# Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## Neocrete Activator

NEOCRETE

| | |
|---|---|
| Programme: | The International EPD® System, www.environdec.com |
| Programme operator: | EPD International AB |
| Licensee: | EPD Australasia, www.epd-australasia.com |
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An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com.

EPD INTERNATIONAL EPD SYSTEM

AUSTRALASIA EPD® INTERNATIONAL EPD SYSTEM

ECO PLATFORM EPD VERIFIED

# Information about EPD owner

Neocrete is an innovative materials technology company dedicated to transforming the concrete industry through sustainable, high-performance additives that reduce cement usage, increase the use of alternative low-carbon low-cost materials and lower $CO_2$ emissions. Our solutions are designed to meet the construction sector's demand for durability, efficiency, and environmental responsibility.

Zarina Alexander & Matt Kennedy-Good founded Neocrete in 2018 to re-engineer concrete - the building block for our future to make it resilient, regenerative, carbon zero – at a lower cost. Neocrete is proven in market, now selling in South East Asia, reducing carbon emissions and costs for customers.

**Neocrete technology has been recognised by the industry leaders for its carbon-reducing potential:**

- Selected out of 70 applicants worldwide as one of four companies to partner with GCCA members, representing 80% of global cement and concrete manufacturers outside China.
- Out of over 100 applicants worldwide, Neocrete was chosen as one of four startups to partner with CRH Operating Companies to pilot its technology.
- Named among the top four sustainable materials startups by Cemex Ventures in 2025.

**Neocrete operates under rigorous quality and compliance frameworks, holding ISO 9001 certification for quality management systems.**

## Contact Information


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# Product information

## Product(s) covered by EPD

Neocrete Activator (the Activator) is a dry powdered additive for concretes, mortars, dry building mixtures, grouts and cements (classified under EN 934-2 admixtures for concrete, mortar and grout). It activates the chemical reactivity of cementitious materials in concrete so that less cementitious material is required to achieve similar hardened concrete properties.

Neocrete Activator allows for increase in the substitution rates of supplementary cementitious materials (SCMs), by enhancing their binding properties, that are, in some cases, superior to binding properties of Portland cement. The Activator also enhances reduction in gas and water permeability in concrete.

The Activator consists of a combination of minerals and chemically active components processed to enhance chemical and physical properties of cementitious materials. It does not contain substances that are harmful to people or the environment. The Activator is suitable for potable water concrete storage structures.

Neocrete Activator (the Activator) is a concrete additive (classified under EN 934-2 admixtures for concrete, mortar and grout) which reduces the overall carbon footprint of concrete production while maintaining high strength and improving durability.

**All information and results in this EPD are for the single product, Neocrete Activator.**

For more information on Neocrete Activator, go to https://www.neocrete.com/ourproduct.

### Product classification and industry standards

| Product | Classification | Code | Category |
|---|---|---|---|
| Neocrete Activator | UN CPC Ver.2 | 35499 | Other chemical products n.e.c. |
| | HS 2007 | 3824.40.00 | Prepared additives for cements, mortars or concretes |
| | ANZSIC 2006 | 2090 | Other Non-Metallic Mineral Product Manufacturing |
| | EN | EN 934-2 | Admixtures for concrete, mortar and grout |

# Technical purpose of the product

## Cement reduction

Using Neocrete Activator, cement content in concrete and mortar can be reduced by up to 30%.

## Cement replacement

When used with SCMs Portland cement content can be reduced by up to 50% without impairing the early or ultimate strength of concrete.

The Activator allows an increase of the substitution rate of Portland Cement with SCMs up to 50% (as % of cement replacement, i.e. from 10% to 50% substitution).

## Concrete compressive strength increase

- Accelerated strength gain: target 28-day strength can be achieved by day 7
- Increased ultimate concrete strength by 25-35%
- Increased day 1 strength by 70-100%

## Enhanced durability

Using Neocrete Activator, cement content in concrete and mortar can be reduced by up to 30%.

## Cement reduction

Concrete prepared using the Activator with 30% reduced cement in the mix provides:

- Enhanced resistance to water penetration over and above control concrete with no cement reduction
- Enhanced resistance to chloride penetration over and above control concrete with no cement reduction
- Reduced volume of voids and immersed and boiled absorption enhanced sorptivity, i.e. reduced initial and secondary rate of absorption

This demonstrates the ability of the concrete containing the Neocrete Activator to have significantly enhanced durability characteristics at significantly lower cement levels.

