GRANUCHARGE™

POWDER ELECTRIC CHARGE ANALYZER

ELECTROSTATIC CHARGE MEASUREMENT OF A FLOWING POWDER ON A SURFACE

DESCRIPTION

Electrostatic charges are created inside a powder during a flow. This apparition of electric charges is due to the triboelectric effect, which is a charge exchange at the contact between two solids. During the flow of a powder inside a device (mixer, silo, conveyor, ...), the triboelectric effect takes place at the contact between the grains and at the contact between the grains and the device. Therefore, the characteristics of the powder and the nature of the material used to build the device are important parameters.

PRINCIPLE

GranuCharge instrument measures automatically and precisely the quantity of electrostatic charges created inside a powder during a flow in contact with a selected material. The powder sample flows inside a vibrating V-tube and fall in a Faraday cup connected to an electrometer. The electrometer measures the charge acquired by the powder during the flow inside the V-tube. In order to obtain reproducible results, a rotating or a vibrating device is used to feed the V-tube regularly.

KEY BENEFITS

› High precision (accuracy close to 0.5nC), high repeatability (error close to 4%).

› Measurements are simple, fast and easy to interpret.

› Allows the determination of powder initial charge and after a flow .

› Delivered with intuitive software, the charge is measured through the time. It also allows the comparison of results. All data are automatically collected and stored for post processing.

› Easy data transfer and automatic report generation.

› Closed system for safety requirements.

› Possibility to control the environmental conditions (temperature, humidity, selected gas).

› Recorded standard operating procedures increase the repeatability of measurements.

› Through the simplicity of its design, GranuCharge maximizes uptime. It is made out of modules, each of them can be swapped to avoid extensive diagnostics.

› GranuCharge can handle powders from various dimensions.

› The parts are easy to clean.

DIFFERENTIATORS

› Design and Principle are fully patented and unique.

› The pipes surfaces are exchangeable to investigate all possible materials effect for every application.

› Measurements of the charge density variation through the time.

APPLICATIONS

› Offers the possibility to improve pneumatic vacuum conveying process, with the selection of optimal tubes materials combination. Therefore, it will be possible to avoid particles agglomeration and powder sticking on pipes surface.

› Powders process-ability classification for the galenic formulation.

› Gives information about powders surface properties, therefore the recycling process optimization in Additive Manufacturing becomes accessible.

OPTIONS

› Calibration kit.

› Originally sell with Stainless-Steel 316L pipes, but different materials are available (Glass / HDPE / PVC / Aluminium).

› Standalone software license, one computer run measurements, while another one analyses the data for time optimisation.

GRANU TOOLS™

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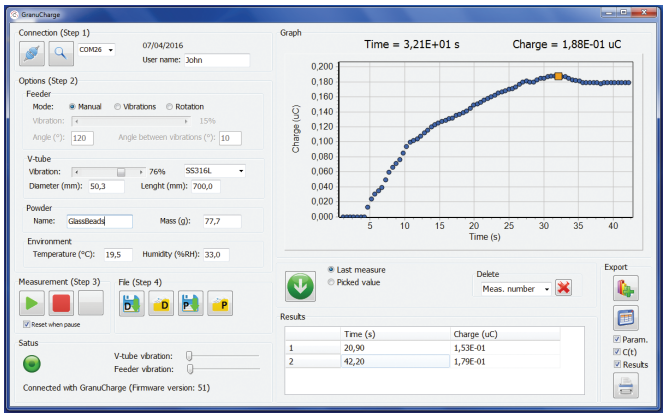
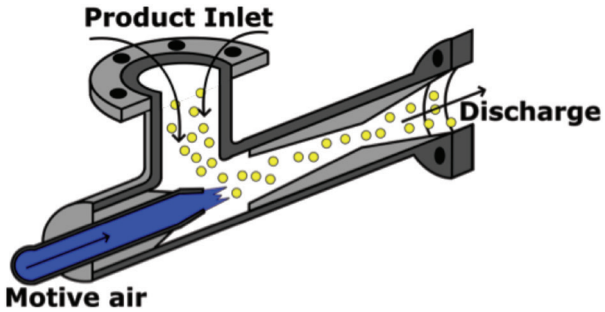
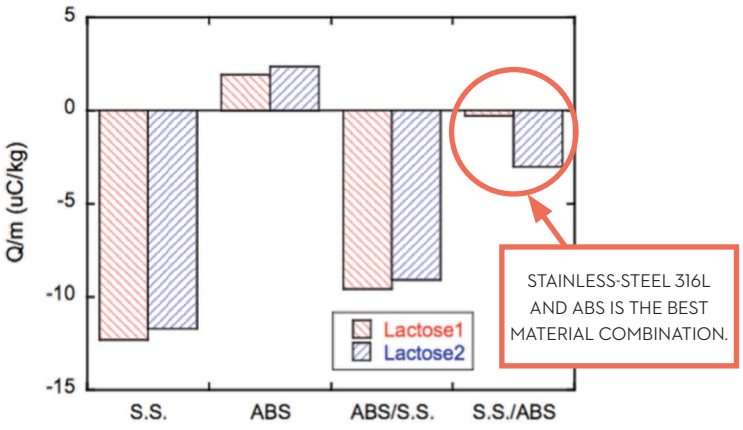
GRANUCHARGE SPECIFICATIONS	
DIMENSIONS LxWxH (mm)	660x460x1015
WEIGHT (kg)	40
MAX RESOLUTION [nC]	0.5
TYPICAL SAMPLE VOLUME (ml)	From 10 to 50
CAMERA	USB 2.0. Monochrome CMOS Camera
COMPUTER REQUIREMENTS	Dual core with 2.0GHz, 4Go RAM, Windows XP to 10 with up to date Service Packs
CONNEXION	USB 2.0 port







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