

SEPR 

ER 120

Electrofused ceramic beads
zirconia silica

Unique properties, unmatched performance

in microgrinding and microdispersion

ER 120:

Recognized excellence in grinding and dispersing media

The **ER 120** line of electrofused ceramic beads is used in grinding and dispersion of many industrial products:

These beads are well known for their outstanding performance in:

- ◆ grinding various fine particles to a specified size distribution,
- ◆ ensuring homogeneous dispersion,
- ◆ enhancing the productivity of the existing equipment,
- ◆ monitoring the operating conditions, for consistent and reproducible formulations,
- ◆ reducing costs through decreased wear on beads and mills, lower consumption of energy, and easier clean-up at change in formulation.

A unique manufacturing process gives **ER 120** the essential qualities needed for all industrial grinding operations:

- ◆ high specific gravity,
- ◆ low wear and high shock resistance,
- ◆ low abrasivity on equipment,
- ◆ advantageous cost/performance ratio.

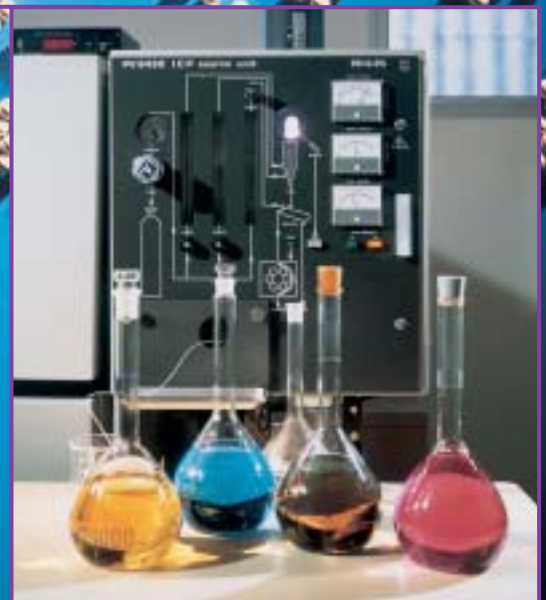
Unmatched physical-chemical characteristics

ER 120 beads are electrofused at very high temperature. As they solidify, they develop a homogeneous and highly cohesive structure. It consists of a crystallized zirconia network surrounded by a vitreous silica phase and gives the beads a high mechanical strength and a smooth surface.

Chemical analysis	ZrO ₂	68%
	SiO ₂	31%
Crystallographic analysis		
	Monoclinic zirconia	68%
	Vitreous phase	32%
Specific gravity		3.8
Bulk volume (kg/l)		2.3
Hardness (Mohs)		7
Crushing strength (beads of 2 mm)		700 N

The contents of this document are given in good faith but without warranty.

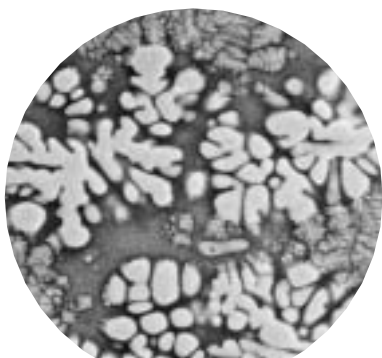
- paints
- inks
- agrochemicals
- magnetic coatings
- mineral fillers
- dyes
- pigments
- cosmetics



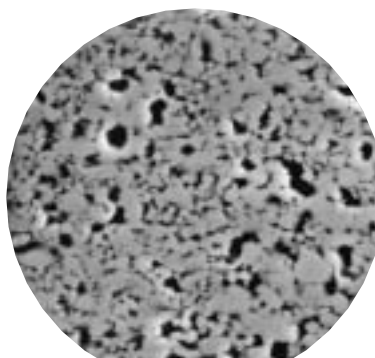
The microstructure of **ER 120** beads is the key to their exceptional performance in service: low and uniform wear, conservation of the smooth surface condition, and low abrasivity for mill parts. By comparison:

◆ sintered ceramic beads with a granular microstructure wear in a progressive loss of grains causing surface roughness, and then abrasivity.

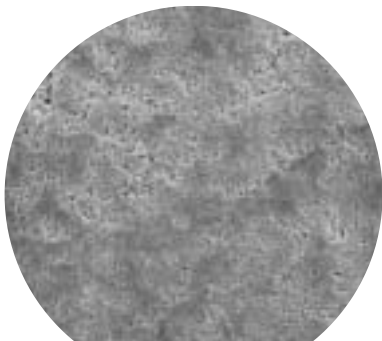
◆ glass beads, which have lower specific gravity, are more fragile and subject to wear, shattering and causing a degradation of the surface condition.



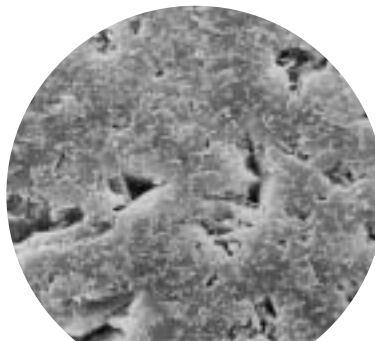
*ER 120 microstructure:
zirconia crystals and glassy phase*



*Sintered zirconium silicate microstructure:
zirconium silicate crystals and porosity*



*Surface condition
after use of ER 120 electrofused beads*



*Surface condition
after use of glass beads*

ER 120 A/S: two grades for different utilizations

ER 120 A, the standard product, is compatible with both horizontal and vertical open mills, especially large volume mills operating at moderate duty.

ER 120 S is specially treated to minimize down time and bring the mill rapidly up to rated performance even under demanding working conditions – high-output pressurized mills, sophisticated separation systems, recirculation, or sensitive formulations.

These two products are available in the following sizes:

Grades A & S (mm)	Grade S only (mm)
–	0.40 - 0.60
0.60 - 1.00	0.60 - 0.80
0.80 - 1.25	0.80 - 1.00
1.00 - 1.60	1.00 - 1.25
1.25 - 2.00	1.25 - 1.60
1.60 - 2.50	1.60 - 2.00
–	2.00 - 2.50

Both grades are produced under a rigorous Quality Assurance system in accordance with technical specifications SEPR n° DS SP BA 11 and DS SP BS 11 for ER 120 A and ER 120 S respectively. The SEPR production facility at Le Pontet, France, has been ISO 9002 certified since 1994.

A commercial network and a research center working to serve customers

A world-wide network of sales offices and distributors responds to customers' needs and provides local technical assistance.

The SEPR Research and Development team is responsible for improving the product line, to meet customers' evolving requirements for new products and processes.

In addition, the Product-Application department of the laboratory provides ongoing technical support and specialist expertise for the ceramic bead market. It develops customized solutions via our sales network.



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