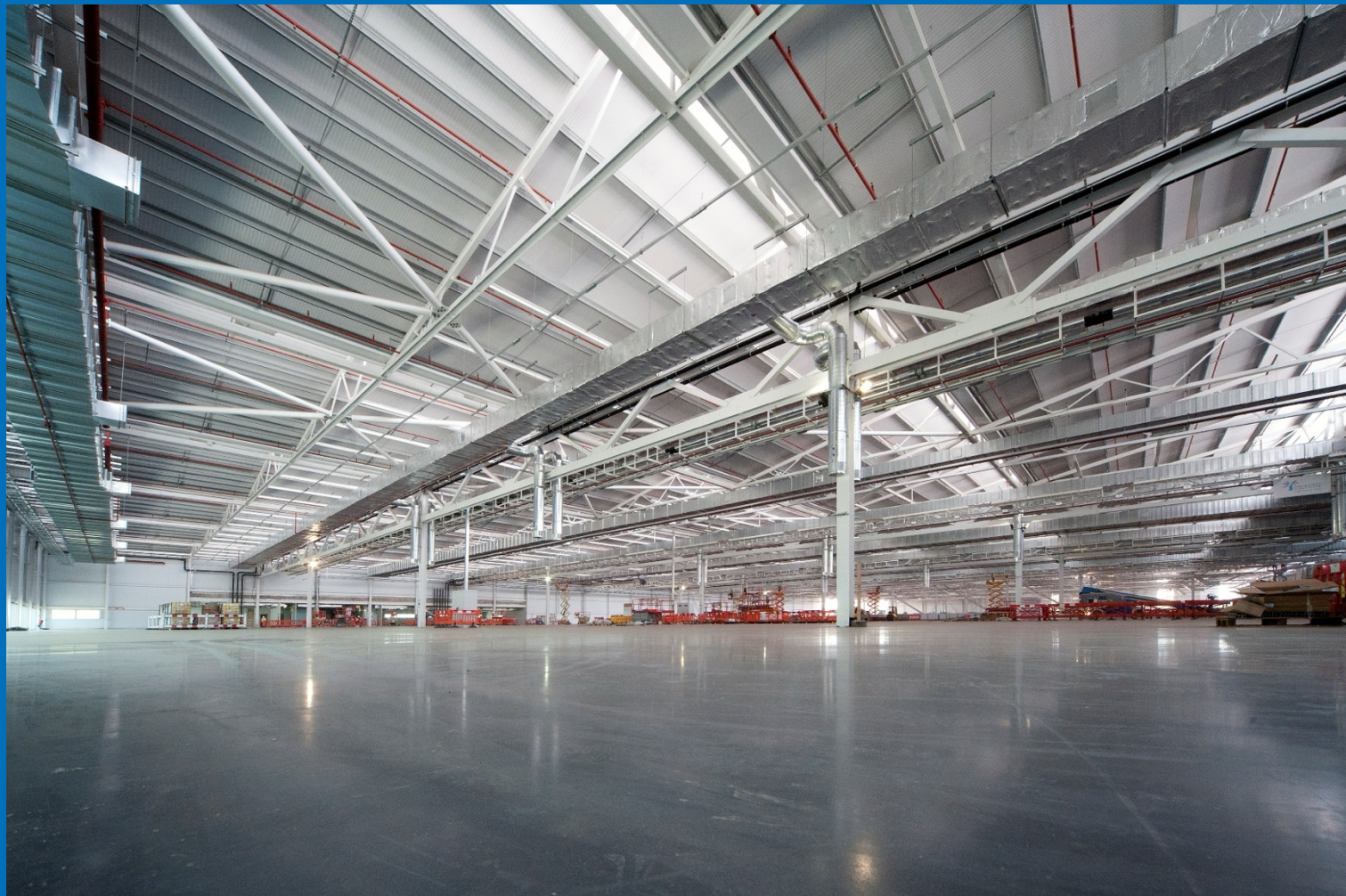


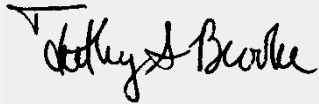


# QUAD® 855 EMx

## ENVIRONMENTAL PRODUCT DECLARATION CRADLE-TO-GATE



## General Information

|                                       |                                                                                                                     |                                                                                       |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Manufacturer Name:</b>             | Chryso Saint Gobain<br>2325 Lakeview Pkwy<br>Alpharetta, GA<br>30009, USA                                           |    |
| <b>Program Operator:</b>              | ASTM International<br>100 Barr Harbor Drive<br>West Conshohocken, PA<br>19428-2959, USA                             |    |
| <b>Declaration Number:</b>            | EPD 925                                                                                                             |                                                                                       |
| <b>Reference PCR:</b>                 | ISO 21930: 2017                                                                                                     |                                                                                       |
| <b>Date of Issuance:</b>              | March 5, 2025                                                                                                       |                                                                                       |
| <b>End of Validity:</b>               | March 5, 2030                                                                                                       |                                                                                       |
| <b>Product Name:</b>                  | Quad® 855 EMx                                                                                                       |                                                                                       |
| <b>EPD Owner:</b>                     | Chryso Saint Gobain                                                                                                 |                                                                                       |
| <b>Declared Unit:</b>                 | 1 kg of Quad® 855 EMx                                                                                               |                                                                                       |
