

NANOSTABILIZER®-LT

USER GUIDE:
WITH BSP-1200 PROCESSOR IN THE BATCH CONFIGURATION



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MATERIALS NEEDED:

- BSP-1200 ultrasonic processor configured in the batch mode (see BSP-1200 User Manual for details);
- Digital scale, ice/water bath, peristaltic pump (optionally provided), in-line sterilizing filter (optionally provided), 10 ml vials, IR thermometer, disposable pipettes;
- Tall 1.5 – 2 L beaker (process beaker), magnetic stirrer with hot-plate, stir-bar, dark-glass storage container (finished product container);
- NanoStabilizer®-LT, cannabis extract (isolate, distillate, full-spectrum oil, etc.), distilled water.

INSTRUCTIONS FOR MAKING 1000 ml OF TRANSLUCENT NANOEMULSION:

The instructions below detail the method for preparing 1000 ml of translucent nanoemulsion with the cannabis extract concentration of **20 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.

Cannabis extract concentration in nanoemulsion	10 mg/ml	20 mg/ml	30 mg/ml	40 mg/ml	50 mg/ml
Cannabis extract	10 g	20 g	30 g	40 g	50 g
NanoStabilizer®-LT	50 g	100 g	150 g	200 g	250 g
Distilled water	940 g	880 g	820 g	760 g	700 g
Total	1,000 g	1,000 g	1,000 g	1,000 g	1,000 g
Number of 10 mg doses per 1000 ml of nanoemulsion	1,000	2,000	3,000	4,000	5,000

1

Mixing your cannabis extract with NanoStabilizer®-LT:

- a. Place the process beaker with the stir bar on the digital scale and carefully dispense **100 g** of NanoStabilizer®-LT and then **20 g** of your cannabis extract. Be careful to dispense your cannabis extract and NanoStabilizer®-LT onto the bottom of the beaker and not to spill it onto the inner beaker wall or outside.
- b. Place the process beaker on the magnetic stirrer with hot-plate and stir until your cannabis extract has completely dissolved. Apply heat if necessary, but do not allow the liquid temperature to exceed 70° C (158° F). Do not remove the stir bar from the beaker.

2

Incorporating the aqueous phase:

- a. Place the process beaker on the digital scale, tare and carefully dispense **880 g** of distilled water into the beaker.
- b. Place the process beaker back on the magnetic stirrer with hot-plate and stir until a milky consistency is achieved (do not apply heat).

3

Ultrasonic processing:

In this step, ultrasonic processing will commence. Refer to the BSP-1200 User Manual for operating instructions.

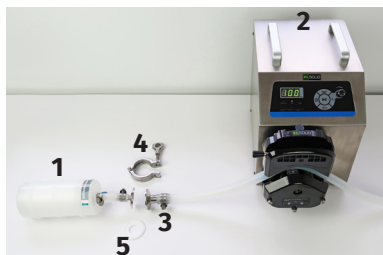
- a. Assemble the BSP-1200 ultrasonic processor in the batch configuration. Verify that the transducer is being cooled properly (see BSP-1200 User Manual for details).
- b. Place the process beaker in the ice/water bath. The diameter of the bath should be at least 2 times that of the process beaker. You must be able to keep the temperature of the liquid inside the beaker below 70° C (158° F). The water level of 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 liquid.

- c. Keeping the process beaker in the ice/water bath, place both items onto the magnetic stirrer positioned below the ultrasonic stack (transducer/FBH-type Barbell Horn® assembly).
- d. Immerse the FBH-type horn into the liquid in the process beaker down to the horn's flange (by ~6 cm). Make sure that there is a distance of at least 5 cm from the bottom of the horn to the bottom of the beaker.
- e. Set the ultrasonic amplitude to 80% (see BSP-1200 User Manual for details). Note that this setting can be adjusted up or down to optimize the results.
- f. Initiate ultrasound and start timing. Allow ultrasound to run for 5 minutes and then stop. Leave the liquid stirring. Draw a sample into a 10 ml vial and notice the degree of translucency. Replenish the ice in the ice/water bath and let the temperature of the liquid in the process beaker come down to 35 °C (95 °F).
- g. Repeat Step 3f until consecutive samples have approximately the same degree of translucency (most commonly 2 - 3 more times). Ultrasonic processing is now complete.
- h. Leave the process beaker stirring on the magnetic stirrer in the ice/water bath for 5 more minutes.

4 Filtration:

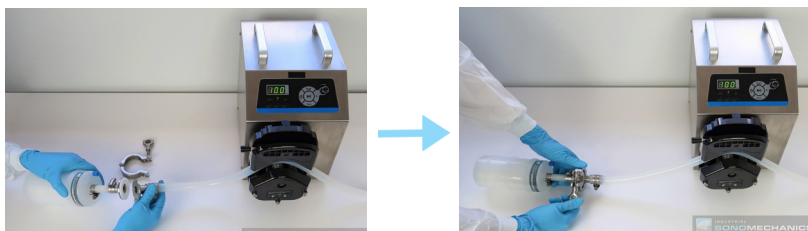
In this step, you will use the in-line sterilizing filter to remove any microorganisms and particulate contaminants from your nanoemulsion as you collect it in the finished product container.

PARTS NEEDED:



1. In-line sterilizing filter with 1/2" sanitary fitting
2. Peristaltic pump with 1/2" ID silicone hose
3. 1/2" sanitary to 1/2" hose ID adapter
4. Sanitary clamp
5. Sanitary gasket

- a. Assemble items **1 - 5** as shown.



- b. Using your pump at a flow rate of 250 - 300 ml/min, sterilize the nanoemulsion by passing it through the in-line filter into the pre-sterilized 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.



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