MATERIALS TECHNOLOGIES

MA.TEC.

Abrasion resistance

The ROTAB-AS, rotating cylinder abrasimeter, is an instrument for determining the abrasion resistance of a solid material, either being in a granular or a pellet shape or as a coarse powder, whose size can vary in the range 0,85 - 20 mm. The abrasion regards any solid material.
Over its handling, the solid material can get abraded because of the rubbing of solid pieces against each other or against any mechanical component.This rubbing typically occurs during any kind of transportation, in vessels or pneumatic, while loading any kind of vessels and generally during any handling of the material. It leads to the formation of finer dust and to the consequent loss of, sometimes, precious material or valuable features. The ROTAB-AS instrument allows to evaluate the tendency of solid material to get abraded. The abrasion resistance is a property of utmost importance for the industrial catalysts; it provides meaningful information as to the pharmaceutical tablets and for the industrial processes of coating of materials and for other industrial products (fertilizers, sugar, ceramics,etc.).
ROTAB-AS is based on the ASTM standard norm Nr. 4058-92; it allows to perform a fast and reliable determination of the abrasion resistance of solid materials. A certain amount of the material (usually 100 grams) is rotated at a constant rate for a specified period of time (generally 30 minutes) in a special cylindrical drum. The amount of fines produced during this treatment is determined by sieving (usually through Nr. 20 ASTM sieve, corresponding to 0,85 mm particle size). The final result is expressed as percentage of produced fines with respect to the total mass loaded.

Abrasion loss %= 100 (x-y)/x

where:
x = weight of the material loaded
y = weight of the residual remained on the sieve.

The ROTAB-AS is compliant with the CE specifications. An instruction manual is supplied with the instrument to assure optimum use of the apparatus.
Ma.Tec specialists are at customer's disposal for any problem arising.

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