| <b>EPD Scope:</b>                     | Cradle-to-Gate (A1, A2, and A3)                                                                                     |                                                                                       |
| <b>Prepared By:</b>                   | WAP Sustainability Consulting                                                                                       |  |
| <b>Verification:</b>                  | ISO 21930 serves as the core PCR. Independent verification of the declaration according to ISO 14025 and ISO 21930. |                                                                                       |
|                                       | <input type="checkbox"/> internal <input checked="" type="checkbox"/> external                                      |                                                                                       |
| <b>LCA Reviewer and EPD Verifier:</b> | Timothy S. Brooke<br>ASTM International                                                                             |   |

## Company Information

Chryso is a leading global provider of construction products that include high-performance specialty construction chemicals and building materials. Chryso partners with producers, contractors, designers, and engineers to achieve performance and sustainability goals. The company has a legacy of first to market and award-winning solutions that have been used to build some of the world's most renowned structures. Chryso is focused on continuous improvement for its customers, end-users, and the environment.

## Product Information

The Quad® system is the latest generation of Water Reducing Admixture designed to enhance the use of low-cost aggregates such as manufactured sands. The Quad® 855 EMx provides good workability retention to achieve targeted concrete quality and performance on-site at an optimized cost.

Table 1: Technical Data

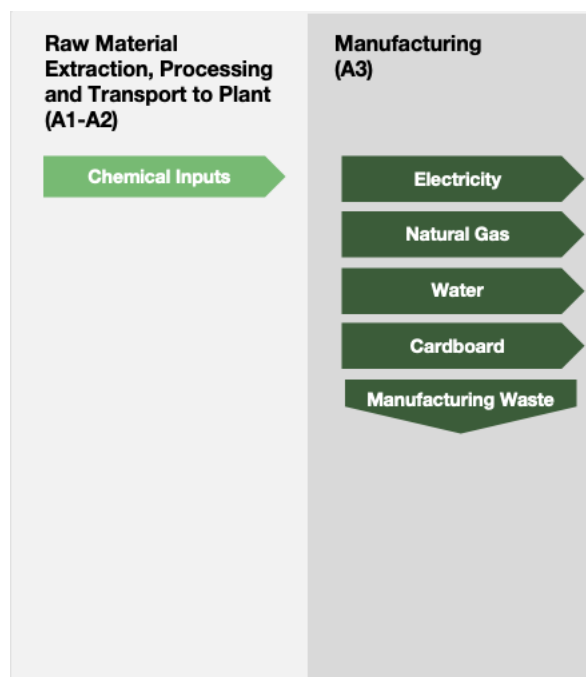
|                                    |                            |
|------------------------------------|----------------------------|
| <b>Product Nature</b>              | Liquid                     |
| <b>Color</b>                       | Colourless to light yellow |
| <b>Cl<sup>-</sup> Ions content</b> | ≤ 0,100 %                  |
| <b>Specific gravity (25°C)</b>     | 1,210 g/ml                 |
| <b>pH (25°C)</b>                   | 11,00                      |

