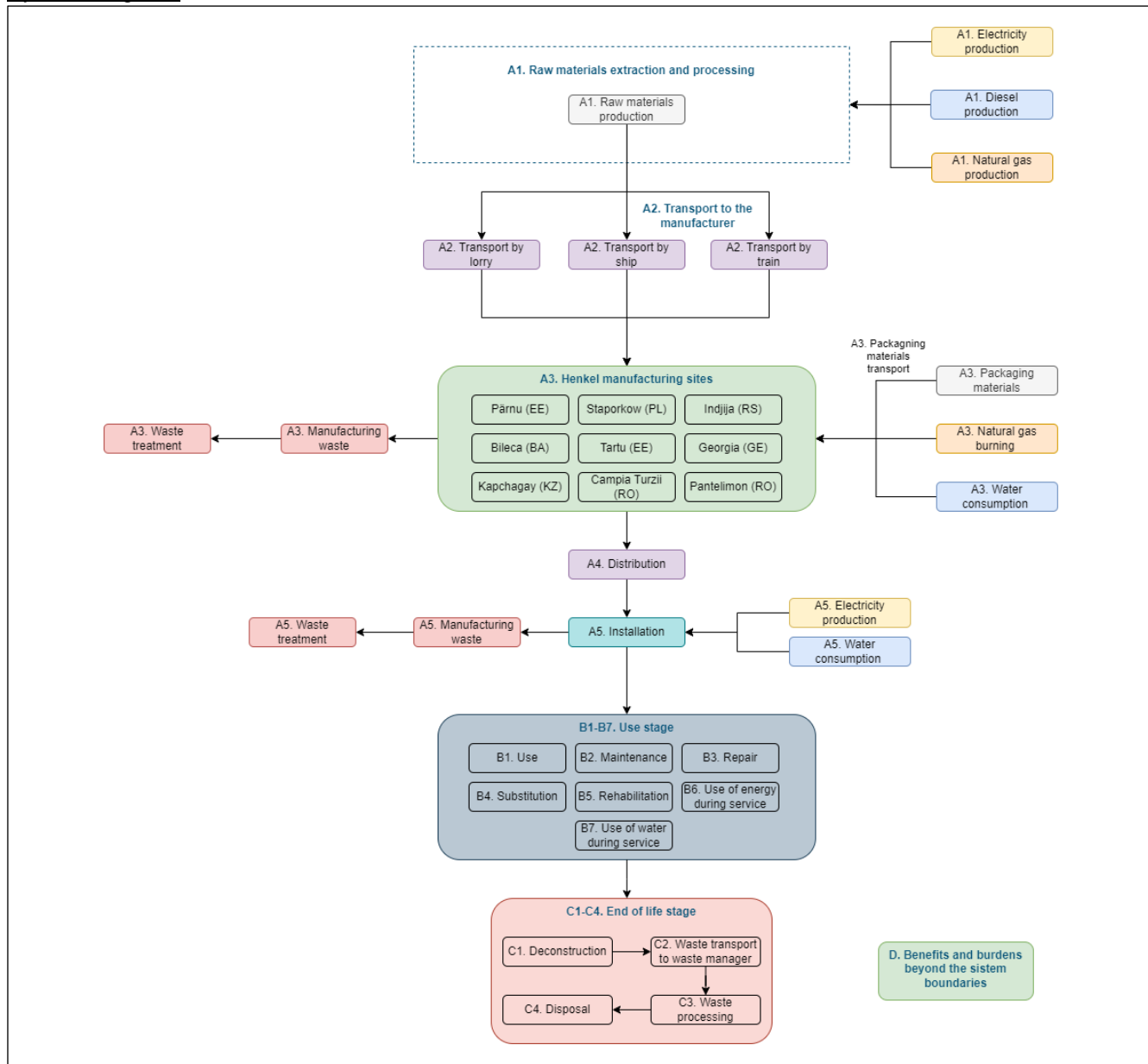
Benefits and loads beyond the system boundary (D): This module analyses the benefits and burdens related to the processes of recovery, reuse or recycling of waste from the products under study at their end of life, which could form part of the life cycle of a new product.

The scenarios for modules C1-C4 and D are realistic and representative of one of the most probable alternatives. The scenarios do not include processes or procedures that are not in current use or whose feasibility have not been demonstrated.

