

MCT Oil (Medium Chain Triglyceride) Shampoo and Shower Gel

Product	%	Liter Vol.	Half Vol.
1. MCT Oil – heat phase 1 to 150° F	2.0%	20.0 ml	10.0 ml
Cromollient SCE (solubilizer)	0.2%	2.0 ml	1.0 ml
Sepiplus, 12 drops	0.1%	1.0 g	0.5 g
2. Distilled Water – do not heat. Put in blender	60%	600.0 g	300 g
Hydroxypropyl Methylcellulose, (HPMC, Benecel MP824, hydro-colloid). Pre-disperse in 25 ml VG, pour into blender for 60 seconds.	1.0%	10.0 g	5.0 g
Vegetable Glycerin (VG, humectant)	5.0%	50.0 ml	25.0 ml
Xanthan Gum, (XG). Pre-disperse XG & HPMC in 25 ml VG and pour into blender.	0.3%	3.0 g	1.5 g
Sodium Carbonate (<i>aka</i> Sal Soda, 37% Na ₂ CO ₃) after HPMC and XG, raise pH to 9, & hydrate HPMC.	0.2%	2.0 g	1.0 g
Xylitol (biofilm solvent)	2.5%	25.0 g	12.5 g
Add Citric Acid (reduce pH to 6.3) after HPMC gels. Now add part 1 to blender. Then, add the rest of part 2 .	0.3%	3.0 g	1.5 g
Climbazole (in 3x Isopropanol)	0.06%	0.6 g	0.3 g
Optiphen ND (preservative)	0.3%	3.0 ml	1.5 ml
Leucidal Liquid PT (preservative)	1.0%	10.0 ml	5.0 ml
Niacinamide (Vitamin B3)	1.0%	10.0 g	5.0 g
dl-Panthenol (Vitamin B5)	1.0%	10.0 g	5.0 g
Ultra-Maize (hair cuticle protection)	1.5%	15.0 g	7.5 g
3. Remove from blender and stir in surfactants. Decyl Glucoside (DG, surfactant)	5.0%	50.0 ml	25.0 ml
Polyglucose/Lactylate (PL, surfactant)	5.0%	50.0 ml	25.0 ml
Coco-Betaine (CB, surfactant)	12.0%	120.0 ml	60.0 ml
Glyceryl Caprylate Caprate (GCC, natural surfactant enhancer), stir into CB and add with CB	1.5%	15.0 ml	7.5 ml
Mix part 2 in stages, in the order shown, in blender.	99.96%	999.60 ml	499.80 ml

On November 12, 2013 I started trying to compound this shower gel. Making a stable, foaming, suitably viscous shower gel was extremely difficult -- this formula is the mark 20 formula, developed on June 9, 2014. The color is milky white. For an attractive color, add 1 drop of blue food color. For a pleasant fragrance, add 3 drops food grade orange oil and 1 drop lavender oil. On January 11, 2014, climbazole was decreased to 0.1%, and later to 0.06%, without loss of effectiveness. On April 2, 2014, I discovered that Niacinamide fades hyperpigmented tinea versicolor,¹ and on April 9, 2014, that Hydroxypropyl Methylcellulose (HPMC) thickens the shower gel/shampoo and rinses off better than PGA. HPMC must be pre-dispersed in VG, and then mixed in an electric blender for 60 seconds to prevent clumping, **then** add Sodium Carbonate Decahydrate (washing soda) to increase the pH to about 9, so the HPMC will consistently gel. Wait ten minutes and then add Citric Acid to reduce the pH. When the oils in

¹ <http://www.pgbeautygroomingscience.com/topical-niacinamide-reduces-forearm-hyperpigmentation-validation-of-forearm-protocol.php>
http://www.pediatricnews.com/fileadmin/qhi_archive/ArticlePDF/CT/076020135.pdf

Part 1 are added to the HPMC gel, the top-foam immediately disappears (a good thing), and the viscosity becomes much lower but the mix remains usefully thick.

Stir, and do not electric-blend surfactants to prevent foaming. The pH was increased to 6.3 so the product could also be used as shampoo, and a modified corn starch was added to collagen-coat the hair cuticle. Propylene Glycol was deleted because it decreases foaming. Cromollient SCE and Xanthan Gum are useful emulsifiers -- they prevent surfactants from breaking the water/oil emulsion. On June 9, 2014, I found that Pectinax Ultra was dissolving the cellulose gel formed by HPMC, so it was deleted.

I think it's FDA-acceptable to make a cosmetic product with only 0.06% Climbazole, because it's the Climbazole is used at essentially a preservative-level. I think the FDA only looks at 0.1% or more Climbazole as a regulatory issue, but no one in the US has ever done clinical trials on Climbazole, so there's no such thing as U.S.P. Climbazole. The EU allows Climbazole, and the concentration of 0.06% is far less than the maximum concentrations allowed under EU-guidelines for cosmetic Climbazole. However, a US doctor or US pharmacist cannot and will not prescribe or compound the MCT lotion or shower gel because of the tiny concentration of Climbazole.

A tiny amount of Climbazole makes a difference -- I experimented with zero-percent Climbazole shower gels for two weeks, and found that my skin was slightly itchy on exiting the shower, which I interpreted to be a pre-cursor to a flare-up for a malassezia allergic reaction.