

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Microdol 5



Owner of the declaration:

Omya Hustadmarmor AS

Product:

Microdol 5

Declared unit:

1 tonne

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR

NPCR Part A: Construction products and services. Ver. 2.0 March 2021

Program operator:

The Norwegian EPD Foundation

Declaration number:

NEPD-7287-6687-EN

Registration number:

NEPD-7287-6687-EN

Issue date: 21.08.2024

Valid to: 21.08.2029

EPD software:

LCAno EPD generator ID: 470848

The Norwegian EPD Foundation



General information

Product

Microdol 5

Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-norge.no

Declaration number:

NEPD-7287-6687-EN

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR Part A: Construction products and services. Ver. 2.0 March
2021

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Declared unit:

1 tonne Microdol 5

Declared unit (cradle to gate) with option:

A1-A3,A4

Functional unit:

Not applicable.

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

VERIFIER NAME

(no signature required)

Owner of the declaration:

Omya Hustadmarmor AS
Contact person: Lovise Stakvik
Phone: +47 41322610
e-mail: lovise.stakvik@omya.com

Manufacturer:

Omya Hustadmarmor AS
Sjøvegen 69
6440 Elnesvågen, Norway

Place of production:

Omya Hustadmarmor AS, production site Knarrevik
Langebakken 31
5355 Knarrevik, Norway

Management system:

9001, 14001, 45001, and 50001

Organisation no:

912864227

Issue date:

21.08.2024

Valid to:

21.08.2029

Year of study:

2023

Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Pedro Ferreira

Reviewer of company-specific input data and EPD: Børge Heggen
Johansen, Energiråd AS

Approved:

Håkon Hauan
Managing Director of EPD-Norway



Product

Product description:

Fine, white dolomite powder, high purity and low binder absorption. The product is delivered in bulk, and therefore has no packaging.

Applications:

Paints, emulsion paints, heavy-duty coatings, road-marking paints plastics, plasticized PVC, polyester moldings, polymer concrete, adhesives, sealants, fiberglass, lake and river liming, among others.

Product specification

Composition: Calcium magnesium carbonate (CaMg(CO₃)₂) - 99%, HCl (insoluble content) - 1%

Materials	Value	Unit
Stone	1000	kg

Technical data:

For technical information, contact at <https://www.omya.com/en>

Market:

Norway and Europe.

Reference service life, product

Not applicable.

Reference service life, building

Not applicable.

LCA: Calculation rules

Declared unit:

1 tonne Microdol 5

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

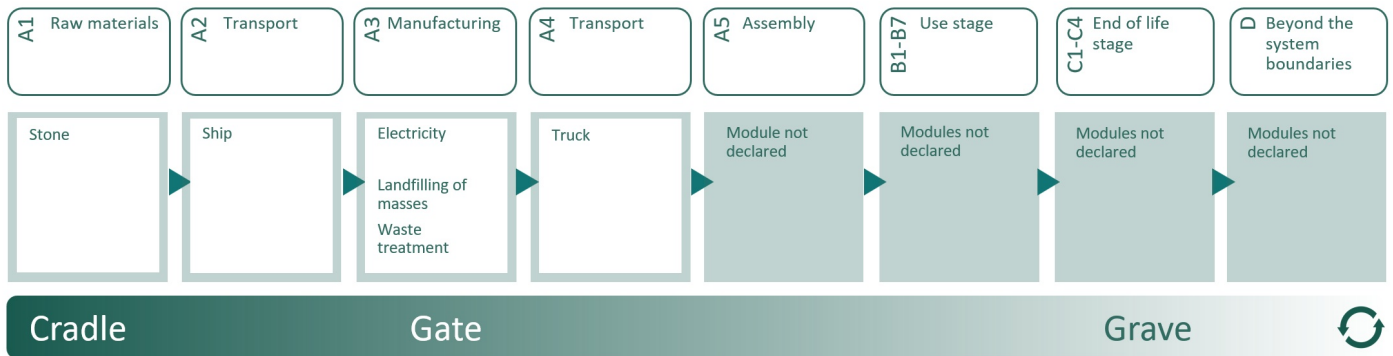
Materials	Source	Data quality	Year
Natural stone	Supplier specific	Supplier specific	2023

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage				Construction installation stage	Use stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

System boundary:

The system includes the extraction of stone at Omya Hustadmarmor AS: Hammerfall (module A1), the transport of the stone by boat to Knarrevik (module A2), the manufacturing of Microdol 5 (module A3), and its distribution to clients (module A4).



Additional technical information:

Not applicable.



LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.














Module A4 contains an average distance of transportation to the Norwegian market, with a truck of capacity higher than 32 tonnes.