The module collects the most likely scenarios based on the best knowledge currently available. Considerations about the endo of life of the representative average product:

Parameter	Units per declared Unit (kg)	Value
Waste collection process, specified by type	kg collected separately	0.00
	kg collected mixed with demolition waste	1.00
Recovery process waste, specified by type	kg for reuse	0.00
	kg for recycling	0.40
	kg for energy recovery	0.00
Waste disposal	kg to landfill	0.60
Considerations for scenarios development	Distance to waste manager (km)	50.0

System diagram:



More information:

Company website for more information: <https://www.henkel.de/>

Name and contact information of LCA practitioner:

Lavola – Anthesis Group  
 Rambla de Catalunya, 6, planta 2, 08007 Barcelona  
 +34 938 515 055  
 www.anthesisgroup.com

Cut-off rules: In accordance with the provisions of the PCR 2019:14 Construction products, version 1.3.2 Published on 2023.12.08 valid until: 2024.12.20, UNE-EN 15804:2012+A2:2020, 100% of total inflows (raw materials and energy) and outflows per module have been considered. The packaging for the distribution of the products has also been included.

The "polluter pays" principle has been applied.

The following processes have not been included in the scope of the study:

- Manufacture of equipment used in production, buildings or any other assets.
- Business trips.
- Maintenance activities at the production plants and research and development sites.
- Transportation of personnel to and within the plants.
- Diffuse particle emissions during the transport and storage of raw materials.

The hypotheses made during the study are detailed below:

- All the primary data used in this study correspond to 2021 and has been provided by Henkel.
- The electricity mix has been adapted to the specific mix consumed in the different manufacturing sites. A 100% renewable electricity mix has been adapted from the national electricity mix. The plant has Guarantees of Origin to certify that the electricity they bought during the period in which the study was performed comes from 100% renewable sources.

Source	Tartu Warehouse	Staporkow	Pärnu	Pantelimon	Campia Turzii	Kapchagay	Indija	Georgia	Bileca
Hydro	0.2%	0.0%	0.2%	70.0%	70.0%	0.0%	25.5%	75.9%	32.5%
Coal	0.2%	0.0%	0.2%	0.0%	0.0%	76.3%	57.4%	0.0%	50.9%
Oil	32.9%	0.0%	32.9%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
Wind	6.1%	0.0%	6.1%	29.0%	29.0%	0.0%	2.2%	0.7%	1.3%
Gas	7.6%	0.0%	7.6%	0.0%	0.0%	21.5%	1.0%	23.3%	0.0%
Biomass	9.3%	100%	9.3%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%
Biogas	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Imported	43.5%	0.0%	43.5%	0.0%	0.0%	2.2%	13.7%	0.0%	15.0%
<b>GWP-GHG (kg CO2 eq./kWh)</b>	<b>0.204</b>	<b>0.018</b>	<b>0.204</b>	<b>0.008</b>	<b>0.008</b>	<b>0.303</b>	<b>0.268</b>	<b>0.044</b>	<b>0.187</b>

- Regarding the transport of raw materials (module A2), specific distances have been introduced by supplier and material.
- The End-of-Life scenario for the manufacturing wastes has been obtained from Eurostat data for each country where the production sites are located, when available. If not, the European average has been considered.
- For the transport of waste from Staporkow, specific distances have been introduced for each waste management facility, which has been provided by Henkel.
- For the distribution to the construction site, Henkel has indicated that the manufacturing sites supply to a radius of 250km.
- For the preparation of dry mortars and dry plasters, Henkel has provided primary data.



- The power of the driller used for mixing the product with water during installation is assumed to be 600W.
- The End-of-Life scenario for the products has been provided by Henkel, where it is assumed that 60% goes to landfill whilst 40% goes to recycling operations. This scenario is more conservative than the one provided by Eurostat for Construction and Demolition waste which has a higher recycling and landfilling operations rate (usually including more valuable materials than mortars such as metals).

Data quality requirements: "Good" data quality has been obtained (3.4 out of 5). The method used to assess the representativeness of the data is found in "Table E.1 — Data quality level and criteria of the UN Environment Global Guidance on LCA database development" in the Annex E of the EN 15804+A2 standard.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	MND							X	X	X	X	X
Geography	EU	EU	PL	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Specific data used	44%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%					-	-	-	-	-	-	-	-	-	-	-	-

## Content information

Product components	Weight, %	Post-consumer material, weight-%	Renewable material, weight-%	Biogenic material, weight-% of product	Biogenic material, kg C/ declared unit
Inorganic Binders	20-30%	0	0	0	0
Filler	65-75%	0	0	0	0
Others	<5%	0	0	0.4	0.002
<b>TOTAL</b>	<b>1.000</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	<b>0.002</b>
Packaging materials	Weight, kg	Weight-% (versus the product)		Biogenic material, weight-% of product	Biogenic material, kg C/ declared unit
Paper and cardboard	6.40E-03	0.61		0.61	0.003
Wood	2.08E-02	2.04		2.04	0.011
Plastic	4.75E-04	0.06		0	0
<b>TOTAL</b>	<b>2.77E-02</b>	<b>2.70</b>		<b>2.70</b>	<b>0.014</b>

None of the components present in the final product are included in the "Candidate List of Substances of Extreme Concern in the authorization procedure" of the REACH regulation.

