Professional
Powder Equipment
Manufacturer

Powder Equipment
Milling Technology
Powder Materials

TENCAN

Product Brochure

MIXED SERIES

Non invasive material homogenizer

TCMC

Non-invasive homogenizer homogenizes and deaerates high-viscosity materials (adhesives, inks, slurries) via centrifugal force, vacuum, and compound motion, ensuring no cross-contamination.

Product Overview

Non-invasive homogenizer homogenizes and deaerates high-viscosity materials (adhesives, inks, slurries) via centrifugal force, vacuum, and compound motion, ensuring no cross-contamination.

Product Introduction

Non-intrusive material homogenizer It is an efficient equipment that achieves material homogenization and defoaming through centrifugal force, vacuum system and compound motion. Its core design adopts a composite motion mode that combines "revolution" and "rotation", combined with vacuum degassing technology, and is suitable for dispersing, mixing and air bubble removal of high-viscosity materials (such as adhesives, inks, slurries, etc.). This equipment does not require direct contact with materials, and uses the synergy of centrifugal force and vacuum to complete processing to avoid cross-contamination. It is widely used in laboratories and industrial production.

Grinding Series

Non-contact Material Homogenizer

Single or Dual Cups Available

Single or dual cup options

Multi-stage Parameter Settings

Wide Range of Adapters

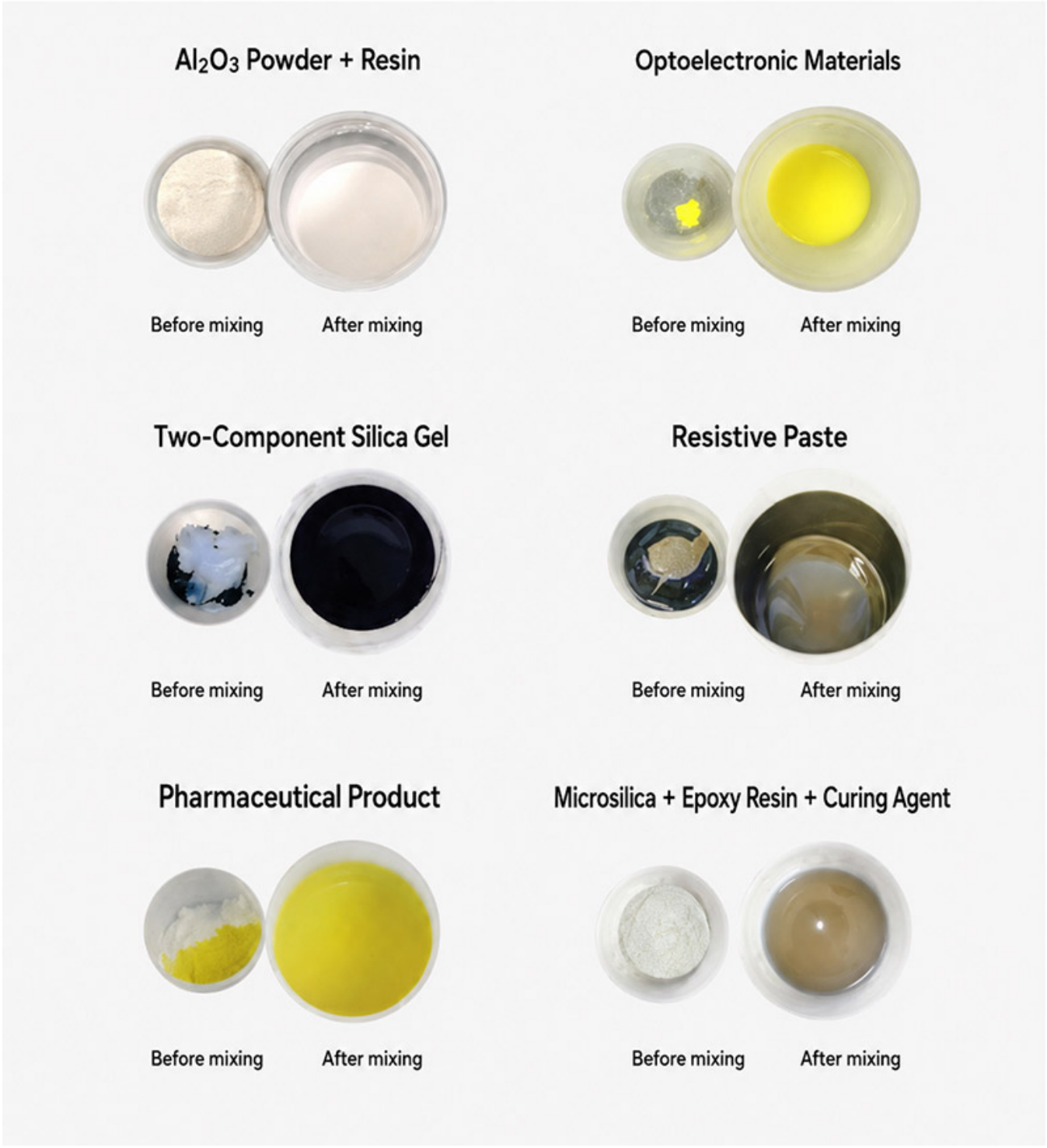
Wide Range of Applications

Suitable for R&D and Mass Production

No Image
Available

Grinding Series

Homogenizer Effect Comparison



Non-intrusive homogenizers are mainly used in the following fields:

1. **High viscosity material handling** : Such as homogeneous dispersion of adhesives, coatings, and inks, eliminating bubbles and particle agglomeration in materials.

2. **Pharmaceuticals and Medical** : Homogenization and defoaming of drug suspensions, liposomes, and injections to improve drug stability and bioavailability.
3. **New energy and electronic industry** : Uniform mixing of battery slurry, conductive adhesive and other materials to ensure product performance consistency.
