BOMBAY PHARMA
EQUIPMENTS PVT. LTD

RAPID MIXER GRANULATOR (RMG)

Rapid Mixer Granulators (RMGs) are widely used in the pharmaceutical industry for the wet granulation process. They combine mixing, granulation, and drying into a single unit, facilitating the production of uniform and homogeneous granules. Here's an overview of the utilization of a Rapid Mixer Granulator and its associated process:

Loading:

The powders or granular materials, including active pharmaceutical ingredients (APIs), excipients, and binders, are loaded into the Rapid Mixer Granulator. The materials are typically pre-mixed to ensure an even distribution.

Mixing:

The Rapid Mixer Granulator is set in motion, and the impeller, equipped with blades, starts rotating at a high speed. The rotation generates a powerful radial and axial flow, causing the materials to mix thoroughly. The impeller's design promotes effective blending and prevents the formation of dead zones.

Wet Granulation:

Once the dry mixing is complete, a liquid binder solution is added to the mixture through spray nozzles. The binder solution may contain water or other solvents. The liquid binder facilitates particle adhesion, forming granules. The wet mass agglomerates as the liquid binder wets the particles and creates cohesive bonds.

Granule Growth:

During the wet granulation process, the impeller blades break down any oversized particles and promote uniform wetting and granule growth. The granules increase in size and become more spherical as the wet mass continues to agglomerate.

Drying:

After the desired granule size and moisture content are achieved, the drying process begins. Hot air is introduced into the Rapid Mixer Granulator through an inlet. The drying air removes moisture from the granules, reducing their moisture content to the desired level. The drying process is facilitated by the impeller's rotation and the unique design of the Rapid Mixer Granulator, which promotes efficient heat and mass transfer.

Final Mixing:

Once the granules reach the desired moisture level, the drying air is turned off, and the impeller continues rotating. The granules undergo a final mixing stage, where they are further homogenized and cooled down to ambient temperature.

Discharge:

The granulated and dried material is discharged from the Rapid Mixer Granulator through a discharge chute or valve. The discharged granules can then be further processed, such as milling or tableting, as per the specific requirements of the formulation.

Cleaning and Maintenance:

After use, the Rapid Mixer Granulator is thoroughly cleaned to remove any residual material and ensure proper hygiene. Routine maintenance tasks, such as inspecting impeller blades, cleaning filters, and lubricating moving parts, are also performed as needed.

It is important to note that the specific utilization and process of a Rapid Mixer Granulator may vary depending on the manufacturer, model, and the specific requirements of the wet granulation process. However, the integration of mixing, wet granulation, and drying in a single unit makes Rapid Mixer Granulators an efficient and versatile equipment to produce high-quality granules in the pharmaceutical industry.

Technical Specifications Table:-

GROSS CAPACITY (LTRS)	WORK CAPACITY (LTRS)
25	20
100	80
150	120
250	200
400	320
600	480
1000	600