IKA

designed for scientists

CASE STUDY

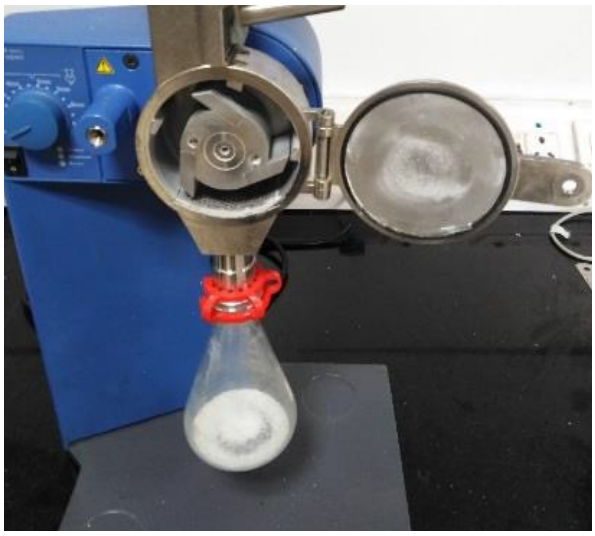
GRINDING OF GLASS VIALS

/// MF 10 basic microfine grinder drive

CASE STUDY

Glass containers are a very essential and critical commodity for the pharmaceutical industry especially for storage of drugs, vaccine and other pharmaceutical products. The container provides a varying degree of protection, depending on the nature of the product and the hazard of the environment, as well as reduces the loss of its constituents. The container should not react with the content in such a way that it alters its quality beyond the official requirement. Thus, the quality and the composition of the glass containers are of critical importance to pharmaceutical companies. Consequently, the quality department rigorously tests the glass containers to ensure they meet the regulatory standards.

MF 10 basic microfine grinder drive
MF 10.1 cutting-grinding head



THE PROCESS

One of India's leading manufacturer of vaccine was looking at performing glass grain tests. The glass grain tests were performed by the Quality Control (QC) team to measure the hydrolytic resistance of glass which will enable them to determine the glass type. The hydrolytic resistance is determined by titrating released alkali. There are mainly 3 types of glass: Type 1, neutral glass with a high hydrolytic resistance; Type 2, usually of soda-lime silica glass with high hydrolytic resistance resulting from suitable treatment of the surface; and Type 3, usually of soda-lime silica glass with moderate hydrolytic resistance.

To conduct a hydrolytic resistance test, the QC department needs to crush the containers into certain particle size, pass it through a sieve and then wash the collected sample multiple times with acetone. After cleaning and drying the grains at 140°C the team performs a titration to quantify the amount of alkali present in the glass. The lesser quantity of alkalis present in glass grains, the more is the hydrolytic resistance of the glass containers.

THE SOLUTION

IKA India's state-of-the-art application lab used, MF 10 basic microfine grinder drive with MF 10.1 cutting-grinding head and MF 2.0 sieve to grind the glass vials. After loading the glass vial sample in the device the sample was grinded at a low speed to reach a consistent and fine output. The processed sample was collected in a collector flask.

IKA ADVANTAGE

MF 10 grinder is ideal for grinding glass samples because of its following advantages:

> Glass containers can be grinded uniformly
> Reduces loss of sample
> Less contamination of sample
> Ease of operation, as it is better suited than using mortar-pestle crushing
> Continuous operation reduces processing time
> Easy cleaning process
> Speed range of 3.000 – 6.500 rpm
> Two grinding heads for different samples available

IKA India Private Limited
814 / 475, Survey No. 129 / 1 Mysuru Road,
Kengeri, Bengaluru 560060, Karnataka, India
Phone: +91 80 26253 900, Fax: +91 80 26253 901
Free Hotline: 1800-42-555-444, e-Mail: applicationsupport@ika.in

www.ika.com

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