The conversion factor to convert from kg carbon to kg CO<sub>2</sub> = 44 kg CO<sub>2</sub>/12 kg C

## Results of the environmental performance indicators

The environmental information related to the analysed products has been calculated with the SimaPro software version 9.5.0.1. As required by PCR 2019:14<sup>1</sup>, the characterization factors indicated in Annex C of the EN 15804:2012+A2 standard have been used to estimate the potential environmental impacts (method EN 15804 + A2 Method V1.02 / EF 3.1 normalization and weighting set)<sup>2</sup>. With respect to the results corresponding to the rest of the parameters under study, the following methodologies have been used: EDIP to calculate waste production, CED (Cumulative Energy Demand) to calculate energy use and inventory data for output flows. For the additional ISO 21930 indicators, TRACI (Tool for Reduction and Assessment of Chemicals and Other Environmental Impacts) and EDIP (for waste indicators) have been used.

The environmental results corresponding to the representative product of the dry mortars family manufactured by Henkel and commercialized under the brand Ceresit are shown below. These are divided by modules, covering the stages defined above in the system boundary section (A1-A3+A4-A5+B1-B7+C1-C4+D), and considering all the impact categories required by the PCR 2019:14 Construction products, version 1.3.

Estimated impact results are only relative statements that do not indicate impact category endpoints, exceedances of assessed thresholds, safety margins, or risks.

Results obtained in both the product stage (modules A1-A3) and installation stage (modules A4-A5) should not be used without considering those results obtained in modules C1-C4.

All infrastructure and capital goods are excluded for all the upstream, core and downstream processes.

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<sup>1</sup> PCR 2019:14 Construction products, version 1.3.2 Published on 2023.12.08 valid until: 2024.12.20.

<sup>2</sup> In order to calculate the environmental profile of Henkel's products, the environmental impact categories and resource and waste use indicators have been considered, as well as the calculation methods indicated in the UNE-EN 15804/A2 standard. Output flows and calculation methods.. The methodology used to determine the environmental impacts is "Environmental Footprint 3.1 (adapted) V1.00 / EF 3.1 normalization and weighting set" developed by the European Commission, which includes the "IPCC 2021 GWP 100a" method for calculating the carbon footprint. To calculate the use of resources, the Cumulative Energy Demand v2.0 method has been used, as well as inventory data. Finally, to determine the generation of waste, the EDIP 2003 method has been used.

## Mandatory impact category indicators according to EN 15804

Results per declared unit										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	2.53E-01	2.13E-02	1.39E-02	MND	2.30E-02	7.98E-03	7.57E-03	1.68E-03	8.94E-04
GWP-biogenic	kg CO <sub>2</sub> eq.	-5.60E-02	9.50E-07	5.85E-02	MND	1.19E-06	3.61E-07	2.57E-03	3.85E-03	1.00E+00
GWP-luluc	kg CO <sub>2</sub> eq.	1.54E-04	5.01E-07	3.89E-05	MND	7.76E-07	1.91E-07	1.68E-06	6.70E-08	-6.98E-08
GWP-Total	kg CO <sub>2</sub> eq.	2.54E-01	2.13E-02	2.24E-02	MND	2.30E-02	7.98E-03	7.58E-03	1.68E-03	8.91E-04
ODP	kg CFC 11 eq.	1.98E-09	4.16E-10	2.03E-10	MND	3.53E-10	1.58E-10	1.51E-10	2.41E-11	1.35E-11
AP	mol H <sup>+</sup> eq.	6.68E-04	4.97E-05	6.70E-05	MND	2.10E-04	1.93E-05	3.56E-05	1.48E-05	9.27E-06
EP-freshwater	kg P eq.	4.20E-06	1.71E-08	1.21E-06	MND	2.12E-08	6.51E-09	6.95E-08	5.86E-09	-2.98E-09
EP-marine	kg N eq.	1.81E-04	1.89E-05	1.41E-05	MND	9.86E-05	7.41E-06	1.33E-05	6.73E-06	4.47E-06
EP-terrestrial	mol N eq.	2.06E-03	2.07E-04	1.17E-04	MND	1.08E-03	8.11E-05	1.45E-04	7.37E-05	4.89E-05
POCP	kg NMVOC eq.	6.58E-04	8.71E-05	3.99E-05	MND	3.21E-04	3.37E-05	5.11E-05	2.23E-05	1.43E-05
ADP-minerals and metals*	kg Sb eq.	1.27E-07	6.74E-10	1.02E-09	MND	9.38E-10	2.56E-10	4.33E-10	6.44E-11	-2.21E-10
ADP-fossil*	MJ	5.19E-01	2.70E-03	2.16E-01	MND	3.17E-03	1.03E-03	9.41E-03	9.43E-04	-4.26E-03
WDP*	m <sup>3</sup>	5.00E-02	1.16E-04	1.19E-02	MND	2.36E-04	4.40E-05	-8.96E-03	1.92E-05	-1.94E-04
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.