## Dose rates of Activator

Typical dose rate of Activator is 2-3% of the total cementitious materials content. In some circumstances the dose rate can be increased to 4%. Trials are recommended to establish the required dose rate for the desired outcome.

## Product physical data

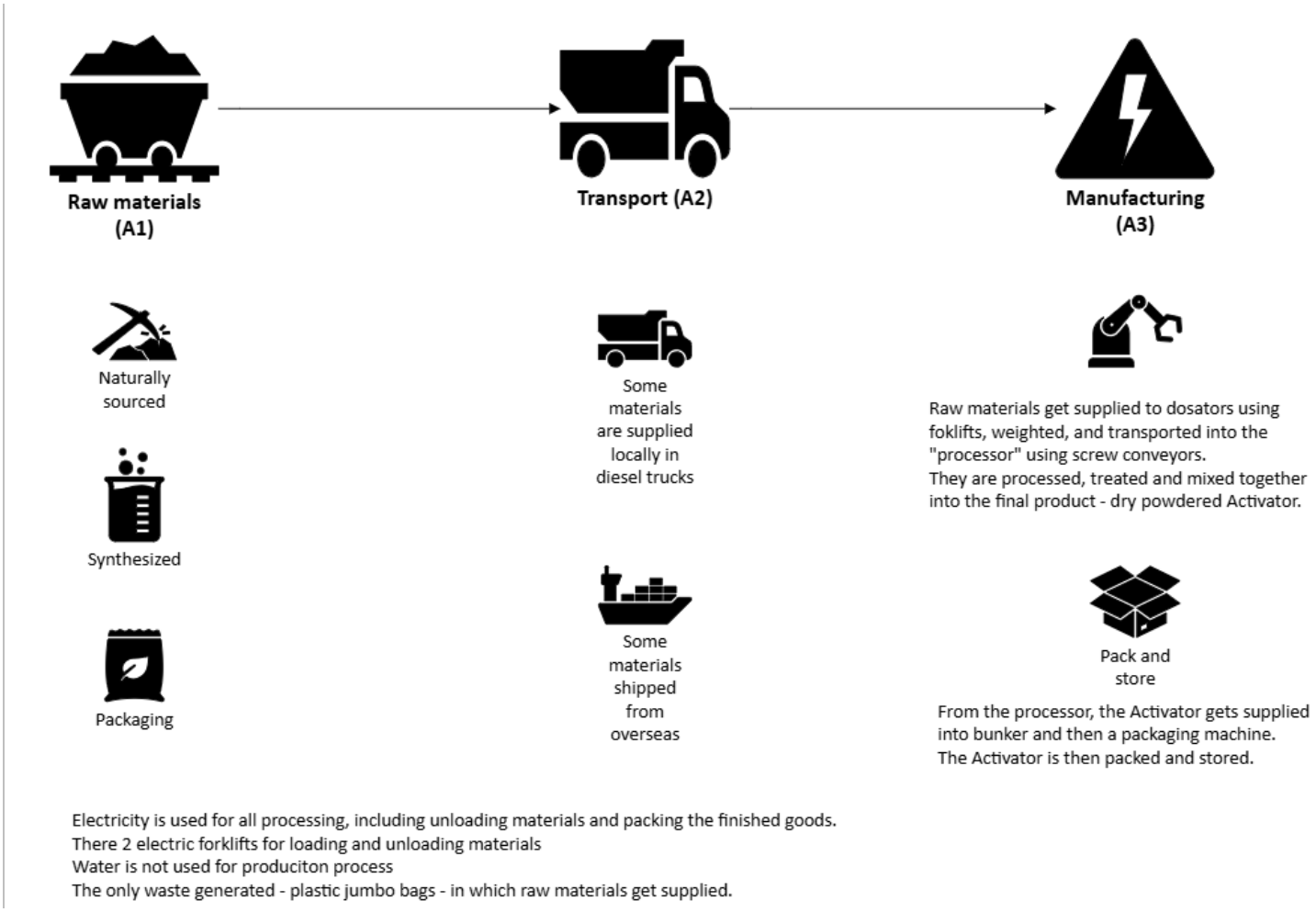
| | |
|---|---|
| Form: | Powder |
| Colour: | Light beige to light brown |
| Chloride content: | 0.05%-0.07% |
| TEA content: | Does not contain TEA |
| Red List chemicals: | None |
| Specific gravity: | 1.67 |
| Bulk density: | 550 kg/m³ |
| Packaging: | 800kg bulk bags or 10kg paper bags on request |
| Storage: | 36 months in dry conditions in factory packaging |

# Production Process

The Neocrete proprietary activation process is energy-efficient, cost-effective, and low in carbon emissions. The Activator is a powdered additive for concrete and includes a combination of minerals and chemical components prepared according to Neocrete's proprietary process. These minerals are processed to achieve optimal chemical and physical properties to achieve high surface charge. The high surface charge of the Activator creates synergistic reactions that make it highly effective at low dosage rates.

