INSTRUCTIONS

NANOSTABILIZER®-LSO

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, water chiller, peristaltic pump, in-line capsule filter;
- 1.4 L jacketed beaker (process beaker), 2 L glass beaker (pre-mix beaker), magnetic stirrer with hotplate, stir bar, dark-glass storage container (finished product container);
- NanoStabilizer®-LSO, cannabis extract* (e.g., isolate, distillate, full-spectrum oil, etc.), distilled water.

INSTRUCTIONS FOR MAKING 1000 ml OF NANOEMULSION:

The instructions below detail the method for preparing 1,000 ml of 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®-LSO	40 g	80 g	120 g	160 g	200 g
Distilled water	950 g	900 g	850 g	800 g	750 g
Total	1,000 g	1,000 g	1,000 g	1,000 g	1,000 g
Number of 10 mg doses per 1,000 ml of nanoemulsion	1,000	2,000	3,000	4,000	5,000

* If your cannabis extract is solid or very viscous at room temperature (e.g., CBD isolate, Delta 8 THC), it may be necessary to dissolve it in a small amount of carrier oil (e.g., 1 part of MCT oil or a terpene to 3 – 4 parts of extract by weight) before processing. Heating to approximately 50˚C (122˚F) may be required to fully dissolve the extract in the carrier oil.

Note: We do not recommend processing extracts with high wax contents as some of the wax may remain untreated, separate from the nanoemulsion and interfere wijth filtration.

** If your intention is to convert this nanoemulsion into a water-soluble powder, we recommend that you stay with the **20** mg/ml concentration, as detailed in this guide. We also recommend that you dry/powderize the nanoemulsion within 48 hours of producing it.

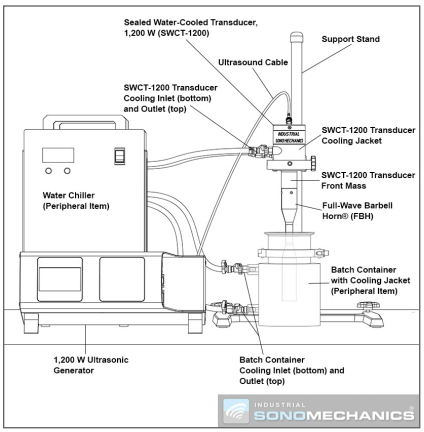
1 Mixing your cannabis extract with NanoStabilizer®-LSO and water:

a. Place the pre-mix beaker with a stir bar on the digital scale and carefully dispense **80** g of NanoStabilizer®-LSO on the bottom of the beaker.
b. Tare the digital scale and dispense **20** g of your cannabis extract into the pre-mix beaker.
c. Tare the digital scale and pour **900** g of distilled water into the pre-mix beaker.
d. Place the premix beaker on the magnetic stirrer with hot plate, turn on the stirrer (at a low speed) and the heater. 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 thoroughly mixed.
e. Transfer the contents of the pre-mix beaker into the process beaker.

2 Ultrasonic processing:

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

a. Assemble the BSP-1200 ultrasonic processor in the batch configuration (see BSP-1200 User Manual and schematic on the right for details).
b. Turn on the water chiller and verify that the transducer and process beaker are being cooled properly. Maintain the processed liquid temperature between 40 ° and 60 °C (104 ° – 140 ° F) throughout processing.
c. Immerse the FBH-type Barbell Horn® into the liquid in the process beaker by about 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 process beaker.



d. 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.
e. Set the generator to run for 15 minutes (see BSP-1200 User Manual for details) and activate ultrasound. Note that this setting can be adjusted up or down to optimize the results.

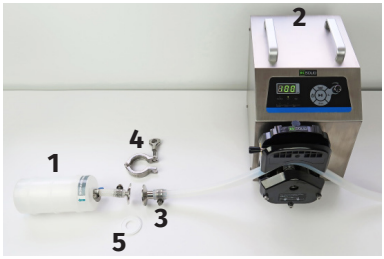
f. When ultrasound automatically deactivates, inspect the nanoemulsion and make sure no oil is visible at the surface. Ultrasonic processing is now complete.

g. Allow the temperature of the nanoemulsion in the process beaker to come down to 35 °C (95 °F).

3 Filtration:

In this step, you will use the 1.2 micron in-line capsule filter to remove any particulate contamination from your nanoemulsion as you collect it in the finished product container.

PARTS NEEDED:



1. 1.2 micron In-line capsule filter with 1/2" sanitary fitting

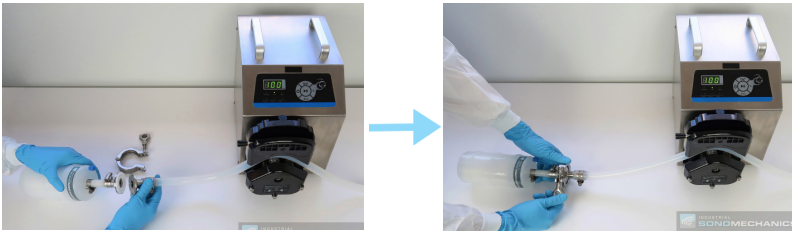
2. Peristaltic pump with 1/2" ID silicone hose

3. 1/2" sanitary to 1/2" hose ID adapter

4. 1/2" sanitary clamp

5. 1/2" sanitary gasket

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



b. Using your pump at the flow rate setting of approximately 100 – 150 ml/min, pass the nanoemulsion through the 1.2 micon in-line capsule 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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