

**SEPR 4**



**Ermil®**

**ceramic beads**

the top of the range from the world's leading producer

# Ermil®

## New ceramic beads to meet the demands of progress

ERMIL® beads are designed to:

- ◆ improve the productivity and lifespan of grinding equipment,
- ◆ reduce operating costs.

The SEPR teams have devoted their energies to developing, producing and marketing the best ceramic beads in the market. They offer both:

- ◆ high performance,
- ◆ competitive price.

ERMIL® beads perform well in the most demanding operating conditions:

- in high energy mills (low volume grinding chamber),
- with formulations sensitive to the presence of particles and increases in temperature,
- in automated workshops where maintenance costs can be reduced to a minimum.

ERMIL® beads extend the familiar ER 120 A and S bead range.

Their most common applications are microgrinding in liquid phase and microdispersion of paints,

agrochemicals, inks, magnetic coatings, dyes, pigments and cosmetics. ER 120 beads have proved their efficiency in horizontal and vertical pressurized mills. They have

also enabled manufacturers to increase production capacities, reduce mill wear and improve the quality of their formulations.

ERMIL® beads present all the basic properties of the ER 120 range and provide major advantages:

- ◆ unnecessary running-in period with new beads,
- ◆ extended uninterrupted operating time (low wear on beads and mills).



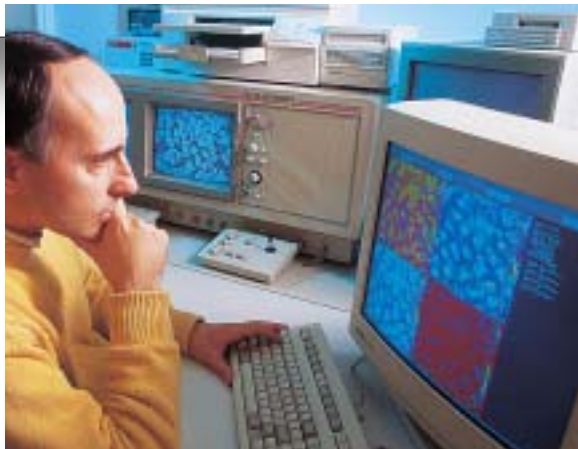
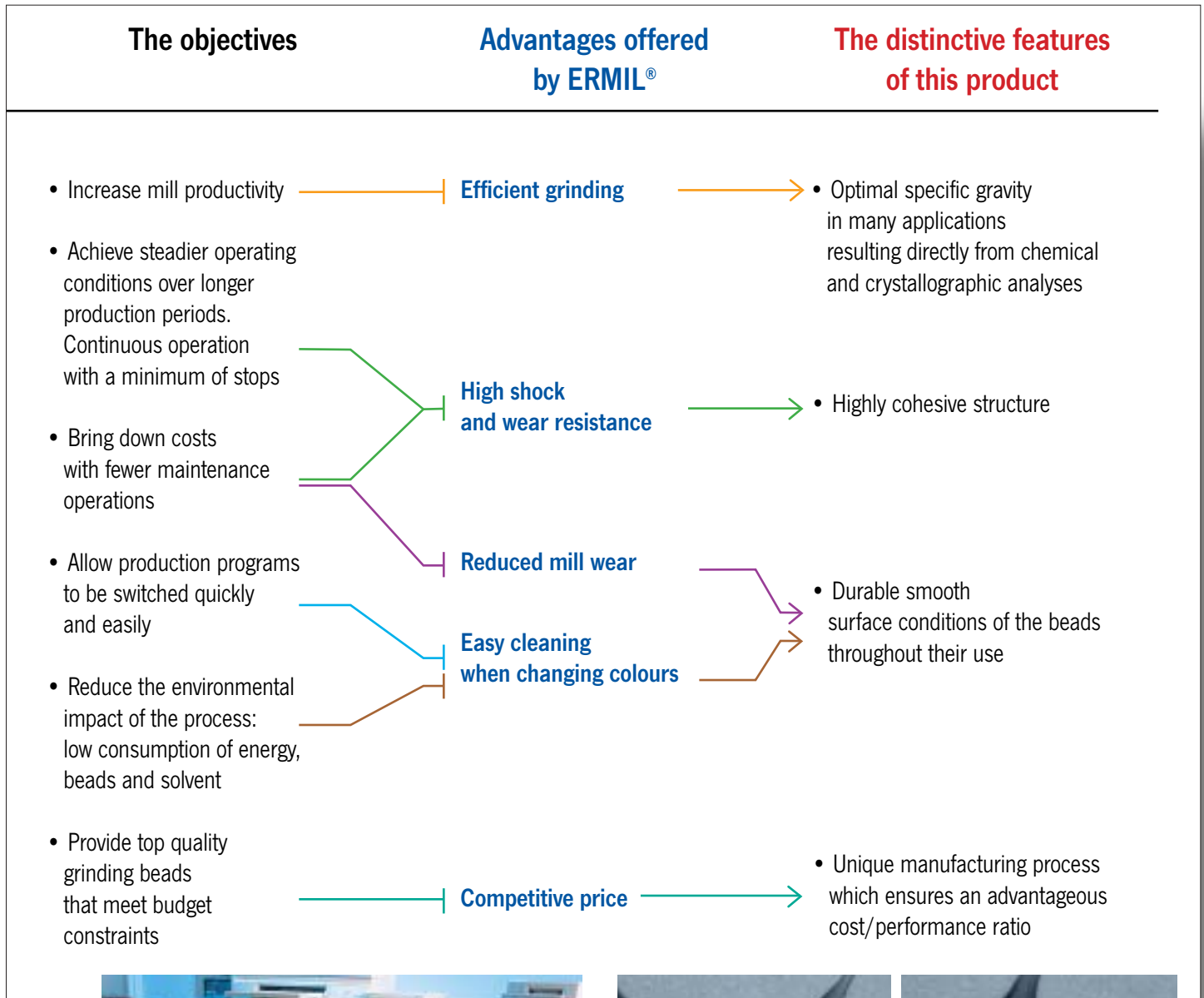
Expert evaluation of a sample of beads by the Product-Applications team