Neocrete Activator is currently produced out of a production plant in South Auckland, as shown in Figure 1 below. Raw materials include natural pozzolans, chemical additives, and packaging and are sourced both domestically and globally from China, India, and Australia. Transport from suppliers to the plant include truck, train, and ship.

## Figure 1: Production process diagram



# Content Declaration

## Table 1: Content declaration for one tonne (1 t) of Neocrete Activator

| Product content | Mass, kg | Post-consumer recycled material, mass-% of product | Biogenic material, mass-% of product | Biogenic material, kg C/declared unit |
|---|---|---|---|---|
| Natural pozzolans | 890 | 0 | 0 | 0 |
| Chemical additives | 110 | 0 | 0 | 0 |
| **Total** | **1.00E+03** | **0** | **0** | **0** |

## Table 2: Content declaration of packaging for one tonne (1 t) of Neocrete Activator

| Packaging materials | Mass, kg | Mass-% (versus the product) | Biogenic material, kg C/declared unit |
|---|---|---|---|
| Jumbo bag | 3.75 | 0.375% | 0 |
| Packaging tape | 0.00629 | 0.000629% | 0.0880 |
| Pallet | 10.6 | 1.06% | 7.48 |
| Pallet documents pouch | 0.00189 | 0.000189% | 0 |
| Pallet biowrap | 0.252 | 0.0252% | 0.0088 |
| Pallet strapping | 0.0378 | 0.00377% | 0 |
| Pallet sheet caps | 0.0755 | 0.00755% | 0.0264 |
| **Total** | **14.8** | **1.48%** | **7.60** |

## Dangerous substances from the candidate list of SVHC for Authorisation

The products declared within this EPD

- Do not release dangerous substances to soil and water
- Do not contain hazardous substances requiring labelling
- Do not contain materials identified in the European Chemicals Agency's Candidate List of Substances of Very High Concern in the products at a concentration greater than 0.1% (ECHA, 2025)

# LCA information

## Declared Unit

The declared unit for the EPD is 1.00E+03 kg plus its packaging, or 1 tonne (1 t).

## System boundaries

As shown in the table below, this EPD has a scope of Cradle to gate (A1–A3), as shown in Table 3. Other life cycle stages (Modules A4-A5, B1-B7, C1-C4, D) are dependent on particular scenarios and best modelled at the building level.

The life-cycle stages A4 – B7 are excluded from the study because the products may be purchased by a variety of products for a range of applications in both new and existing building and construction projects. This potential variation means it is not possible to model one representative scenario for the products in these stages.

