



A Guide to Scaling Up Oily Gels with Sucragel

Type of vessel and mixer required

- > The vessel must be able to hold $\frac{1}{4}$ extra on top of the size of the batch, e.g manufacture a 1.5-ton batch in a 2-ton vessel.
 - > The mixers used must be able to thoroughly mix the whole batch continuously. We recommend counter -rotating stirrers all the way up the vessel, with sweeping side stirrers and a bottom-mounted homogenizer to ensure thorough mixing.
 - > The connecting vessel for the oil phase should be connected via a pipe going through the top of the main mixing vessel.
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For technical guidance on formulating and manufacturing with Sucragel, please contact:



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Method for manufacturing an oily gel

1. Begin with the Sucragel in the main vessel and the oil phase mixed together in a separate connecting vessel with a connecting pipe at the top of the main vessel.
2. If heating is required, ensure both phases are heated to the same temperature before mixing begins.

TIP: We recommend no higher than 80-85°C as above this temperature the Sucrose Laurate in the Sucragel may crystallise.

3. In the main vessel start all the mixers on at high speed to ensure the Sucragel phase is moving thoroughly and continuously.
4. The oil phase should now be added through the pipe at the top of the main vessel, opening the tap for about 40 seconds to allow about 5% of the oil phase into the main vessel.
5. Close the tap and allow the oil to be thoroughly mixed into the Sucragel for a few minutes before adding the next portion of oil.
6. Repeat this process twice with addition of 5% oil followed by vigorous mixing.
7. For the fourth portion of oil addition, open the tap from the oil vessel for about a minute to allow an 8% portion of oil into the Sucragel vessel. Again, allow this to be thoroughly mixed in until the mixture is uniform.
8. Continue adding the oil in 8% portions (opening the tap for about 1 minute each time) and mixing for several minutes after each addition, until all the oil is added. This should take around 1-2 hours.

TIP: It is important to watch the batch to ensure all the oil is mixed in before adding the next portion of oil as each time the oil is added it initially sits on top of the gel and with the thorough mixing is eventually all incorporated to produce a homogenous mixture.

TIP: Longer mixing time is needed as more oil is added. This is due to the viscosity increasing resulting in it taking longer for the oil to be incorporated into the batch, especially around the sides of the vessel.

9. When all the oil has been incorporated, the product will need to be mixed for another 10 minutes before beginning the cooling process. (The contra rotator stirrers and homogenizer should remain on while the batch is cooling.).

TIP: This long cooling stage eliminates a lot of the air bubbles seen on a smaller scale.

10. At about 40°C other ingredients can be added such as fragrance and colour, mixing for about 10 minutes after each addition.
 11. Once the batch is cooled to room temperature (~25°C) the water/water based extracts can be added and the clarity of the batch will be restored.
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