

THINKY Datasheet

Ceramic and Water Mixing Time - 2 minutes

[**Materials**] Barium Titanate (BaTiO_3) and tap water

[**Capacity**] Total 150g

[**Density**] Barium Titanate - 6.02 g/cm³

[**Material Ratio**] Ceramic volume 10% for water

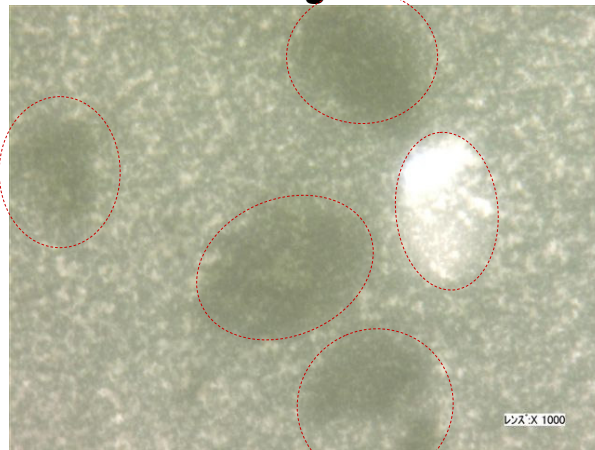
[**THINKY Mixer**] Vacuum-less ARE-250

[**Mixing results**] Compare the magnified pictures

[**Benefits of THINKY**] End quality variety by digital control, terminate human error, Yield improvements, product quality improvements, Handle 0.5g to 10kg by models, NO cross contamination with the use of disposable mixing cup, Hands-free operation, easy operation that everyone can handle.

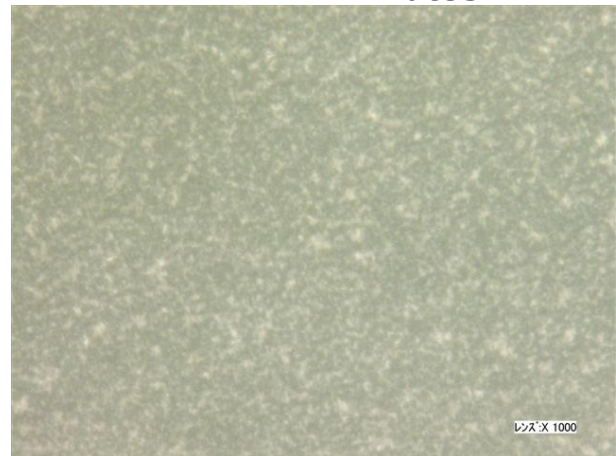
[**Mixing ideas – Could be applied to your materials**] The use of grinding media in the process, Re-dispersion of separated materials, removal of introduced air in syringe or cartridge keeping the dispersion

Hand Mixing - 2 minutes



Agglomerations are in circle (x1000)

THINKY - 2 minutes



NO agglomerations can be observed. Powder dispersed evenly through water (x1000)

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Try the mixer today - THINKY offers risk-free trials to all customers.
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- **FREE demonstration in your office**
- **FREE 5 days trial**
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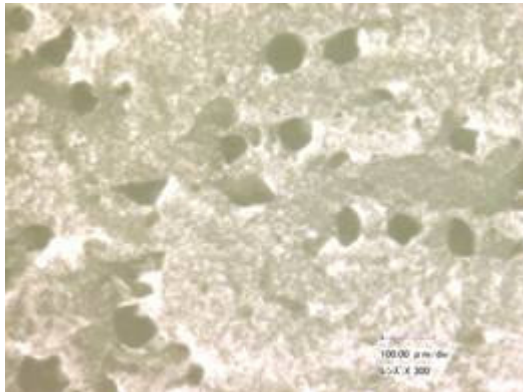