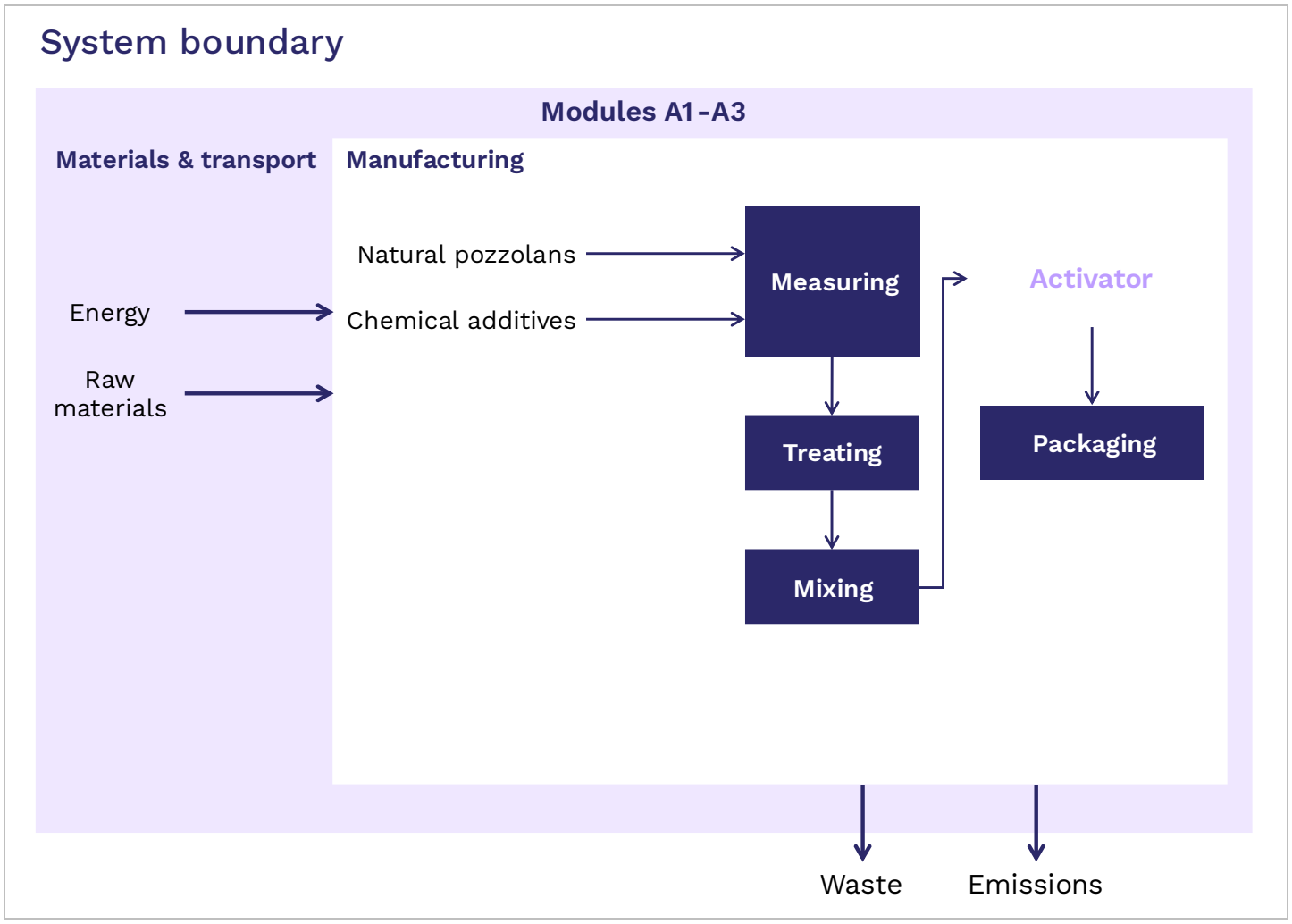
The product undergoes a chemical change when physically integrated with concrete during its use and cannot be separated from concrete at its end-of-life. As there is no biogenic content in the product and the EPD is not intended for business-to-consumer, the life cycle stages C1-C4 have been excluded from the study.

### Table 3: Modules included in the scope of the EPD

| | Product stage | | | Distribution/installation stage | | Use stage | | | | | | | End-of-life stage | | | | Beyond product life cycle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Raw material supply | Transport of raw materials | Manufacturing | Transport to customer | Construction / Installation | Use | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction / demolition | Transport to waste processing | 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 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Geography | GLO | GLO | NZ | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

X = included in the EPD; ND = Module not declared (such a declaration shall not be regarded as an indicator result of zero)

# Product system process flow diagram




# LCA software and database

The LCA was conducted in Microsoft Excel. It utilises life cycle inventory data from ecoinvent, Allocation, cut-off, EN15804, ecoinvent database version 3.10 (Wernet, 2016) for the raw and process materials obtained from the background system.

## Electricity

Neocrete's electricity provider at the production plant is Ecotricity, a provider of Toitū climate positive certified electricity. Ecotricity's climate positive certification is for the period 2023-04-01 to 2024-06-30 and is valid for 3 years. Sources for the renewable electricity supplied are not selected by Neocrete and solely determined by Ecotricity. A commitment to purchase renewable electricity for at least the next 5 years has also been made by Neocrete.

The composition for Ecotricity's certified 100% renewable electricity is modelled using ecoinvent datasets for each generation source. The generation mix is made up of hydro (93.64%), wind (2.72%), and domestic solar (3.64%). The modelling accounts for losses including onsite consumption (3.00%), and the low voltage (<1kV) grid's transmission and distribution losses (6.73%), calculated based on data from the Ministry of Business, Innovation & Employment (MBIE, 2023). The emission factor for the mix supplied by Ecotricity for the GWP-GHG indicator is 0.00913 kg $CO_2$-eq/kWh (based on EF3.1).

## Modelling of infrastructure/capital goods

Capital goods related to electricity generation is included in all electricity datasets used in this study. Infrastructure and capital goods for all other processes in the product system are excluded from the system boundary.

# Allocation

Specific data was provided for producing Neocrete Activator and it is the only product manufactured at the South Auckland production plant. Allocation was therefore not needed for the site data or specific product lines.