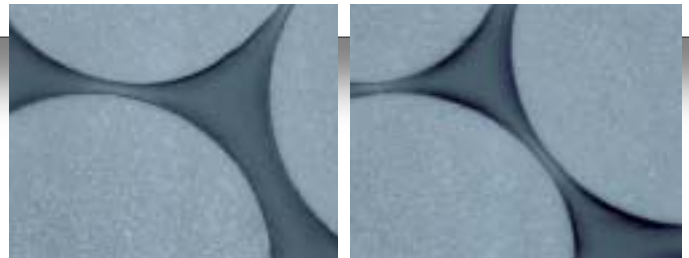
Dimensional inspection of screens used by Quality Control



SEPR's answer to the expectations of industry



Analysis of the internal structure of the beads with an electron microprobe



Surface condition of new (left) and used (right) beads observed on ground sections (magnification X 100)



## The progression of the range

SEPR has an established experience in the field of microgrinding. For many years it has kept abreast of progress in grinding and dispersion techniques and has proposed innovative media. These have enabled the industry to develop new manufacturing processes.

### **A few historical milestones:**

#### 1972

- Research and start of production of the first electrofused ceramic beads.
- First industrial tests on these new high density beads with high resistance to shocks and wear.

#### 1978

- Launch of ER 120 A followed by the international growth in sales for vertical open mills. This grade is still widely used in high volume mills.

#### 1987

- Development and launch of ER 120 S adapted for pressurized mills and sophisticated separation systems.
- ER 120 A and S applications progressively cover all industries using microgrinding techniques.

#### 1998

- A new stage has been reached: the market launch of ERMIL® after successful tests in the most advanced mills.

