# Thinky ARE-310 Mixer

Haley Holcomb 9/13/22

| Thinky ARE-310 Mixer | |
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| **Tool Type:** PDMS | |
| **Location:** mFL 3430 | |
| **Supervisor** | **Tool Lead** |
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| **Description:** PDMS tool | |
| **Manufacturer:** Thinky | |

## About

The Thinky Mixer is one of the PDMS tools in the Microfluidics lab. This machine is used for mixing and de-aerating the elastomers that are used in fabrication of microfluidic devices. The mixing time and revolution speed of the device can be programmed using the machine’s controller interface.

## Detailed Specifications

- 310g capacity
- Centrifugal force of over 400G
- Cold-insulated, heat-resistant adapter enables support of various material characteristics
- Memory and step-operation functions for controlling and executing operating condition
- 2 modes of mixing and deaeration achieve dispersion and deaeration of high-viscosity materials in a small amount of time

## Safety Concerns

Goggles, gloves, a lab coat, long pants, and close-toed shoes should be worn while operating this

machine. Long hair should be tied back. Review Sylgard 184 resin SOP before handling.

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# Operating Procedures

The STD recipe works well for mixing Sylgard 184 resin. It should be programmed for 30 seconds of mixing at 2000 RPM and 30 seconds of defoaming at 2200 rpm. Please do not change this recipe.

**Operation mode**: If you would like to use different settings please use the STEP mode. Stepwise mode allows access to multiple steps of operation and enables the user to vary the revolution speed, while standard mode only allows for variation of mixing time within one step. You can switch between these modes using the MODE button. Each step of operation can have one or two sub-steps - mixing and, possibly, defoaming. The MIX and DEFOAM LEDs highlight the sub-step for which the time and revolution speed are being displayed.

**Changing Operating Conditions:** To change the time and revolution speed for your process,

1. Navigate to the step that you want to alternate using the STEP button. The current step number is displayed on the step LED's. Usually, processes only use the first step (mixing and defoaming constitute one step).
2. Use the SETUP button to cycle through the editable fields for that step - these are, in order of appearance, time of mixing, speed of mixing, display of mixing settings, time of defoaming, speed of defoaming, and display of defoaming settings followed by display of mixing settings and a return to the beginning of the cycle.
3. At each editable field, alter the numerical value using the UP and DOWN arrows, then press SETUP to move to the next field.
4. After making changes to the mixing settings, hold the MEMORY button for 1+ seconds to save your changes to the step.
5. After making changes to the defoaming settings, hold the MEMORY button for 1+ seconds to save your changes to the step.

**Altering the Memory Slot:** By default, the above operations change the settings of the program saved in the first memory slot, as displayed by the memory LED's. There are up to 6 programs that can be saved on the machine. To use a different slot, press the MEMORY button

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# Reference Documentation

thinky_are-310_mixer_manual.pdf

Using the Thinky Mixer (video)

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# Training Documentation

thinky_are-310_mixer_programming_handout.pdf

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