## Multi-output Allocation

Losses of the concrete activator during manufacturing are collected as waste with no economic value and are not sold outside of the product system. An economic allocation with a value of 0 is therefore applied to the activator losses and all impacts from manufacturing remain with the main product, Neocrete Activator, only.

## Recycling and recycled inputs

The production process does not use any materials with recycled content or internally recycle products in the same product system.

However, packaging received with raw materials are wasted during manufacturing and externally recycled, with no recycling processes occurring internally within the product system. For the bulk bag packaging received with raw materials P1-P6 and wasted, they are transported to a recycling facility, sorting, washing, shredding, and grinding. For the pallets delivered with the product, they are assumed to be reused 5 times over its entire life cycle. Use for ⅕ of the pallet's life cycle is included and assumed to be replaced due to breakage with waste transported to a landfill for sorting and treatment.

# Data Quality Assessment

All primary data collected for the life cycle inventory (LCI) is from 2024-09-01 to 2025-08-30 and all secondary data from the ecoinvent database is representative of the year 2023.

## Table 4: Data sources and share of primary data

| Process | Source type | Source | Reference year | Data category | Share of primary data, of GWP-GHG results for A1-A3 |
|---|---|---|---|---|---|
| **Production of P1, P2, P5, P6** | Database | ecoinvent v3.10 | 2023 | Rep. secondary data | 0% |
| **Production of P3, P4** | Database | ecoinvent v3.10 | 2023 | Rep. secondary data | 0% |
| **Transport of raw materials to site** | Database | ecoinvent v3.10 | 2023 | Primary data | 8.7% |
| **Generation of electricity used in manufacturing of product** | Database | ecoinvent v3.10 | 2023 | Primary data | 0.7% |
| **Production of packaging materials** | Database | ecoinvent v3.10 | 2023 | Rep. secondary data | 0% |
| **Waste from manufacturing** | Database | ecoinvent v3.10 | 2023 | Rep. secondary data, Proxy data | 0% |
| **Total share of primary data, of GWP-GHG results for A1-A3** | | | | | 9.4% |

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Secondary data used for a few processes have ‘fair’ and ‘poor’ technical representativeness but was the best available data. The processes with over 30% contribution to core indicators are listed below.

## Table 5: Data quality assessment – representativeness

| Process | Representativeness | Core indicators affected |
|---|---|---|
| **Chemical additives** | Technical - Fair | All |
| **Waste from manufacturing** | Technical – Fair | GWP-biogenic |
| **Packaging materials** | Technical – Fair | GWP-luluc |
| **Transport** | Technical – Fair | AP, EP-marine, EP-terrestrial, POCP |
| **Natural pozzolans** | Technical - Fair | WDP |
| **Waste from manufacturing** | Technical – Poor | GWP-biogenic |

# Cut off criteria

In early production, Neocrete Activator was packaged in paper bags with 10 kg capacity and then transitioned to jumbo bags with 800 kg capacity. Jumbo bags will be the main packaging used in future production. Data collected for packaging using paper bags (10 kg capacity) was cut off and replaced with jumbo bags (800 kg capacity) to reflect the main packaging size. Pallets used were also adjusted to reflect the differences between paper and jumbo bag loads.

# Key assumptions

Neocrete Activator is delivered on wooden pallets, which are reused from the shipments of raw materials received from suppliers. These pallets are not purchased by Neocrete and are assumed to be used 5 times over its entire life cycle by different users in the supply chain. The impacts from Neocrete's use of the wooden pallets in and its disposal are therefore assumed to be one fifth of the total impacts for 1 wooden pallet. Material properties such as its mass and biogenic content do not consider the number of reuses.

# Assessment Indicators

The results tables describe the different environmental indicators for each product per declared unit, for each declared module. The EN 15804 reference package based on EF 3.1, February 2023 is used.

