

PROGRESS IN THE STANDARDISATION OF PARTICLE AND SURFACE CHARACTERISATION

E. Robens^a, K.-F. Krebs^b, K. Meyer^c, K.K. Ungei^a, A. Dabrowski^a

^a Institut für Anorganische Chemie und Analytische Chemie der Johannes Gutenberg-Universität, D-55099 Mainz, Germany

^b Merck KGaA, LAB CHROM Synthese, D-64271 Darmstadt, Germany

^c Bundesanstalt für Materialforschung und -prüfung (BAM) Division 1.1: Inorganic chemical analysis; reference materials, Rudower Chaussee 5, D-12489 Berlin, Germany

^d Faculty of Chemistry, Department of Theoretical Chemistry, Maria Curie-Skłodowska University, Pl. M. Curie-Skłodowskiej 3, PL-20-031 Lublin, Poland

Particle size and the size and fine structure of the surface of dispersed or porous solids can be measured only indirectly. Because often different yard sticks are used for the measurement the results depend on the measuring method. Therefore, it is necessary to observe strictly to the measuring specifications. Factories store own reference materials for comparison measurements of their products. High demands on pharmaceutical products require expensive validation of the measurements. Scientific and industrial associations as well as in standard text-books definitions and general measuring methods were compiled.

Two routes have been taken to make industrial products more easily comparable and to facilitate the exchange of measuring results:

- standardisation of measuring methods and instruments, and
- certification of reference materials.

Round robin tests using candidate reference materials revealed that surfaces of highly dispersed materials can be affected remarkably during storing and sample preparation. Recently, development and handling of reference materials were discussed at an international conference. Remarkable work for standardising measuring methods for surface area, pore size and particle size is currently underway. Several proposals have been submitted to the International Organisation for Standards (ISO). We published a comprehensive survey in the book of A. Dabrowski (ed.): *Adsorption and its Application in Industry and Environmental Protection*. Vol. 1: *Application in Industry*. Studies in surface science and catalysis, vol. 120 A. Elsevier, Amsterdam 1999, p. 95-116. In the present paper we present a short survey and report on recent developments.