

Standard Operating Procedure for the EssenEx[®] 300

U.S Patent 9,486,716 - NZ Patent 630,585 - CN 104271720 B – Vn 17571

Scope: This SOP is to guide the user in the proper usage of OilExTech's EssenEx[®] 300 microwave distillation unit.

Required materials:

- EssenEx[®] 300, upper and lower shield, lid, 800 mL beaker, 600 mL ice core mold, ice core disk, screw and nut, (blue) foam insulator, mug, pipettes, 100 mL volumetric flask, and vials
- Botanical material
- Microwave with vertical opening of at least 9.5 or 240 mm

Procedure:

1. Ice Core Preparation

- a. Set the ice core mold in the mold stand and fill with about 600 mL water. Thread a nut onto the ice core pin leaving about 5/8" or 15 mm of the threads exposed. Place an ice core disk then press the foam insulator onto the ice core pin. Freeze at least 24 hours before extraction.

2. Botanical Preparation

(see example preparations on the website www.oilextech.com under "Uses")

3. Oil Extraction

- a. Weigh can be 150 to 600 grams of botanical material.
- b. Place the botanical in the glass jar. Create a space in the center of the botanical by moving the botanical to the walls of the jar.
- c. Record the total mass of the botanical, glass jar, and insulating sleeve before and after extraction. The difference is an approximation of the amount of steam generated.
- d. Record the mass of the empty beaker before extraction and the mass of the full beaker after extraction. The difference, less the value from *h*, is the mass of condensate formed.
- e. Place the lower shield and beaker in the space created.
- f. Place the upper shield on the rim of the jar.
- g. Allow the ice core to thaw for 30 min at room temperature for easy removal from the mold. Record the mass of the ice core before and after extraction. The difference is the mass of ice melted. Attach it to the lid with the nylon nut.
- h. Fill mug with 200 ml water.
- i. Place unit and mug in the microwave and run on high for 14 min. *Note: Run for 13 min if botanical is at room temperature (e.g. 2nd extraction).*
- j. Let the unit cool for 5 min.
- k. Remove the lid and upper shield. Carefully remove the beaker from the unit.
- l. Pour a portion of the hydrosol into a graduated 100 mL volumetric flask.
- m. Roll the stem of the flask between your palms to allow the oil to rise to the top.
- n. Record the volume of oil collected.
- o. Pipette the oil out of the flask and transfer into a vial.
- p. Repeat steps *m-p* as necessary.
- q. Botanical material with very high oil content (>2.5 wt.%) may still contain additional oil; 75-80% of the oil should be extracted in 1 run. Allow the unit to come to room temperature and repeat steps *c-p* if you wish to run a 2nd extraction with the same material. Rehydrate the material with water equal to the value from *d* prior to a 2nd extraction.

The EssenEx[®] 300 includes:

1x EssenEx [®] 300 (9" x 9") Glass Jar	1x 100 mL Volumetric Flask w/stopper
1x Cone Shield	1x OilExTech Mug
1x Cylinder Shield	4x Ice Core Pins and Nuts
1x 800 mL Beaker	4x Ice Mold
10x 1 mL Pipettes	4x Ice Mold Discs
10x 3 mL Pipettes	4x Ice Mold Insulators
4x 0.25 oz Vials	4x Ice Mold Stands
4x 0.5 oz Vials	

Freeze the ice cores

Ice cores must be prepared in advance before using the EssenEx[®] 300. Place an ice core mold upright in the ice core stand. Thread a nut onto an ice core pin. Leave about 5/8" or 15 mm of the threads exposed at the end. Place an ice core disc onto the pin, then the ice core insulator. Fill the ice core mold with cold water to the fill line just below the top of the mold. Center the disc and insulator on the ice core mold with the ice core pin extended down into the water. Place the ice core stand and ice core mold on a level surface in the freezer and freeze until solid. Freezing may take up to 24 hours. **NOTE: We have found that using Spring water or Distilled water produces superior Ice Cores.**

Differences in the Operator's Manual from the EssenEx[®] 100

Fill the EssenEx[®] 300

"50-200 grams **change** to "150-600 grams"

Assemble...

"upper nut and disk" **change** to "ice core insulator and disc"

Then place the lid with the ice core onto the unit.

Microwave...

Fill the provided mug $\frac{3}{4}$ full with water. Then place the EssenEx[®]300 in the microwave with the mug next to it.

"6 to 8 minutes" **change** to "12-14 minutes" "for microwaves ranging from 1000-1300W"

Caution: The glass jar will be HOT so allow to cool before handling.

Separate the Oil

Carefully pour the liquid into the volumetric flask until the neck is $\frac{3}{4}$ full...

Feel free to contact us at info@oilextech.com if you need any assistance or have questions.