- Table 6 contains the core environmental impact indicators in accordance with EN 15804:2012+A2:2019, describing the potential environmental impacts of the product.
- Table 7 provides additional environmental impact indicators in accordance with EN 15804:2012+A2:2019.
- Table 8 shows the life cycle inventory indicators for resource use.
- Table 9 displays the life cycle inventory indicators for waste and other outputs.
- Table 10 displays biogenic carbon content indicators.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

## Table 6: EN15804+A2 Core Environmental Impact Indicators

| Impact category | Indicator | Unit |
|---|---|---|
| Climate change – total | GWP-total | kg $CO_2$-eq. |
| Climate change – fossil | GWP-fossil | kg $CO_2$-eq. |
| Climate change – biogenic | GWP-biogenic | kg $CO_2$-eq. |
| Climate change – land use and land use change | GWP-luluc | kg $CO_2$-eq. |
| Ozone depletion | ODP | kg CFC11-eq. |
| Acidification | AP | Mole of $H^+$ eq. |
| Eutrophication aquatic freshwater | EP-freshwater | kg P eq. |
| Eutrophication aquatic marine | EP-marine | kg N eq. |
| Eutrophication terrestrial | EP-terrestrial | Mole of N eq. |
| Photochemical ozone formation | POCP | kg NMVOC eq. |
| Depletion of abiotic resources – minerals and metals[1] | ADP-minerals&metals | kg Sb-eq. |
| Depletion of abiotic resources – fossil fuels[1] | ADP-fossil | MJ |
| Water use[1] | WDP | $m^3$ world equiv. |

## Table 7: EN15804+A2 Additional Environmental Impact Indicators

| Impact Category | Indicator | Unit |
|---|---|---|
| Climate Change[2] | GWP-GHG | kg $CO_2$-eq. |
| Climate Change[3] | GWP-GHG (IPCC AR5) | kg $CO_2$-eq. |
| Particulate Matter emissions | PM | Disease incidences |
| Ionising Radiation – human health[4] | IRP | kBq U235 eq. |
| Eco-toxicity (freshwater)[1] | ETP-fw | CTUe |
| Human Toxicity, cancer[1] | HTP-c | CTUh |
| Human Toxicity, non-cancer[1] | HTP-nc | CTUh |
| Land use related impacts / soil quality[1] | SQP | Dimensionless (Pt) |

## Table 8: Life cycle inventory indicators on use of resources

| Parameter | Indicator | Unit |
|---|---|---|
| Use of renewable primary energy excluding renewable primary energy resources used as raw materials | PERE | MJ |
| Use of renewable primary energy resources used as raw materials | PERM | MJ |
| Total use of renewable primary energy resources | PERT | MJ |
| Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials | PENRE | MJ |
| Use of non-renewable primary energy resources used as raw materials | PENRM | MJ |
| Total use of non-renewable primary energy resources | PENRT | MJ |
| Use of secondary material | SM | kg |
| Use of renewable secondary fuels | RSF | MJ |
| Use of non-renewable secondary fuels | NRSF | MJ |
| Net use of fresh water | FW | $m^3$ |

## Table 9: Life cycle inventory indicators on waste categories and output flows

| Parameter | Indicator | Unit |
|---|---|---|
| Hazardous waste disposed | HWD | kg |
| Non-hazardous waste disposed | NHWD | kg |
| Radioactive waste disposed | RWD | kg |
| Components for reuse | CRU | kg |
| Materials for energy recovery | MER | kg |
| Materials for recycling | MFR | kg |
| Exported electrical energy | EEE | MJ |
| Exported thermal energy | EET | MJ |

## Table 10: Biogenic carbon content indicators

| Parameter | Indicator | Unit |
|---|---|---|
| Biogenic carbon content - product | BCC-prod | kg C |
| Biogenic carbon content - packaging | BCC-pack | kg C |

**Note: 1 kg biogenic carbon is equivalent to 44/12 kg $CO_2$**

## Disclaimers

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 experience with the indicator.
2. This indicator should be identical to GWP-total except that the CF for biogenic $CO_2$ is set to zero. It has been included in the EPD following the PCR (EPD International, 2023). In this study it is calculated by subtracting the value of Climate change – biogenic (GWP-biogenic) from the value of Climate change – total (GWP-total) since the ecoinvent Excel LCIA results do not include the indicator.
3. GWP-GHG (IPCC AR5) is an additional GWP100 indicator that is aligned with the Intergovernmental Panel on Climate Change (IPCC) 2013 Fifth Assessment Report (AR5) (IPCC 2013), national greenhouse gas reporting frameworks in Australia and New Zealand and previous versions of the Construction Products PCR (PCR2019:14v1.11). It excludes biogenic carbon and indirect radiative forcing.
4. 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 some construction materials, is also not measured by this indicator.

# Environmental performance

The following tables show results for 1.00E+03 kg (1 t) of Neocrete Activator plus its packaging.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Biogenic carbon and/or recovered energy leaving the product system in module A5 has been balanced out already in modules A1-A3.

The use of primary energy is separated into energy used as raw material and energy used as energy carrier as per option A in Annex 3 in the PCR (EPD International, 2023).

Energy indicators (MJ) are always given as net calorific value.