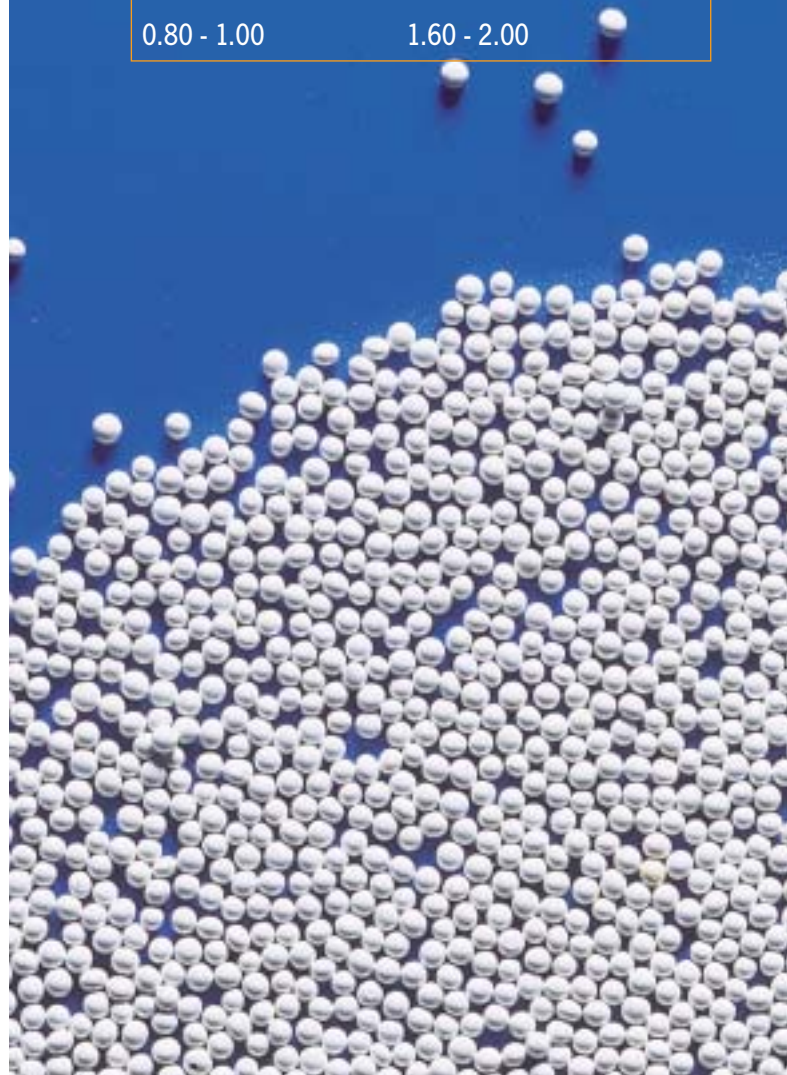
### Characteristics of ERMIL® beads

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

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### Grades available (mm)

0.40 - 0.60	1.00 - 1.25
0.60 - 0.80	1.25 - 1.60
0.80 - 1.00	1.60 - 2.00



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## An original process

The manufacturing of electrofused ceramic beads comprises three stages: the raw materials are electrofused at high temperature, the beads are then shaped and finally various cold finishing treatments are performed before packaging. Quality controls are conducted during each stage of production. For ERMIL®, which has an identical chemical composition to the ER 120, the three stages of the process have been modified to increase the mechanical strength of the beads while maintaining the original qualities of the range: high density, smooth surface and highly cohesive structure.

### SEPR organization: three main assets

◆ The Ceramic Beads and Powders department of SEPR is noted for speed and reliability of supply. The world-wide sales network consists of over 100 agents, sales representatives and distributors ready to listen to customers and make recommendations. It is based on 11 regional agencies with direct links to the multinational Saint-Gobain Group.



Sales Administration Team, the central link between supply and demand

◆ A specialized Product-Applications team draws on the analysis resources of the Research Center. It provides after-sales technical service for ceramic bead applications, offering continuous support and the expertise of specialists to help solve any microgrinding problems experienced by clients.

◆ The production of ERMIL® is carried out under a rigorous Quality Assurance System in accordance with SEPR technical specifications No. DS SP BH 11. The Quality System used by the Le Pontet factory has been ISO 9002 certified since 1994.



Measurement of the grain size distribution in a sample of beads



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