

**Recipe: KOH only 5% excess Lye**

Recipe Type: Liquid Soap

Group: Liquid Soap

Last saved: 08 Feb, 2018

No. of portions: 31.9

Total Weight: 9710.09 gr

Approx. Volume: 9564.33 ml

## CONTENTS

**OILS**

	Quantity	Weight in gr	%Oils	%Total
1. Coconut	500 gr	500.00	45.5	5.1
2. Sunflower	500 gr	500.00	45.5	5.1
3. Castor	100 gr	100.00	9.1	1.0
		1100.00 gr	100%	

**LYE & WATER**

		%Total
KOH needed: (With -5% Lye discount)	263.21 gr	2.7
Water Needed: (With 0% Water discount)	323.88 gr (323.88 ml)	3.3

**ADDITIVES**

	Quantity	Weight in gr	%Total
1. Misc: Glycerin	462 gr	462.00 *	4.8
2. Water: Water	1363 gr	1363.00	14.0
3. Misc: Potassium Carbonate	55 gr	55.00	0.6
4. Misc: Citric acid solution 4 - 1	300 gr	300.00	3.1
5. Misc: Natrasol HR250	50 gr	50.00	0.5
6. Water: Water	5793 gr	5793.00	59.7
		8023.00 gr	

\* Additive used to adjust water quantity.

## NOTES

Step 1. Weigh and melt the oils, keeping them at 71-79C

Step 2. Prepare dilution Solution by mixing Potassium Carbonate with Water and bring to light boil. Remove from heat, this will be added at trace.

Step 3. Heat Glycerin to 93C and keep warm.

Step 4. Prepare Lye solution, once Lye is fully dissolved in water add hot glycerin. (The addition of Glycerin and Potassium Carbonate allow the soap to stay liquid at high concentrations)

Step 5. Add Lye/Glycerin mix to Oils and maintain at 71-79C. Start stick blending.

Step 6. Bring to thick trace.

Step 7. Add the dilution solution to the mix while stick blending. If it gets grainy, beat it back to a smooth emulsion then continue adding a little more at a time.

Step 8. Cook the soap by maintaining a temperature of 82-87C. If a film appears on top, add a little more water in 80g increments.

Step 9. Test PH, and adjust as necessary using Citric acid Solution. Desired PH 8.5-10

Step 10. Thicken the Soap with Hydroxyethylcellulose at 1% and further dilute the soap stock with up to 150% additional water.

Step 11. Fragrance the soap with 1% Essential Oil Blend

## PREDICTED SOAP QUALITIES

Hardness: 0.0

Fluffy Lather: 5.5

Stable Lather: 4.1

Moisturizing: 5.4

## FATTY ACID COMPOSITION

### Saturated:

Caprylic (C8): 3.2 %

Lauric (C12): 21.8 %

Palmitic (C16): 7.0 %

Capric (C10): 2.7 %

Myristic (C14): 7.7 %

Stearic (C18): 2.9 %

### Unsaturated:

Oleic (C18:1): 4.4 %

Linolenic (C18:3): 0.0 %

Linoleic (C18:2): 31.7 %

Ricinoleic (C18:4): 7.9 %