THINKY Datasheet

Nano Ceramic and Water (High Loaded - 70 Volume %) Mixing Time - 3 minutes

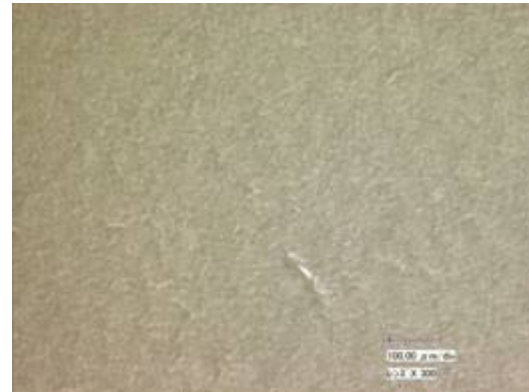
- [**Materials**] Aluminum oxide (Al₂O₃), dispersing agent, and tap water
- [**Particle Size**] Aluminum oxide 0.5 μ m
- [**Density**] Aluminum oxide - 3.97g/cm³
- [**Capacity**] Total 120g
- [**Material Ratio**] Ceramic volume 50% and 70% for water
- [**THINKY Mixer**] Vacuum-less ARE-250
- [**Mixing Results**] THINKY produces homogeneous mixture quickly.
- [**Benefits of THINKY**] End quality variety, terminate human error, yield improvements, product quality improvements, Super quick

Hand Mixing - 3 minutes



50 V% - Observe agglomerations (x300)

THINKY - 3 minutes



70 V% - All particles were dispersed evenly. (x300)



70 V% - Too thick to mix by hand. (x100)

White spots show
space in solid

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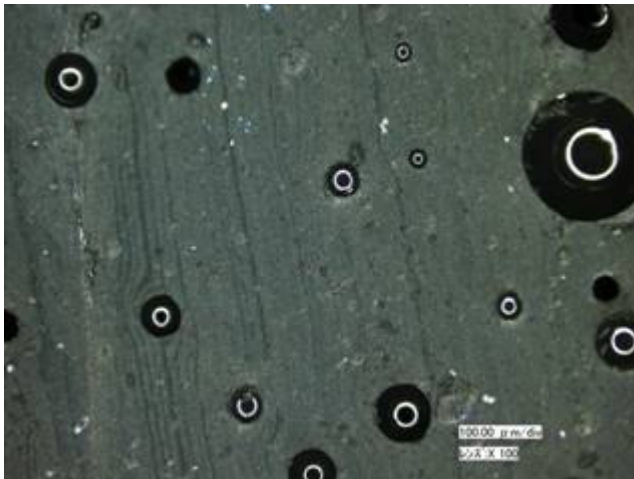


THINKY Datasheet

Nano Carbon Black and Silicone Mixing Time - 1 minutes

- [**Materials**] Carbon Black, 2 part silicone
- [**Particle Size**] Carbon Black 75 μ m
- [**Capacity**] Total 120g
- [**Material Ratio**] Carbon Black 40% by weight
- [**THINKY Mixer**] Vacuum ARV-310 / Vacuum-less ARE-250
- [**Mixing Results**] THINKY produces homogeneous mixture quickly.
- [**Benefits of THINKY**] End quality variety, terminate human error, yield improvements, product quality improvements

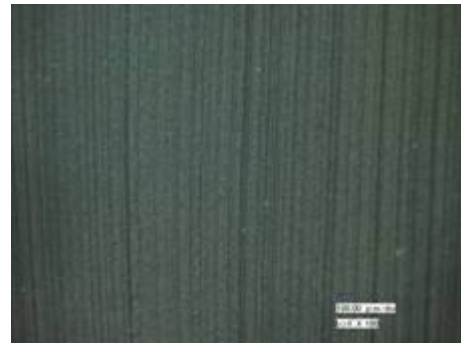
Hand Mixing - 5 minutes



There are large and many air bubbles and agglomerations of carbon. (x100)

*** Vertical line of each picture was made by knife that the cured silicone is cut with.**

THINKY - 1 minutes (model# ARV-310)



There is NO air bubble and agglomeration. (x300)

THINKY - 7 minutes (model# ARE-250)



There is NO air bubble and agglomeration. (x300)

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THINKY Datasheet

2 Part Epoxy (in extreme viscosity difference) THINKY Mixing Time - 20 Seconds

[**Materials**] 2 part epoxy (Henkel Hysol EA 9309.2NA Part A&B ·Structural paste adhesive)
* HYSOL is registered trademark of Henkel Corporation.