## Results for 1 t of Neocrete Activator

### Table 11: EN15804+A2 Core environmental impact indicators

| Indicator | Unit | A1-A3 |
|---|---|---|
| **GWP-total** | kg $CO_2$-eq. | 2.66E+02 |
| **GWP-fossil** | kg $CO_2$-eq. | 2.65E+02 |
| **GWP-biogenic** | kg $CO_2$-eq. | 1.21E+00 |
| **GWP-luluc** | kg $CO_2$-eq. | 2.49E-01 |
| **ODP** | kg CFC11-eq. | 8.58E-06 |
| **AP** | Mole of $H^+$ eq. | 1.85E+00 |
| **EP-freshwater** | kg P eq. | 6.55E-02 |
| **EP-marine** | kg N eq. | 3.47E-01 |
| **EP-terrestrial** | Mole of N eq. | 3.69E+00 |
| **POCP** | kg NMVOC eq. | 1.39E+00 |
| **ADP-minerals&metals**[1, 2] | kg Sb-eq. | 2.05E-03 |
| **ADP-fossil**[1] | MJ | 5.06E+03 |
| **WDP**[1] | $m^3$ world equiv. | 1.59E+02 |

### Table 12: EN15804+A2 Additional environmental impact indicators

| Indicator | Unit | A1-A3 |
|---|---|---|
| **GWP-GHG** [3] | kg $CO_2$-eq. | 2.66E+02 |
| **GWP-GHG (IPCC AR5)** [4] | kg $CO_2$-eq. | 2.66E+02 |
| **PM** | Disease incidences | 1.36E-05 |
| **IRP** [5] | kBq U235 eq. | 1.35E+01 |
| **ETP-fw** [1,2] | CTUe | 8.72E+02 |
| **HTP-c** [1,2] | CTUh | 2.91E-08 |
| **HTP-nc** [1,2] | CTUh | 2.29E-06 |
| **SQP** [1,2] | Pt | 6.67E+03 |

## Table 13: Use of resources

| Indicator | Unit | A1-A3 |
|---|---|---|
| **PERE** | MJ | **1.07E+03** |
| **PERM** | MJ | **0** |
| **PERT** | MJ | **1.07E+03** |
| **PENRE** | MJ | **5.06E+03** |
| **PENRM** | MJ | **0** |
| **PENRT** | MJ | **5.06E+03** |
| **SM** | kg | **0** |
| **RSF** | MJ | **0** |
| **NRSF** | MJ | **0** |
| **FWT** | m3 | **5.13E+00** |

## Table 14: Waste production and output flows

| Indicator | Unit | A1-A3 |
|---|---|---|
| **HWD** | kg | 1.59E+01 |
| **NHWD** | kg | 5.13E+02 |
| **RWD** | kg | 3.35E-03 |
| **CRU** | kg | 0 |
| **MER** | kg | 5.61E+00 |
| **MFR** | kg | 0 |
| **EEE** | MJ | 0 |
| **EET** | MJ | 0 |

## Table 15: Biogenic Carbon Content

| Indicator | Unit | A1-A3 |
|---|---|---|
| **BCC-prod** | kg C | 0 |
| **BCC-pack** | kg C | 4.82E+00 |

Note: 1 kg biogenic carbon is equivalent to 44/12 kg $CO_2$

# Additional environmental information

## Release of substances:

Neocrete Activator does not emit dangerous substances into indoor air, soil, or water during its use stage. The product is manufactured to comply with relevant chemical safety standards, and no hazardous emissions are associated with its intended application in concrete production.

## Proper use and durability:

When used in accordance with Neocrete's technical guidelines, the Activator enhances the performance of concrete made with supplementary cementitious materials (SCMs). Tighter microstructure of concrete, containing Neocrete Activator, enables reduction in its permeability to gas and water and thereby extending service life and reducing the need for premature repair or replacement.

## Maintenance and service:

The Activator itself requires no maintenance. Its contribution to the durability of concrete structures reduces long-term maintenance needs by improving resistance to cracking, carbonation, and chloride ingress.

## Recycling and reuse:

Concrete made with Neocrete Activator can be processed through conventional recycling routes at the end-of-life (e.g., crushed for use as aggregate in road base or new concrete). By reducing cement clinker content, the resulting concrete offers lower embodied carbon even when recycled. No special procedures are required for recycling.

## Disposal considerations:

At end-of-life, residual Activator (if any) can be neutralised with water and disposed of in accordance with local regulations. Packaging (typically IBCs or drums) is recyclable and should be returned through established container recovery schemes.