Modules C and D are not relevant for this product, as it fulfills the three criteria described by EN 15804+A2:2019, namely: 1) the product is physically integrated with other materials during installation so it cannot be physically retrieved at end of life; 2) The product is no longer identifiable at end of life as a result of a physical or chemical transformation process; and 3) The product does not contain biogenic carbon.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, over 32 tonnes, EURO 6 (km) - Europe	53,3 %	100	0,023	l/tkm	2,30

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact				
	Indicator	Unit	A1-A3	A4
	GWP-total	kg CO ₂ -eq	4,01E+01	8,72E+00
	GWP-fossil	kg CO ₂ -eq	3,99E+01	8,71E+00
	GWP-biogenic	kg CO ₂ -eq	1,83E-01	3,73E-03
	GWP-luluc	kg CO ₂ -eq	2,85E-02	2,65E-03
	ODP	kg CFC11 -eq	6,97E-06	2,10E-06
	AP	mol H+ -eq	1,01E+00	2,80E-02
	EP-FreshWater	kg P -eq	4,52E-04	6,93E-05
	EP-Marine	kg N -eq	2,35E-01	6,14E-03
	EP-Terrestrial	mol N -eq	2,63E+00	6,85E-02
	POCP	kg NMVOC -eq	6,81E-01	2,69E-02
	ADP-minerals&metals ¹	kg Sb-eq	4,55E-04	1,55E-04
	ADP-fossil ¹	MJ	5,19E+02	1,41E+02
	WDP ¹	m ³	1,19E+04	1,08E+02

GWP-total = Global Warming Potential total; 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







"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

1. 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

Remarks to environmental impacts

Additional environmental impact indicators











Indicator	Unit	A1-A3	A4
 PM	Disease incidence	ND	ND
 IRP ²	kgBq U235 -eq	ND	ND
 ETP-fw ¹	CTUe	ND	ND
 HTP-c ¹	CTUh	ND	ND
 HTP-nc ¹	CTUh	ND	ND
 SQP ¹	dimensionless	ND	ND

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed




1. 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
2. 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.

Resource use				
	Indicator	Unit	A1-A3	A4
	PERE	MJ	8,78E+02	1,78E+00
	PERM	MJ	3,20E-03	0,00E+00
	PERT	MJ	8,78E+02	1,78E+00
	PENRE	MJ	5,18E+02	1,41E+02
	PENRM	MJ	1,23E+00	0,00E+00
	PENRT	MJ	5,20E+02	1,41E+02
	SM	kg	0,00E+00	0,00E+00
	RSF	MJ	7,69E-01	6,23E-02
	NRSF	MJ	2,13E+00	2,09E-01
	FW	m ³	6,58E+00	1,61E-02

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 resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"






*INA Indicator Not Assessed

End of life - Waste				
Indicator		Unit	A1-A3	A4
	HWD	kg	2,67E-01	7,74E-03
	NHWD	kg	5,96E+00	1,23E+01
	RWD	kg	3,84E-03	9,66E-04

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3} = 0,009$ "

*INA Indicator Not Assessed

End of life - Output flow				
Indicator		Unit	A1-A3	A4
	CRU	kg	0,00E+00	0,00E+00
	MFR	kg	1,23E-02	0,00E+00
	MER	kg	3,62E-01	0,00E+00
	EEE	MJ	2,06E-01	0,00E+00
	EET	MJ	3,12E+00	0,00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3} = 0,009$ "

*INA Indicator Not Assessed

Biogenic Carbon Content		
Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in accompanying packaging	kg C	0,00E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂



Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Source	Amount	Unit
Electricity, Norway (kWh)	ecoinvent 3.6	24,33	g CO ₂ -eq/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment






Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products			
Indicator	Unit	A1-A3	A4
GWPIOBC	kg CO ₂ -eq	4,00E+01	8,72E+00

GWPI-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
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 NPCR Part A: Construction products and services. Ver. 2.0. March 2021, EPD-Norge.

 <small>Global program operator</small>	Program operator and publisher The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo, Norway	Phone: +47 977 22 020 e-mail: post@epd-norge.no web: www.epd-norge.no
	Owner of the declaration: Omya Hustadmarmor AS Sjøvegen 69, 6440 Elnesvågen	Phone: +47 41322610 e-mail: lovise.stakvik@omya.com web: www.omya.com
	Author of the Life Cycle Assessment LCA.no AS Dokka 6A, 1671	Phone: +47 916 50 916 e-mail: post@lca.no web: www.lca.no
	Developer of EPD generator LCA.no AS Dokka 6B,1671 Kråkerøy	Phone: +47 916 50 916 e-mail: post@lca.no web: www.lca.no
	ECO Platform ECO Portal	web: www.eco-platform.org web: ECO Portal