[**Capacity**] Total 150g

[**Viscosity**] Part A:3000-6000 poise, Part B : 0.3-0.7 Poise
(highly viscous paste and water like epoxy)

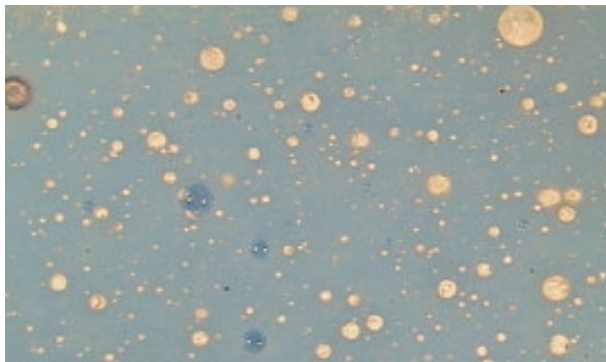
[**Material Ratio**] Part A: 100, Part B: 22 by weight

[**THINKY Mixer**] Vacuum-less ARE-250

[**Mixing results**] Compare the magnified pictures

[**Benefits of THINKY**] End quality variety by digital control, terminate human error, Yield improvements, product quality improvements, Productivity improvement.

**Hand Mixing 5 minutes, plus
Vacuum degassing – 20 minutes**



Part A and B cannot be mixed well for their extreme differences on viscosity. Mixing introduced air into the adhesive.

THINKY – 20 seconds



Part A and B mixed well. NO air bubbles can be observed. Material performance improved **15 %** on lap shear testing.

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THINKY Datasheet

2 Part Epoxy THINKY Mixing Time – 3 minutes

[**Materials**] 2 part epoxy (Henkel Hysol EA 9394 Part A& B – Structural paste adhesive)

* HYSOL is registered trademark of Henkel Corporation.

[**Capacity**] Total 150g

[**Viscosity**] Part A:4000-8000 poise, Part B : 200-700 Poise

[**Material Ratio**] Part A: 100, Part B: 17 by weight

[**Curing**] Room temperature cure

[**THINKY Mixer**] Vacuum-less ARE-250

[**Mixing results**] Compare the magnified pictures

[**Benefits of THINKY**] End quality variety by digital control, terminate human error, Yield improvements, product quality improvements, Handle 0.5g to 10kg by models, Super quick formulation

Hand Mixing – 5 minutes, plus Vacuum degassing – 20 seconds



Air trapped in the mix could not be removed in the vacuum degassing process. Rough surface for air bubbles.

THINKY – 3 minutes



NO holes made by air bubbles on surface. Surface is smooth. Material performance improved 6 % on lap shear testing.

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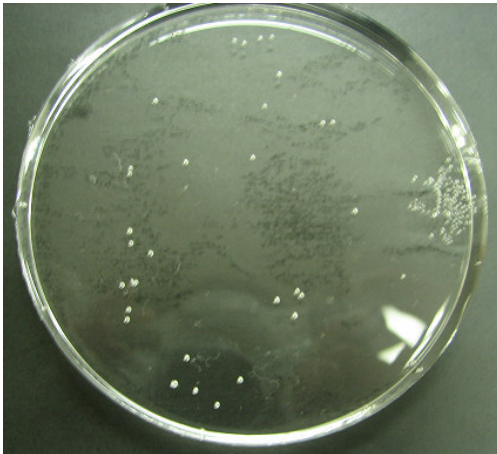
THINKY Datasheet

