

# Saturn DigiSizer II Applications

## Applications

**Pharmaceuticals** – Particle size plays a major role in the ability to process, blend, tablet, and package a drug substance. The useful shelf life and dissolution rate (governing how rapidly the medicine becomes available to the body) depend upon the particle size of the material.

**Ceramics** – Particle Size information helps to determine curing and bonding procedures, control pore structure, ensure adequate green body strength, and produce a final product of desired strength, texture, appearance, and density.

**Catalysts** – Flow properties of fluid-cracking catalysts depend upon the particle size distribution of the particles. Surface area and pore structure of acid catalysts and catalyst supports result from the particle size distribution of the particles that are used to produce them.

**Paints and Coatings** – The particle size distribution of the pigment or filler influences the porosity, gloss, texture, color, color saturation, brightness, solids content, and film adhesion properties. The resulting porosity can control application properties such as fluidity, drying or setting time, and film thickness.

**Cosmetics** – The appearance, application, and packaging of cosmetics are influenced by the particle size distribution of the base powders, such as talc, and the pigments used in coloring.

**Abrasives** – Performance of abrasives, either in powder form or after being attached to a backing, is dictated by the size distribution of the abrasive powder. Oversized particles lead to scratching and gouging. Undersized particles may lead to clogging of the abrasive papers.

**Mining** – Refining efficiency of materials is related strongly to the particle size distribution of the raw mineral. For products that are used without chemical change, the size of particles taken from the mine may be too large for final usage. Analyses performed on the extracted minerals will help determine the amount of size reduction needed once the product reaches the processing plant.

**Column Packing Materials** – The back-pressure of the packed bed within the column is a direct function of the size of the channels through the bed and, thus, the size distribution of the column packing material. Oversized particles create voids in the bed, reducing efficiency due to remixing of the separated sample components. Undersized particles lead to blockage of flow paths through the bed, increasing the back-pressure and analysis time. A proper distribution leads to greater separation efficiency.

## Saturn DigiSizer II Advantages

- ✓ Superior sensitivity
- ✓ Higher resolution
- ✓ Superior analysis-to-analysis repeatability
- ✓ Greater accuracy
- ✓ Better reproducibility
- ✓ Exceptional data quality
- ✓ Fully automated system
- ✓ Versatile sample handling options
- ✓ Easy-to-use software
- ✓ 21 CFR Part 11 software option
- ✓ IQ/OQ validation service option
- ✓ No proprietary “black-box” algorithms

