

## **How to make liposomal C- From Krispin Sullivan, [www.krispin.com](http://www.krispin.com)**

<http://www.harborfreight.com/25-liter-ultrasonic-cleaner-95563.html> the ultrasound machine. Other smaller units will also work. Look for ease of cleaning and pouring and how long the timer cycle will process.

Better sonication - get and use [http://www.ebay.com/itm/DSA50SE-GL2-DUAL-20KHz-40KHz-FREQUENCY-3L-250W-DIGITAL-ULTRASONIC-CLEANER-/300660750927?pt=LH\\_DefaultDomain\\_0&hash=item4600c6fa4f#ht\\_6410wt\\_1154](http://www.ebay.com/itm/DSA50SE-GL2-DUAL-20KHz-40KHz-FREQUENCY-3L-250W-DIGITAL-ULTRASONIC-CLEANER-/300660750927?pt=LH_DefaultDomain_0&hash=item4600c6fa4f#ht_6410wt_1154) makes six cups (2 cup recipe times 3) and you can sonicate for 20 minutes, nice.

In my experience using a high powered Immersion Blender for the initial mixing works best, such as the KitchenAid 300 or similar.

Recipe to make liposomal C in the 2.5 liter ultrasonic machine making 9 cups which is 144 half ounce (1 tablespoon) servings of 1,000 mg each-

9 teaspoons (3 tablespoons) of ascorbic acid <http://www.iherb.com/NutriBiotic-Ascorbic-Acid-Crystalline-Powder-16-oz-454-g/24191?at=0>

27 teaspoons (9 tablespoons) of sodium ascorbate <http://www.iherb.com/NutriBiotic-Sodium-Ascorbate-Crystalline-Powder-16-oz-454-g/10178?at=0>

36 tablespoons of lecithin <http://www.iherb.com/Fearn-Natural-Food-Lecithin-Granules-16-oz-454-g/5949?at=0> or <http://www.iherb.com/Now-Foods-Lecithin-Granules-1-lb-454-g/16562?at=0>

" Put 36 tablespoons (level) lecithin granules into a measuring container and fill with very warm (reverse osmosis, distilled, or non-chlorinated, non-fluoridated) water, NOT boiling, just very warm to the 6 cup mark. Warm water expands the lecithin to allow uptake of more vitamin C.

" Mix slowly with immersion/hand blender or regular blender, high enough to blend smoothly, so that the lecithin is thoroughly mixed, no lumps or granules remaining.

" Place the ascorbic acid and sodium ascorbate in a separate measuring container and fill to the 3 cup line, cold or room temp water (RO or distilled, no fluoride or chlorine). Stir briskly (do not blend) until fully dissolved (looks clear). Add to the pre-mixed lecithin and blend a bit more until thoroughly mixed.

" Toss the batch (or part thereof) in your ultrasound machine on high (no heat) and run two cycles of 480 stirring with non-metallic stirrer every few minutes to get all liquid 'sonicated'. You can leave the top off during the sonication. If you only add liquid to about 1-2 inches from the bottom you will get better liposomes (smaller), though it will take longer. Each 'batch' should process about 10-12 minutes minimum, if using the larger machine 20 minutes.

The mix should be smooth, somewhat thick, milky yellow, with no lumps or separations. If your material has lumps, separates, or otherwise does not remain milky smooth you made a mistake. Gently re-blend and re-sonicate to see if you can save the batch.

Pour into one or more jars/bottles with a tight lid and refrigerate. Each tablespoon (1/2 ounce) will contain about 1,000 mg liposomal C and 900-1000 mg phospholipids.

Recipe for two cups (32 servings of 1,000 mg each) if you use a smaller machine, most machines will make 2 cups at a time but you will get better liposomes if you only process (ultrasound) 1 cup at a time-

2 teaspoon ascorbic acid (level, measuring)  
6 teaspoons sodium ascorbate (level, measuring) Put the vitamin C in a measuring container and add cool water to the 1/2 cup line, stir briskly until thoroughly dissolved. Set aside.

Put 8 tablespoons lecithin granules (level, measuring) in large measuring container; add very warm water (fluoride/chlorine free) and fill to 1 1/2 cup line. Blend until smooth with immersion/hand blender or regular blender, try not to 'foam' too much.

When smooth, slowly add the fully dissolved vitamin C. Blend thoroughly. Pour into the ultrasound machine keeping each batch not more than 1-2 inches from the bottom and process/sonicate each batch for about 10-12 minutes.

Place in glass container with an air tight lid or cap and refrigerate.

### **Sonicate or sonication-**

Sonication is the act of applying sound (usually ultrasound) energy to agitate particles in a sample for various purposes. Sonication is commonly used in nanotechnology for evenly dispersing nanoparticles in liquids. Ultrasound machines aim the sound waves to the middle so stirring more evenly distributes particle size.

Loading dose is 2,000 mg three times a day for 6-8 weeks, or longer. Maintenance dose is 1,000-2,000 mg twice a day.

All items, so far the best buy, Fearn Lecithin, Nutriotics Sodium Ascorbate 1 lb. and Nutriotics Ascorbic Acid 1 lb. are available from <http://iherb.com> If first time ordering use my referral code **NAJ524** for a discount. Buying lecithin in sealed 1 lb. containers keeps it fresher. Exposure to moisture/air causes changes in lecithin making it less healthful and producing a stronger 'off-taste'. So unless you make TONS of liposomal C weekly buy lecithin in 1 lb. units. Sealed and kept in a cool/dry location the lecithin has a long shelf life.

"I have never let my schooling interfere with my education." - Mark Twain