2 Part Silicone

THINKY Vacuum Mixing Time – 3 minutes

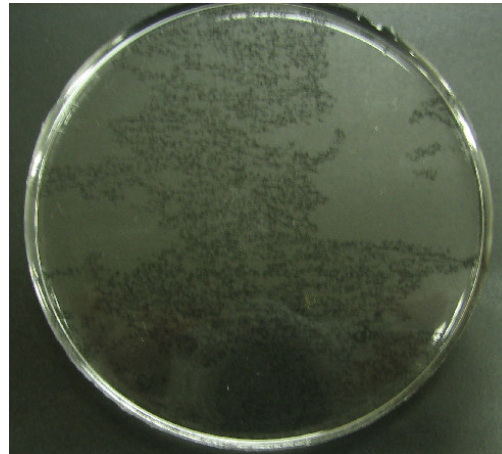
- [**Materials**] 2 part silicone potting compounds
(SYLGARD®184 Base, SYLGARD®184 Curing Agent)
* SYLGARD is registered trademark of Dow Corning Corporation.
- [**Capacity**] Total 99g
- [**Viscosity**] Base : Part A:4000-8000 poise, Part B : 200-700 Poise
(highly viscous paste and water like epoxy)
- [**Material Ratio**] Base : 90g, Curing Agent : 9g
- [**Curing**] Heat curing
- [**THINKY Mixer**] Vacuum-less ARV-200
- [**Mixing results**] Compare the cured sample
- [**Benefits of THINKY**] Significant degassing level improvement

Hand Mixing – 3 minutes



Air trapped in the mix.

THINKY – 3 minutes



There is NO air bubbles.

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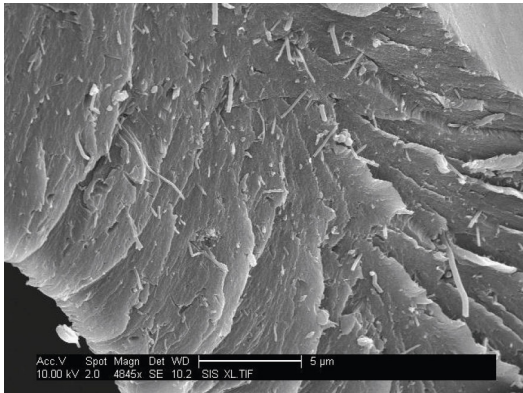


THINKY Datasheet

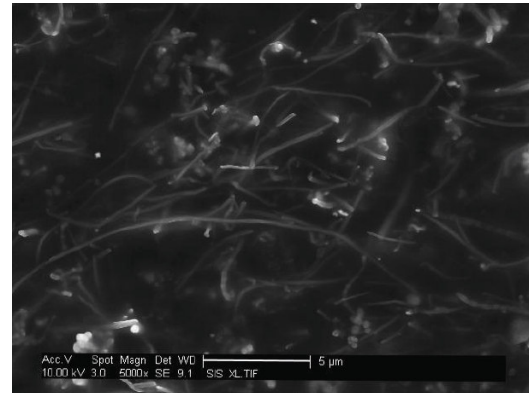
Carbon Nano Fiber and Epoxy Mixing Time – 15 minutes

- [**Materials**] Carbon Nano Fiber and Epoxy
- [**Capacity**] Total 150g
- [**Material Ratio**] Fiber volume 10% for epoxy
- [**THINKY Mixer**] Vacuum-less ARE-250
- [**Mixing results**] Compare the magnified pictures
- [**Benefits of THINKY**] Ends time consuming process, no cleaning, no-cross contamination

Sample 1



Sample 2



Carbon Nano Fiber can be dispersed into viscous epoxy evenly.
(Pictures are provided by Metal Matrix Inc.)

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