



Vacuum Mixing & Degassing

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Introduction

The **THINKY ARE-250** is a planetary mixing machine. By means of both rotation and revolution of the material in a container, materials are mixed and degassed. The materials are under an acceleration of 400G, and even materials of very high viscosity can be mixed and deaerated or degassed at the same time.



The **THINKY ARE-250** delivers extremely good results, with consistent, homogeneous mixes. Unlike hand mixing, the process does not add air into the material, and the machine includes a separate degassing mode - for a bubble-free outcome.

Conventional Vacuum Degassing

Sometimes, for very high viscosity materials or materials for which a high degree of deaeration is required, further degassing may be required. The issues with this are:

- Another step: place material in vacuum equipment after mixing
- Manually controlled process, with attention needed to ensure material does not foam or overflow from the container
- Additional time

Adding Vacuum to the Mixing Process

The **THINKY ARV-310P**, **THINKY ARV-501**, **THINKY ARV-930Twin**, **THINKY ARV-5000**, and **THINKY ARV-10KTwin** are mixing and degassing machines like the **THINKY ARE-250**, but with an integral vacuum.

Normal vacuum degassing after mixing



Caution must be taken to prevent foaming and messy overflows when manually degassing using vacuum

Rotation, revolution & vacuum mixing



Materials don't overflow because they are pressed to the side wall of the container during the simultaneous mixing procedure

Mixing and degassing are achieved simultaneously, in a hands-free fully automated and repeatable process. There is a very high degree of deaeration.

Comparison of THINKY ARE-250 and THINKY ARV-310P

Resin samples are mixed in each of the two machines, then:

- a) Placed in a vacuum chamber at 0.7kPa to see if any bubbles appear
- b) Allowed to cure and inspected under magnification.

THINKY ARE-250

Mixing mode: 2000rpm for 1 minute + Degassing mode: 2200rpm for 18 minutes



After mixing, some bubbles appear under vacuum



Some 100μm micro-bubbles are visible in cured resin
100x magnification

THINKY ARV-310P

Mixing mode: 2000rpm with 0.7kPa for 5 minutes



After mixing, no bubbles are observed, even when placed in a vacuum chamber



No bubbles are observed in cured resin
100x magnification

Conclusion

The **THINKY ARE-250**, with its twin mixing and degassing modes, gives fast, efficient and homogeneous mixing of many high technology materials. For ultra-critical applications, where even micro-bubbles cannot be tolerated, the **THINKY ARV-310P** or other vacuum mixer model should be considered.

THINKY ARE-250 Mixing and Degassing Machine

- For highly viscous materials, materials with various densities, or dry particle mixing
- Simultaneous process of dispersion and degassing in one batch
- Process in seconds to minutes
- Process in your containers such as jar, barrel, cartridge, syringe or tube
- Remove voids and re-disperse filled materials packed in syringes
- Non-invasive processing ends the risk of cross contamination between batches
- Process from 0.5ml – save valuable material wastage
- Re-mixing of separated materials to prolong shelf life
- Vacuum-less processing, degassing and de-aeration
- No damage to material unlike the use of rollers, mixing blades or propellers
- No unit cleaning between batches eliminates non-productive work

Applications include: formulate and mix adhesives, sealants, moulding compounds, lubricants, slurries, coatings, inks, paints, abrasives, bio chemicals, cements, medical compounds, cosmetics/personal care materials, detergents, conductive pastes, dental materials, foods, construction materials or any other materials which are hard-to-mix, hard-to-degas, or hard-to-wet.

THINKY ARV-310P Mixing and Vacuum Degassing Machine

- Fast mixing
- Degas and remove bubbles at the same time
- Mix in your product container incl. syringe degassing
- Non-invasive
- From low viscosity to semi-solid materials
- Dry particle mixing
- No cleaning between batches
- Consistent quality with all digital controls
- Multi-step mixing
- Hands-free processing
- CE marked

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