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Technical Data Sheet for Ceramic Filler

mRefFerro

Description

mRefFerro is a fine powder material produced by the milling of spent refractories originating from the steel industry. The carbon footprint of products can be reduced by using this material from a secondary source, replacing conventional fillers. The material can be functionalised with coupling agents. This material has been developed under the Horizon Project **ReSoURCE** (grant agreement number: 101058310; https://www.project-resource.eu/).

Benefits:

- Reduced carbon footprint through reuse of waste material.

Target application

- As a filler in Paints and coatings (Non colour sensitive areas)
- Sealants and adhesives
- As a filler in general thermoplastic compounding

Physical properties:

Form	Fine powder
Colour	Dark grey (L: 47.73; a: -1.10; b: 1.03)
Average particle size, D_{50} / µm	7
Particles > 20 µm size / %	2.23
Bulk density / gcm^{-3}	0.5
Skeletal density / gcm^{-3}	2.7
Residual moisture content / %	0.97
Specific surface area (BET, N_2, 77K) / m^2g^{-1}	30
Thermogravimetric analysis loss (1000 °C) / %	< 26

Mineral composition:

Mineral	Content (%)	Lit. Hardness (Mohs)
Periclase	35 – 40	6
Graphite	30 – 35	1 – 2
Brucite	15 – 20	2.5 – 3
Corundum	0 – 10	9
Calcite	2 – 5	3
Spinel	0 – 5	8

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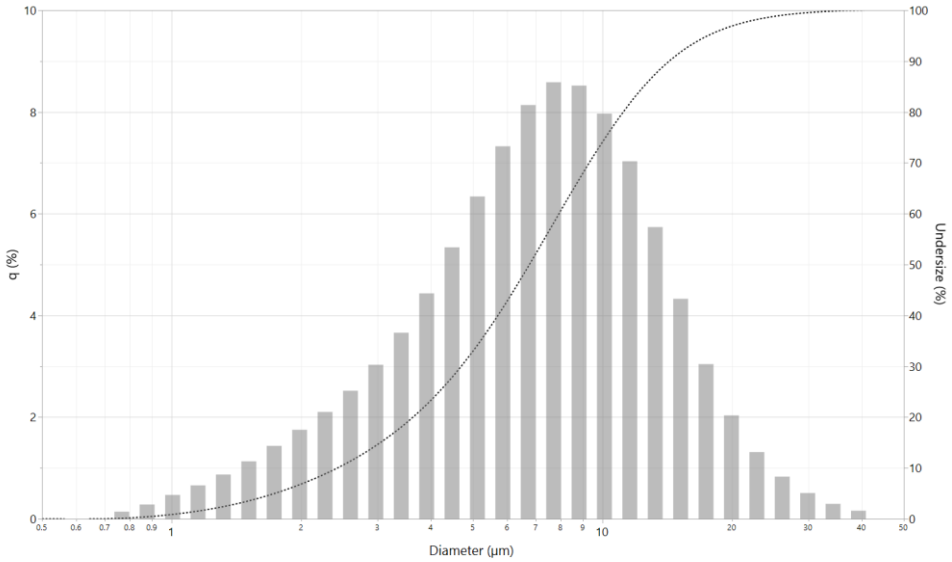
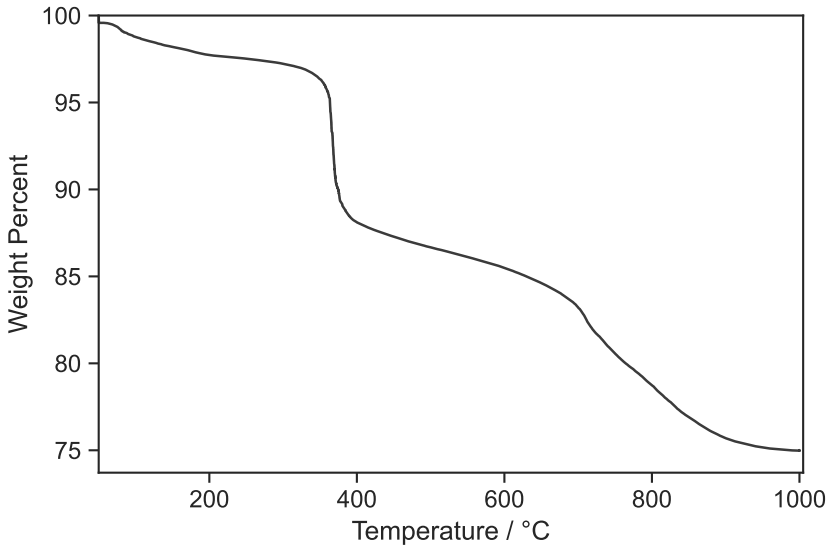
Patricle size distribution:



TGA (air):



Centre for Process Innovation,
The Coxon Building
John Walker Road,
Sedgefield,
County Durham,
TS21 3FE
United Kingdom
www.uk-cpi.com