

Objective:

- mixture of MgO-C with carbonized sunflower seed hull pellets

Experimental setup:

- Weighing with [Device - PT 1200 Sartorius \(PrecisionBalance\)](#) and [Device - QS 16000B Sartorius \(PrecisionBalance\)](#)
- Mixing with [Device - ToniMIX L \(MortarMixer\)](#)
- Mixture:

| Raw Material                           | Note                                       | MgO-C_WP |
|----------------------------------------|--------------------------------------------|----------|
|                                        |                                            | (wt.-%)  |
| MgO 2-4 mm (fused)                     | Fused MgO 98 grade                         | 17.0     |
| MgO 1-2 mm (fused)                     | Fused MgO 98 grade                         | 29.7     |
| MgO 0-1 mm (fused)                     | Fused MgO 98 grade                         | 34.3     |
| MgO powder                             | Sintered MgO 97 grade                      | 16.8     |
| Carbonized sunflower seed hull pellets | -                                          | 1.1      |
| Carbon black N991                      | -                                          | 1.1      |
|                                        |                                            |          |
| Powder resin 0235 DP                   | Binder, based on 100 wt.-% raw materials   | 1.5      |
| Liquid resin 9308-FL                   | Binder, based on 100 wt.-% raw materials   | 1.5      |
| Hexamethylenetetramine                 | Hardener, based on 100 wt.-% raw materials | 0.3      |

Procedure:

As the first mixing step, the coarse MgO fractions were premixed for 3 min. Afterwards, the liquid resin 9308-FL, which was heated up to 70 °C in a temperature control unit was added and mixed for another 2 min. As the last step in the mixing process, MgO powder, carbonized sunflower seed hull pellets, carbon black Thermax N991, powder resin 0235 DP, and hexamethylenetetramine were added and mixed for another 5 min to achieve a homogeneous distribution of the raw materials in the mixture.

Results:

Mixture for further processing.

# 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

**XLSX; 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). The table of the mixture is included in the Documentation folder.**

## Coverage

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

**This experiment did not generate direct raw measurement data.**

## Description

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

**Mixing of raw materials (MgO and carbon) to gain material for pressing**

## Contributors

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

**Patrick Gehre; Magzhan Kapessov**

## Linked resources

Device - [PT 1200 Sartorius \(PrecisionBalance\)](#)

Device - [QS 16000B Sartorius \(PrecisionBalance\)](#)

Device - [ToniMIX L \(MortarMixer\)](#)



Unique eLabID: 20260803-1c6010c99425ce4102b810397b808f775702c9bf  
Link: <http://elabftw.chemie.tu-freiberg.de/experiments.php?mode=view&id=6247>