4. **Food and Cosmetics** : Homogenization of emulsions and pastes to improve texture and stability.
5. **Scientific research experiments** : Rapid dispersion and deaeration of laboratory-grade small batch samples.

Technical parameters

Device name	Non-intrusive material homogenizer		
Product model	**TCMC-180HV**	**TCMC-200V**	**TCMC-350VS**
use	Mixing industrial adhesives, metallic or non-metallic slurries	Mixing industrial adhesives, metallic or non-metallic slurries	Mixing industrial adhesives, metallic or non-metallic slurries
Configuration	Container capacity: 350ml, single cup Actual material handling capacity: 120ml, planetary mixer Maximum material handling weight: 150g, planetary mixer	Container capacity: 350ml, single cup Actual material handling capacity: 175ml, planetary mixer Maximum material handling weight: 200g, planetary mixer	Container capacity: 350ml*2 cups Actual material handling capacity: 175ml*2 cups, planetary mixing Maximum material handling weight: 250g*2 cups, planetary mixing
set up	Multi-segment parameter group, 0-8 groups (can be set)	Multi-segment parameter group, 0-8 groups (can be set)	Multi-segment parameter group, 0-5 groups (can be set)
operate	touchscreen	touchscreen	touchscreen
Speed	130-3600RPM, actual motor speed	130-2000RPM, actual motor speed	Revolution:130-3000RPM; Rotation: 130-3000RPM, both are actual motor speeds
Protect	Door cover, vibration, overload, vacuum leakage, emergency stop	Door cover, vibration, overload, vacuum leakage, emergency stop	Door cover, vibration, overload, vacuum leakage, emergency stop
vacuum	7.2m³/h, about -99kpa (relative to 0 meter altitude)	7.2m³/h, about -99kpa (relative to 0 meter altitude)	20m³/h, about -100kpa (relative to 0 meter altitude)
Specification	L585*W405*H630mm	L585*W405*H650mm	L730*W510*H800mm
power supply	Single phase, AC220V, 50Hz; Power: 1.5KW	Single phase, AC220V, 50Hz; Power: 1.5KW	Single phase, AC220V, 50Hz; Power: 1.75KW
weight	About 80kg	About 80kg	About 135kg
Accessories	6 standard plastic cups (350ml); Transmission belt: 1 piece	6 standard plastic cups (350ml); Transmission belt: 1 (spare)	Standard plastic cups (350ml), 6 pieces, weight 250g

