



INSTRUCTIONS

NANOSTABILIZER[®]-LSTM

USER GUIDE:
WITH LSP-600 PROCESSOR IN THE BATCH CONFIGURATION



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MATERIALS NEEDED:

- LSP-600 ultrasonic processor configured in the batch mode (see LSP-600 User Manual for details);
- Digital scale, ice/water bath, 1 micron capsule filter with integrated 200 cc syringe;
- Tall 250 ml beaker (process beaker), magnetic stirrer/hot plate, stir-bar, dark-glass storage container (finished product container);
- NanoStabilizer®-LSTM, mushroom extract, distilled water.

INSTRUCTIONS FOR MAKING 200 ml OF NANOEMULSION:

The instructions below detail the method for preparing 200 ml (200 g) of nanoemulsion with the mushroom extract concentration of **50 mg/ml**. If a different concentration is desired*, use the table below and substitute the bolded numbers in the instructions with the numbers in the colored boxes.

Mushroom extract concentration in nanoemulsion*	30 mg/ml	40 mg/ml	50 mg/ml	60 mg/ml	70 mg/ml
Mushroom extract (g)	6	8	10	12	14
NanoStabilizer®-LSTM (g)	24	32	40	48	56
Distilled water (g)	170	160	150	140	130
Total (g)	200	200	200	200	200
Number of 50 mg of mushroom extract doses per 200 ml/200 g of nanoemulsion	120	160	200	240	280

* If your intention is to convert this nanoemulsion into a water-soluble powder, we recommend that you stay with the 50 mg/ml concentration, as detailed in this guide. We also recommend that you dry/ powderize the nanoemulsion within 48 hours of producing it.

1

Mixing your mushroom extract with NanoStabilizer®-LSTM and water:

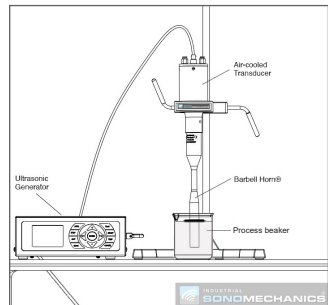
- a. Turn on the heater of the magnetic stirrer/hot plate and set it to 65 °C (149 °F).
- b. Place the process beaker with a stir bar on the digital scale. Carefully dispense **10 g** of your mushroom extract* onto the bottom of the process beaker.
- c. Place the process beaker on the hotplate and let the mushroom extract warm up.
- d. Place the process beaker with a stir bar on the digital scale and tare. Accurately dispense **40 g** of NanoStabilizer®-LSTM into the process beaker.
- e. Tare the digital scale again and dispense **150 g** of warm distilled water into the process beaker.
- f. Place the process beaker back on the magnetic stirrer/hot plate, turn on the stirrer (at a low speed), and bring the contents to approximately 65 °C (149 °F). Continue to stir (increasing the speed as needed) and supply the heat until the ingredients appear mixed.

2

Ultrasonic processing:

In this step, ultrasonic processing will commence. Refer to LSP-600 User Manual for operating instructions.

- a. Assemble the LSP-600 ultrasonic processor in the batch mode (see LSP-600 User Manual and schematic on the right for details).
- b. Place the process beaker in the ice/water bath (not shown). The diameter of the bath should be at least 2 times that of the process beaker. You must be able to keep the processed liquid temperature below 70 °C (158 °F). The water level in the bath should be sufficient to cover the contents of the process beaker, but not so high that the ice/water could spill into the process beaker.
- c. Immerse the FBH-type Barbell Horn® into the liquid in the process beaker by about 5 cm. Make sure that there is a distance of at least 3 cm from the bottom of the horn to the bottom of the beaker.
- d. Set the ultrasonic amplitude to 80 % (see LSP-600 User Manual for details). Note that this setting can be adjusted up or down to optimize the results.
- e. Set the generator to run for 15 minutes (see LSP-600 User Manual for details) and activate ultrasound. Replenish the ice in the ice/water bath as needed.



- f. After ultrasound automatically deactivates, move the ice/water bath with the process beaker to the magnetic stirrer/hot plate. Turn on the stirrer.
- g. Leave the processed nanoemulsion stirring on the magnetic stirrer/hot plate in the ice/water bath for 5 more minutes.

3

Filtration:

In this step, you will use the capsule filter assembly with integrated syringe to remove any particulate contamination from your nanoemulsion as you collect it in the finished product container.

PARTS NEEDED:



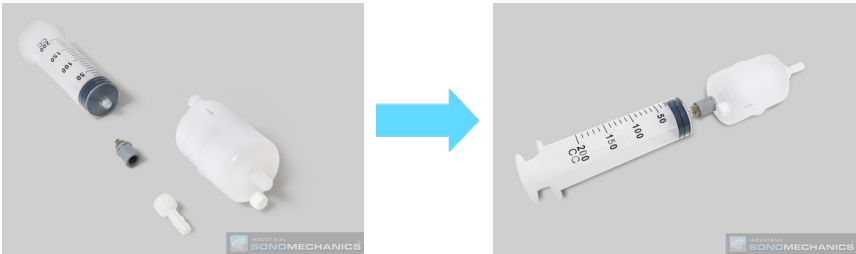
1. 1 micron capsule filter

2. 200 cc syringe

3. Luer lock adapter

4. Barbed adapter

- a. Assemble items **1 - 4** as shown in the pictures below.



- b. Filter the nanoemulsion by using the 200 cc syringe to pass it through the 1 micron filter into the presterilized finished product container.
- c. Store the finished product container with the filtered nanoemulsion in a cool and dark place.
- d. Flush the filter with distilled water gently in both directions until the water runs clean.

To re-order NanoStabilizer®-LSTM and replacement filter assemblies, please use the link or scan QR code below to visit our online store.

<https://sonomechanics.myshopify.com>





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