## Additional mandatory and voluntary impact category indicators

Results per declared unit										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP - GHG <sup>3</sup>	kg CO <sub>2</sub> eq.	2.51E-01	2.07E-02	2.01E-02	MND	2.25E-02	7.78E-03	7.39E-03	1.63E-03	8.73E-04
PM	disease inc.	8.22E-09	1.68E-09	2.01E-10	MND	6.02E-09	5.10E-10	3.92E-09	4.17E-10	3.08E-09
IRP <sup>2</sup>	kBq U-235 eq	2.78E-03	3.67E-05	2.68E-03	MND	2.64E-05	1.40E-05	1.15E-04	2.21E-06	-9.64E-05
ETP-fw <sup>1</sup>	CTUe	4.60E-01	2.81E-02	2.72E-01	MND	1.66E-02	9.04E-03	1.43E-01	1.35E-03	-8.57E-04
HTP-c <sup>1</sup>	CTUh	7.51E-11	1.58E-12	8.04E-12	MND	1.57E-12	5.84E-13	1.48E-12	3.55E-13	-4.29E-12
HTP-nc <sup>1</sup>	CTUh	1.92E-09	2.04E-10	1.08E-09	MND	1.02E-10	6.43E-11	7.51E-11	1.53E-11	1.45E-12
SQP <sup>1</sup>	Pt	4.98E+00	6.03E-04	4.82E-02	MND	6.26E-04	2.29E-04	3.96E-02	2.47E-02	-2.46E-02

PM = Particulate matter; IRP = Ionizing radiation, human health; ETP-fw = Ecotoxicity freshwater - organic; HTP-c = Human health, carcinogenic effects; HTP-nc = Human health, non-carcinogenic effects; SQP = Land use; NR = Non relevant

<sup>1</sup>The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

<sup>2</sup>This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator

<sup>3</sup>The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013

## Resource use indicators

Results per declared unit										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
PERE	MJ	-3.13E-01	9.53E-04	8.26E-02	MND	6.62E-04	3.63E-04	3.55E-03	9.92E-05	-1.01E+00
PERM	MJ	5.60E-01	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00
PERT	MJ	2.47E-01	9.53E-04	8.26E-02	MND	6.62E-04	3.63E-04	3.55E-03	9.92E-05	-5.85E-03
PENRE	MJ	5.14E-01	2.78E-03	2.22E-01	MND	3.31E-03	1.06E-03	9.69E-03	9.90E-04	-1.00E+00
PENRM	MJ	2.76E-02	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00
PENRT	MJ	5.41E-01	2.78E-03	2.22E-01	MND	3.31E-03	1.06E-03	9.69E-03	9.90E-04	-4.27E-03
SM	kg	0.00E+00	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m <sup>3</sup>	1.38E-03	6.91E-06	4.52E-04	MND	9.26E-06	2.63E-06	-1.85E-04	7.24E-07	-1.33E-04
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water									

## Waste indicators

Results per declared unit										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	9.29E-06	1.79E-06	4.43E-07	MND	2.03E-06	6.79E-07	6.79E-07	1.39E-07	8,15E-08
Non-hazardous waste disposed	kg	1.22E-01	8.21E-06	6.84E-03	MND	8.63E-06	3.12E-06	6.97E-02	5.99E-01	-2,08E-06
Radioactive waste disposed	kg	2.20E-06	2.53E-08	2.17E-06	MND	1.51E-08	9.63E-09	9.07E-08	1.28E-09	-5,74E-08

## Output flow indicators

Results per declared unit										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	1.24E-03	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.40E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	MND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00