## LCA Information

|                                             |                                                                                                                                                                                                                                                                         |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Declared unit</b>                        | 1 kg of Quad® 855 EMx                                                                                                                                                                                                                                                   |
| <b>Reference service life</b>               | Not declared as use phase is not included in the study                                                                                                                                                                                                                  |
| <b>Description of the system boundaries</b> | Cradle to Gate                                                                                                                                                                                                                                                          |
| <b>Geographical representativeness</b>      | A1-A3: United States                                                                                                                                                                                                                                                    |
| <b>Manufacturing locations</b>              | Royse City, Denver, Houston, Charlestown                                                                                                                                                                                                                                |
| <b>Time representativeness</b>              | Primary data collected for calendar year 2023                                                                                                                                                                                                                           |
| <b>Cut-off rules</b>                        | All flows for which data were provided are included in the assessment, accounting for at least 99% of the energy or mass flows and at least 99% of the environmental impacts from the product system. Production of capital equipment is excluded from this assessment. |
| <b>Allocation Procedures</b>                | Mass was deemed the most appropriate physical parameter for allocation                                                                                                                                                                                                  |
| <b>Database and LCA software used</b>       | SimaPro 9.0.1<br>Ecoinvent V3.9.1                                                                                                                                                                                                                                       |
| <b>LCA Report</b>                           | LCA of Admixtures, WAP Sustainability, October 2025                                                                                                                                                                                                                     |

EPDs are comparable only if they comply with this document, use the same sub-category PCR where applicable, include all relevant information modules and are based on equivalent scenarios with respect to the context of construction works.

System diagram:



|                  | 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             | ND                         | ND                        | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | ND                         | ND        | ND               | ND       | ND                                 |
| Geography        | US                  |           |               | ND                         | ND                        | ND        | ND          | ND     | ND          | ND            | ND                     | ND                    | ND                         | ND        | ND               | ND       | ND                                 |

No substances in the product are on the Candidate List of Substances of Very High Concern (SVHC) which exceed the limits for registration with the European Chemicals Agency.



## Results of the environmental performance indicators

The results presented here are for 1 declared unit, which is 1 kg of Quad® 855 EMx  
LCIA impact categories are reported using TRACI 2.1 indicators.