Device name	Non-intrusive material homogenizer		
Product model	**TCMC-580HV**	**TCMC-700VS**	**TCMB-4000VS**
use	Mixing industrial adhesives, metallic or non-metallic slurries	Mixing industrial adhesives, metallic or non-metallic slurries	Mixing industrial adhesives, metallic or non-metallic slurries
Configuration	Container capacity: 1000ml*1 cup Maximum material handling weight 500g, planetary mixing	Container capacity: 700ml*2 cups Actual material handling capacity: 350ml*2 cups, planetary mixing Maximum material handling weight: 500g*2 cups, planetary mixing	Container capacity: 1500ml*2 cups Actual material processing capacity: 750ml*2 cups, planetary mixing Maximum material handling weight: 2kg*2 cups, planetary mixing
set up	Multi-segment parameter group, 0-8 groups (can be set)	Multi-segment parameter group, 0-5 groups (can be set)	Multi-segment parameter group, 0-5 groups (can be set)
operate	touchscreen	touchscreen	touchscreen
Speed	100-2700RPM	Revolution:130-3000RPM; Rotation: 130-2000RPM, both are actual motor speeds	Revolution:150-1440RPM; Rotation: 150-1440RPM, both are actual motor speeds
Protect	Door cover, vibration, overload, vacuum leakage, emergency stop	Door cover, vibration, overload, vacuum leakage, emergency stop	Door cover, vibration, overload, vacuum leakage, emergency stop
vacuum	20m³/h, about -100kpa (relative to 0 meter altitude)	20m³/h, about -100kpa (relative to 0 meter altitude)	28m3/h; About -100kpa (relative to 0 meters altitude)
Specification	L700*W500*H770mm	L730*W510*H790mm	L880*W625*H850mm
power supply	Single phase, AC220V, 50Hz; Power: 2.3KW	Single phase, AC220V, 50Hz; Power: 1.8KW	Three-phase five-wire, AC380V, 50Hz; Power: 4KW
weight	About 115kg	About 130kg	About 210kg
Accessories	Standard plastic cups (1000ml), 6 pieces;	Standard plastic cups (700ml), 6 pieces, weight 500g	Standard plastic cup (1500ml), 6 pieces, 2kg weight

Working Principle

This machine uses planetary transmission (revolution + rotation) to exert a centrifugal force equivalent to hundreds of weights of the material itself on the material in the cup (or carrier). Combined with the combination of the revolution and rotation to knead the material, it ultimately achieves rapid uniformity of multi-component materials.

Due to the powerful centrifugal force of the machine itself, the bubbles inside the material are squeezed out of the body by this force. This is supplemented by vacuum to achieve the function of quickly removing bubbles from the material.

- **revolution motion** : The carrier rotates around the central axis of the equipment at high speed, generating centrifugal force to squeeze the material downward and discharge the internal air bubbles.
- **rotational motion** : The carrier itself rotates at high speed, and cooperates with the revolution to form a vortex flow, which enhances the mixing effect.
- **defoaming stage** : The vacuum system forms a negative pressure in the cavity, completely extracting the bubbles squeezed to the surface by centrifugal force, while reducing the risk of material oxidation.
  Through the above composite effect, the material can be evenly dispersed and bubble-free in a short time.

Product Features

- **Composite motion design** : The speed of revolution and rotation can be adjusted independently, which can adapt to the processing needs of materials with different viscosities and achieve efficient mixing and deaeration.
- **Vacuum degassing technology** : Quickly extract air bubbles through the vacuum system (-99kPa to -100kPa) to improve material density.
- **Temperature rise control** : Optimize motion parameters to reduce frictional heat generation and avoid the impact of high temperature on heat-sensitive materials.
- **Strong compatibility** : Supports various material types such as liquid, solid, powder, viscous liquid, etc.
- **Easy to operate** : Equipped with human-computer interaction interface, supports multi-parameter programming and simplifies the operation process.
- **Easy to clean and maintain** : Modular design, contact parts are easy to disassemble and clean, and comply with hygiene standards.

Accessories & Customization

Accessories

Grinding jars, heating elements, sample holders, control modules and other matching accessories can be selected according to the product configuration.

Customization

For voltage, capacity, chamber size, process temperature or application requirements, please contact TENCAN for a suitable configuration.