## Additional ISO 21930 mandatory impact categories and indicators

Results per declared unit										
Indicator	Unit	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
High-Level radioactive waste	kg	3.93E-07	5.96E-09	1.02E-07	MND	5.01E-07	5.71E-09	4.90E-07	4.54E-09	2.17E-09
Intermediate/low-level radioactive waste	kg	1.33E-06	2.04E-08	3.43E-07	MND	1.70E-06	1.96E-08	1.68E-06	1.06E-08	7.45E-09
Global warming potential (GWP 100)	kg CO2 eq	2.08E-01	2.13E-02	1.92E-02	MND	2.48E-01	2.04E-02	1.87E-02	2.22E-02	7.65E-03
Ozone depletion potential (ODP)	kg CFC-11 eq	1.23E-09	4.57E-10	3.92E-10	MND	2.08E-09	4.39E-10	2.19E-10	3.73E-10	1.67E-10
Eutrophication potential (EP)	kg N eq	4.30E-05	3.16E-06	1.98E-05	MND	6.60E-05	3.03E-06	1.57E-05	1.22E-05	1.18E-06
Acidification potential (AP)	kg SO2 eq	4.81E-04	4.64E-05	5.08E-05	MND	5.78E-04	4.45E-05	5.57E-05	1.94E-04	1.73E-05
Photochemical oxidant creation potential (POCP)	kg O3 eq	9.07E-03	1.25E-03	1.02E-03	MND	1.13E-02	1.20E-03	6.51E-04	6.28E-03	4.71E-04

## Information on biogenic carbon content

Results per declared unit		
BIOGENIC CARBON CONTENT	Unit	QUANTITY
Biogenic carbon content in product	kg C	0.002
Biogenic carbon content in packaging	kg C	0.014

*Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.*

## Differences versus previous versions

This document corresponds to the first version of the EPD of the CT81/ZS manufactured by Henkel (Ceresit).

## References

- General Programme Instructions of the International EPD® System. Version 4.0.
- The Product Category Rules (PCR) “PCR 2019:14 Construction products, version 1.3.2 Published on 2023.12.08 valid until: 2024.12.20” based on the European standard UNE-EN 15804:2012+A2:2020.
- UNE-EN ISO 14040:2006 – Environmental management – Life Cycle Assessment – Principles and framework.
- UNE-EN ISO 14044:2006 – Environmental management – Life Cycle Assessment – Requirements.
- UNE-EN ISO 14025:2006- Labels and environmental declarations.
- ISO/TR 14047: 2003 – Environmental management – Life Cycle Assessment – LCI application examples.
- ISO/TS 14048: 2003 – Environmental management – Life Cycle Assessment – Data inventory.
- ISO/TR 14049: 2000 – Environmental management – Life Cycle Assessment – Examples of application of objectives and scope and inventory analysis.
- UNE-EN 15804:2012+A2: Sustainability in construction. Product environmental statements. Commodity category rules for construction products.
- UNE-EN 16783 Thermal insulation products. Product Category Rules (RCP) for products manufactured and formed in situ, intended for the preparation of environmental product declarations.
- ISO (2017): ISO 21930:2017, Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services

## VERIFICATION STATEMENT CERTIFICATE CERTIFICADO DE DECLARACIÓN DE VERIFICACIÓN

*Certificate No. / Certificado nº: EPD09702*

TECNALIA R&I CERTIFICACION S.L., confirms that independent third-party verification has been conducted of the Environmental Product Declaration (EPD) on behalf of:

*TECNALIA R&I CERTIFICACION S.L., confirma que se ha realizado verificación de tercera parte independiente de la Declaración Ambiental de Producto (DAP) en nombre de:*

**HENKEL AG & CO. KGAA**  
**Henkelstraße 67**  
**40589 Düsseldorf**  
**Deutschland**

for the following product:  
*para el siguiente producto:*

**Dry mortar CERESIT® CT 81/ZS (PL)**  
**Mortero en polvo CERESIT® CT 81/ZS (PL)**

with registration number **EPD-IES-0012741** in the International EPD® System ([www.environdec.com](http://www.environdec.com)).  
*con número de registro **EPD-IES-0012741** en el Sistema Internacional EPD® ([www.environdec.com](http://www.environdec.com)).*

it's in conformity with:  
*es conforme con:*

- **ISO 14025:2010 Environmental labels and declarations. Type III environmental declarations.**
- **General Programme Instructions for the International EPD® System v.4.0.**
- **PCR 2019:14 Construction products (EN 15804+A2) v.1.3.2.**
- **UN CPC 3751 Non-refractory mortars and concretes.**



Carlos Nazabal Alsua  
Manager

Issued date / *Fecha de entrada en vigor:* 03/07/2024  
Update date / *Fecha de actualización:* 03/07/2024  
Valid until / *Válido hasta:* 02/07/2029  
Serial N° / *N° Serie:* EPD0970200-E

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