| Environmental Indicator                                        | Abbreviation     | Units                  | Total    | A1       | A2       | A3       |
|----------------------------------------------------------------|------------------|------------------------|----------|----------|----------|----------|
| <b>Core Mandatory Impact Indicator</b>                         |                  |                        |          |          |          |          |
| Global warming potential                                       | GWP              | kg CO <sub>2</sub> -eq | 6.44E-01 | 4.48E-01 | 6.39E-02 | 1.32E-01 |
| Depletion potential of the stratospheric ozone layer           | ODP              | kg CFC-11-eq           | 1.44E-08 | 1.29E-08 | 1.08E-09 | 4.28E-10 |
| Acidification potential of land and water                      | AP               | kg SO <sub>2</sub> -eq | 2.77E-03 | 1.72E-03 | 1.35E-04 | 9.10E-04 |
| Eutrophication potential                                       | EP               | kg PO <sub>4</sub> -eq | 4.69E-03 | 4.57E-04 | 1.16E-05 | 4.23E-03 |
| Formation of tropospheric ozone                                | SFP              | kg O <sub>3</sub> -eq  | 2.88E-02 | 2.26E-02 | 2.32E-03 | 3.86E-03 |
| Abiotic depletion potential for fossil resources               | ADP <sub>f</sub> | MJ Surplus             | 9.63E+00 | 6.81E+00 | 9.26E-01 | 1.89E+00 |
| <b>Use of Primary Resources</b>                                |                  |                        |          |          |          |          |
| Renewable primary energy carrier used as energy                | RPRE             | MJ                     | 5.92E-01 | 5.43E-01 | 1.24E-02 | 3.63E-02 |
| Renewable primary energy carrier used as material              | RPRM             | MJ                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Non-renewable primary energy used as energy                    | NRPRE            | MJ                     | 1.09E+01 | 7.73E+00 | 9.99E-01 | 2.16E+00 |
| Non-renewable primary energy used as material                  | NRPRM            | MJ                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| <b>Secondary Material, Secondary Fuel and Recovered Energy</b> |                  |                        |          |          |          |          |
| Use of secondary materials                                     | SM               | kg                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Use of renewable secondary fuels                               | RSF              | MJ                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Use of non-renewable secondary fuels                           | NRSF             | MJ                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Recovered energy                                               | RE               | MJ                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| <b>Mandatory Inventory Parameters</b>                          |                  |                        |          |          |          |          |
| Use of freshwater resources                                    | FW               | m <sup>3</sup>         | 1.61E+00 | 1.46E+00 | 5.33E-02 | 1.05E-01 |
| <b>Indicators Describing Waste</b>                             |                  |                        |          |          |          |          |
| Disposed of hazardous waste                                    | HWD              | kg                     | 1.67E-04 | 0.00E+00 | 0.00E+00 | 1.67E-04 |
| Disposed of non-hazardous waste                                | NHWD             | kg                     | 1.12E-03 | 0.00E+00 | 0.00E+00 | 1.12E-03 |
| Disposed of high-level radioactive waste                       | HLRW             | m <sup>3</sup>         | 3.39E-10 | 2.83E-10 | 1.08E-11 | 4.50E-11 |
| Disposed of low-level radioactive waste                        | LLRW             | m <sup>3</sup>         | 1.83E-09 | 1.44E-09 | 5.53E-11 | 3.37E-10 |
| Components for reuse                                           | CRU              | kg                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for recycling                                        | MFR              | kg                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for energy recovery                                  | MER              | kg                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported electrical energy (waste to energy)                   | EEE              | kg                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported thermal energy (waste to energy)                      | ETE              | kg                     | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

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. The results of modules A1-A3 shouldn't be used without considering the results of module C. A1-A3 results include the "balancing-out reporting" of biogenic CO<sub>2</sub> of packaging, traditionally released in A5. Additional optional indicators per EN 15804+A2 are not declared, including: particulate matter emissions; ionizing radiation, human health; eco-toxicity (freshwater); human toxicity, cancer effects; human toxicity, non-cancer effects; land use related impacts/soil quality.

## Additional environmental information

No additional environmental, social, or economic information is declared in this EPD.

## References

- ASTM 2020 - ASTM Program Operator for Product Category Rules (PCR) and Environmental Product Declarations (EPDs) General Program Instructions v8, April 29<sup>th</sup>.
- WAP Sustainability Consulting (2025) - A Cradle-to-Gate Life Cycle Assessment of Chryso Admixtures, Manufactured by Chryso Saint Gobain.
- ISO 21930: 2017 Building construction – Sustainability in building construction – Environmental declaration of building products.
- ISO 14025: 2006 Environmental labeling and declarations - Type III environmental declarations - Principles and procedures.
- ISO 14044:2006/AMD 1:2017/ AMD 2:2020 - Environmental management - Life cycle assessment - Requirements and guidelines.
- 14040:2006/AMD 1:2020 - Environmental management - Life cycle assessment - Principles and framework.



