

THINKY ARV-310

Location of Machine: Composites Lab, RFM 1218

Location of SOP and Machine Operating & Safety Manual: Composites Lab website under resources; Composites Lab TRACS site; and Hardcopy near machine.

Emergency Contact:

- Call 911
- Call EHS & Risk Management at 512-245-3616
- Call Head Lab Technician, Dr. Ray Cook (office 512-245-2050)
- Call Dr. Jitendra S Tate (office 512-245-4872)

Before using this machine:

- You must have permission from Dr. Tate.
- You must have received formal training from technician or, trained research student (designated by Dr. Tate) related to machine safety and operation.
- You must read and understand **SOP**.
- You must use this machine under direct supervision of Dr. Tate or, Dr. Cook or, trained research student (designated by Dr. Tate).
- You must have signed "Lab Rules" document with Dr. Tate. This document must be signed every semester fall, spring, and summer (as applicable).
- If you do NOT follow above instructions you will be held responsible for your own safety and damages.

Safety Precautions:

Protective Equipment: Prior to performing this procedure, the following personal protective equipment must be obtained and ready for use: **Gloves, Safety Goggles, and Lab Coat.**

Important Safeguards:

1. Do NOT use any solvents in the mixer as they may explode due to temperature rise.
2. Balance must be regulated to match material.
3. Mixer cups MUST be cleaned with cleaner according to MSDS used.
4. Make sure cup caps are properly tightened.
5. This procedure will result in waste which must be disposed of in compliance with environmental regulations.
6. In the event that a hazardous materials spills during this procedure, be prepared to execute the correct emergency procedure according to the MSDS.



General information

The ARV-310 holds up to 310g material container. Maximum material mixing volume is 250ml in the vacuum state and 300ml in the air state without vacuum

Maximum centrifugal power of the ARV-310 is 400G, which is produced from 2,000 rpms and the 9cm diameter arc of the container rotation. The revolution rpms are adjustable in a range of 0, 200-2000 rpms and the ratio of the revolution rpms to the rotation rpms of the cup holder is fixed at a 2:1 ratio.

The ARV-310 mixes in the vacuum chamber and includes the vacuum pump. The vacuum pressure can be programmed in Torr or Kpa to a maximum of 5 Torr (0.67Kpa) in 0.1 Torr increments.

The ARV-310 can store 9 recipe profiles. Each profile has 5 programmable steps for continuous mixing in either air or vacuum. Total processing time per profile is up to 30 minutes and each step can be programmed in 1 second increments

Specifications:

Weight: Approx. 90Kg

Dimensions: H450xW555xD645 (mm)

Capacity:

300ml container:

Under atmospheric pressure:

- 250ml 250g(net)
- 250m 310 (gross)

When vacuum:

- 200ml 250g(net)
- 200m 310 (gross)

THINKY ARV-310 Standard Operating Procedure	
<p>1. Turning on:</p> <ul style="list-style-type: none"> a) Turn on transformer (a small box on the left, next to the mixer) b) Turn on the mixer (switch on the front) 	
<p>2. Programming:</p> <ul style="list-style-type: none"> a) Select the program number 1-9 by pushing “memory” button b) Push and hold the “memory” button c) Choose the step 1-5 by pushing “step” button d) In each step you can select desired Speed (RPM), Vacuum (kPa), Time (min.s) <ul style="list-style-type: none"> i. Time: Push Time, use Up/Down to change, Push Time Again ii. Vacuum Level: Push Time, use Up/Down or “Vacuum Off”, Push Time iii. Speed: Push Speed, use Up/Down, push Speed again e) Go to next step f) The programming is done, no need to exit 	

<p>3. Mixing:</p> <ul style="list-style-type: none"> a) Mix your materials in a container <ul style="list-style-type: none"> i. Use adapters for smaller container b) Weight container with material, lid, and adapter (if used) c) Open the lid 	
<p>4. Mixing cont.</p> <ul style="list-style-type: none"> a) Set counter balance (in grams) b) Place the container in the mixer c) Close the lid d) Push Start/Stop button e) Wait until the program is executed and you hear a beep f) Open the lid g) Remove the container 	
<p>5. Turning off:</p> <ul style="list-style-type: none"> a) Turn off the Mixer (on the front panel) b) Turn off the Transformer (a box on the left) c) Clean any spills 	