

# PaGe\_007\_HydroWeigh-Archimedes\_MgO-C\_GraphiteNFL\_pressed

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**Tags:** MgOC GRK2802\_DFG\_461482547

Archimedes

**Category:** Testing & Analysis

**Status:** Success

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## Objective:

- Evaluation of bulk density and apparent porosity of pressed MgO-C samples with 1.1 wt.-% graphite NFL.

## Experimental setup:

- Raw material mixture from [Processing - PaGe\\_002\\_Mixing\\_MgO-C\\_GraphiteNFL](#)
- Pressing [PaGe\\_005\\_Pressing\\_MgO-C\\_BiomassPellets\\_120MPa](#)
- Hydrostatic weighing was performed according to EN 993-1 using [Device - Archimedes Density Apparatus \(ArchimedesDensityTester\)](#) with toluol as immersion liquid.

## Procedure :

1. Determining the toluol temperature (used for estimating the toluol density)
2. Weighing the samples in a dry state
3. Weighing in wet (soaked with toluol) state, "surface dry"
4. Weighing submerged in toluol
5. Drying the samples at 110 °C for 24 h

Details about the exact procedure can be obtained from EN 993-1.

## Results:

Mass 1, mass 2, and mass 3 to calculate the apparent porosity and density.

# elabExperiment Metadata - Contextualize data (storage structure, formats, and how the stored data correspond to experimental activities)

## Format

Format of the generated raw, (processing) meta, processed and result data

CSV, TXT,PDF; The data are stored in four subfolders: 0\_Documentation/ (additional documentation) 1\_RawData/ (direct experimental output), 2\_ProcessedData/ (data derived from raw), and 3\_EssentialData/ (features derived from processed). Generation metadata are included in the raw data file.

## Coverage

Fraction/part of the experiment contained in the generated raw and result data

The data set covers the hydrostatic weighing data and the resulting density and porosity values of the selected MgO-C specimens. For each specimen, the dry mass, toluol-soaked mass, and immersed mass in toluol were recorded using the Archimedes Density Apparatus according to EN 993-1.

## Description

Brief description to understand and navigate the generated raw, processed, meta and result data of the conducted experiment

This experiment documents the determination of bulk density and apparent porosity of pressed MgO-C reference samples with 1.1 wt.-% graphite NFL cut in fractures bades of bar-shaped specimens. 1\_RawData-Folder contains the determined masses as well as the toluol\_density derived from the temperature. 2\_ProcessedData contains the calculated values for bulk density, apparent porosity and toluol absorption as well as the obtained mean values.

## Contributors

Persons who contributed to data generation (forename name; forename name; etc.)

Patrick Gehre; Magzhan Kapessov

## Linked experiments

- [PaGe\\_005\\_Pressing\\_MgO-C\\_BiomassPellets\\_120MPa](#)

Processing - [FIKe\\_607\\_3DPrinting-FGF\\_Al2O3\\_FWI-T180-Coast1.0-Prime2.0-InfTriangle](#)

Processing - [PaGe\\_002\\_Mixing\\_MgO-C\\_GraphiteNFL](#)

Testing & Analysis - [FIKe\\_597\\_Mass-Dim-Alloc\\_SilicateCeram\\_RedRoofTile-A24-MWP1035](#)

Testing & Analysis - [FIKe\\_599\\_4PB\\_SilicateCeram\\_RedRoofTile-A24-MWP1035](#)

Testing & Analysis - [FIKe\\_607\\_4PB\\_SilicateCeram\\_RedRoofTile-A25-MWP1050degC](#)

Thermal Treatment - [MaOp\\_426\\_FurnaceRun\\_Various\\_2026-06-22-ElRes-1050degCT](#)

## Linked resource

Device - [Archimedes Density Apparatus \(ArchimedesDensityTester\)](#)



Unique eLabID: 20260803-97a3e1ed65d49f00232a43a8462f9491c2991649  
Link: <http://elabftw.chemie.tu-freiberg.de/experiments.php?mode=view&id=6250>