## Organisational environmental work:

Neocrete operates under a certified ISO 9001 Quality Management System. The company integrates sustainability throughout its supply chain by prioritising the use of locally sourced industrial by-products, such as ungraded fly ash, thereby diverting waste from landfill or ocean disposal. Neocrete's work has been recognised through industry awards and partnerships, including the CRH Accelerator Programme and the Sustainable Business Network in New Zealand.

## Conversion factors

For comparability, the environmental impacts of Neocrete Activator are declared per 1.00E+03 kg (1 t) of product. Conversion to other functional uses (e.g., per m³ of concrete produced with Activator) can be derived using mix design proportions provided in Neocrete's technical datasheets. This enables benchmarking against conventional cement, SCMs and other additives (water-reducers – WRDA, and retarders) on a like-for-like basis. See the real-life example of mix designs used with and without Neocrete Activator, Ordinary Portland Cement (OPC) and Fly Ash (FA) and typical additives used in concrete.

## Table 16: Examples of mix designs

| Control/Treated | Control | Control + FA | Treated |
|---|---|---|---|
| **Pozzolan used** | | Hengyi FA | Hengyi FA |
| **Mix name** | Control 100% OPC | Control 90% OPC + 10% FA | Neocrete 60% OPC + 37%FA + 3%A |
| **Sand and aggregates, kg/m³** | 1,898 | 1,848 | 1,898 |
| **Cement, kg/m³** | 350 | 333 | 198 |
| **Fly ash, kg/m³** | | 37 | 122 |
| **Water, kg/m³** | 158 | 167 | 150 |
| **Activator, kg/m³** | | | 10.0 |
| **WRDA, l/m³** | 1.6 | 1.7 | |
| **Retarder, l/m³** | 1.2 | 1.2 | |

# Abbreviations

| | |
|---|---|
| ADP | Abiotic Depletion Potential |
| AP | Acidification Potential |
| EoL | End-of-Life |
| EP | Eutrophication Potential |
| GWP | Global Warming Potential |
| LCI | Life Cycle Inventory |
| PM | Potential incidence of disease due to PM emissions |
| ODP | Depletion potential of the stratospheric ozone layer |
| POCP | Formation potential of tropospheric ozone |
| VOC | Volatile Organic Compound |
| WDP | Water (user) deprivation potential, deprivation-weighted water consumption |

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# General information

An Environmental Product Declaration, or EPD, is a standardised and verified way of quantifying the environmental impacts of a product based on a consistent set of rules known as a PCR (Product Category Rules). The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit 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 identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterisation factors); and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

The results for EN15804+A1 compliant EPDs are not comparable with EN15804+A2 compliant studies as the methodologies are different. To support backwards comparability and compatibility, environmental performance results have also been provided for the indicators required in EN15804+A1, although the study does not claim compliance with this standard.

## Programme Information

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# Product Category Rules (PCR)

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|---|---|
| CEN Standard EN 15804 served as the core Product Category Rules (PCR) | |
| PCR: | PCR 2019.14 Construction Products, version 2.0.1 (published on 2025-06-05, valid until 2030-04-07) |
| PCR review was conducted by: | The Technical Committee of the International EPD® System. See www.environdec.com for a list of members. |
| Review Chairs: | Rob Rouwette (chair), Noa Meron (co-chair). The review panel may be contacted via the Secretariat: www.environdec.com/contact |

# Verification

External and independent ('third-party') verification of the declaration and data, according to ISO 14025:2006, via EPD verification through:
☑ Individual EPD verification without a pre-verified LCA/EPD tool

| | |
|---|---|
| Third party verifier: | Claudia Peña (Director of PINDA LCT SpA)<br>Email: pinda.lct@gmail.com |
| Verifier approved by: | EPD Australasia and The International EPD System |
| Procedure for follow-up of data during EPD validity involves third-party verifier | ☐ Yes<br>☑ No |

# Information about Neocrete

| | |
|---|---|
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# Life cycle assessment (LCA)

| | |
|---|---|
| LCA accountability:<br>thinkstep anz | thinkstep ltd<br>Barbara Nebel<br>Edwin Chu<br>Web: www.thinkstep-anz.com<br>Email: info@thinkstep-anz.com<br>Post: 11 Rawhiti Road, Pukerua Bay, Wellington 5026, New Zealand |
| Geographical Scope | Global |
| Reference Year for Data | 2024-09-01 to 2025-08-30 |

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|---|---|---|---|
| **Version history** | 01 | 2025-12-05 | Original version of the EPD |