

COSMETIC
FORMULATION
STARTER
BOOKLET
PRACTICAL ASSIGNMENT



GENESIS FORMULAB

Cosmetic Formulation Formulas for Beginner Formulations

WELCOME TO PRACTICAL FORMULATING!

Hi there! Welcome to Practical Formulation! This workbook provides practical activities to help you learn more about the raw materials and methods you will use when formulating products. It introduces you to basic methods so that you can see how products come together – Process is vital to successful formulation. This will help you put the coming lessons into better perspective.

Before using any raw materials please ensure you have familiarized yourself with their associated SDS and use the correct required protective clothing and gloves.

Watch the videos before making your own formulations. You are required to do this even if you have some experience formulating – you may learn something new.

The videos and text are made as simple as possible, but if you need additional help, please write to support@genesisformulab.com for 1-on-1 tutor support.

Be creative, formulate!

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Product Name: Hydrating Toner

Phase	% w/w	Trade Name
A	88.6	Water
A	5.0	Glycerin
B	5.0	Polysorbate 20
B	0.4	Essential oil blend
B	0.1	Vitamin E
B	0.9	Phenoxyethanol, Ethylhexylglycerin (Euxyl PE9010)
	q.s	pH adjuster
	100.0%	Total

METHOD	
	1. Combine ingredients in phase A.
	2. Combine ingredients in phase B.
	3. Add phase B to phase A slowly while constantly stirring; if the product starts turning milky slow down your addition of phase B until solution clears between additions.
	4. Check and adjust final pH to 5.0 – 5.5.
	Final pH required: 5.0 – 5.5

Product Name: Natural Serum

Phase	% w/w	Trade Name
A	85.1	Water
B	5.0	Glycerin
B	0.3	Xanthan gum
C	3.0	Olivem 1000 (Cetearyl Oliviate, Sorbitan Oliviate)
C	5.0	Almond oil
D	0.5	Essential oil blend
D	0.2	Vitamin E
D	0.9	Benzyl Alcohol, Salicylic Acid, Glycerin, Sorbic Acid (Geogard ECT)
	q.s	pH adjuster
	100.0%	Total

METHOD	
	1. Measure out phase A.
	2. Combine phase B to form a slurry.
	3. Add phase B to phase A while stirring until fully hydrated and a gel forms. Heat to 75°C.
	4. Combine phase C and heat to 75°C.
	5. Add phase C to phase A/B and stir until a glossy, homogenous emulsion forms.
	6. Continue stirring while product cools. At 40°C, add phase D ingredients and stir until homogenous.
	7. Check/adjust pH at 25°C.
	Final pH required: 5.3 – 5.8



Product Name: Moisturising Body Lotion

Phase	% w/w	Trade Name
A	77.8	Water
B	5.0	Glycerin
B	0.4	Xanthan gum
C	0.5	Stearic Acid
C	4.0	Olivem 1000 (Cetearyl Olivatate, Sorbitan Olivatate)
C	2.5	Avocado oil
C	2.5	Almond oil
C	5.0	Caprylic/capric triglycerides
D	0.8	Essential oil blend
D	0.5	Vitamin E
D	1.0	Phenoxyethanol, Ethylhexylglycerin (Euxyl PE9010)
	q.s	pH adjuster
	100.0%	Total

METHOD	
	1. Measure out phase A.
	2. Combine phase B to form a slurry.
	3. Add phase B to phase A while stirring until fully hydrated and gel forms. Heat to 75°C.
	4. Combine phase C and heat to 75°C.
	5. Add phase C to phase A/B and stir until a glossy, homogenous emulsion forms.
	6. Continue stirring while product cools. At 40°C, add phase D ingredients and stir until homogenous.
	7. Check/adjust pH at 25°C.
	Final pH required: 5.3 – 5.8

Notes:

- Remember, your emulsion will set to a different viscosity the day after you make it – so evaluate it the next day as it will be a lower viscosity on the day you make it.
- Keep practicing adding your phases at the right temperature to ensure a glossy, milky looking emulsion forms without evaporation – practice makes perfect!



Product Name: Foaming SLS Free Face Wash

O Phase	% w/w	Trade Name
A	2.0	Polysorbate 20
A	0.5	Essential oil blend
A	0.1	Vitamin E
B	10.0	Sodium cocoyl glutamate (30%)
B	9.0	Cocamidopropyl betaine (30%)
C	71.9	Water
D	5.0	Glycerine
D	0.5	Xanthan gum
E	1.0	Benzyl Alcohol, Salicylic Acid, Glycerin, Sorbic Acid (Geogard ECT)
		<i>(you could add extracts and actives here, but they MUST be water-soluble. If adding here, limit to 5% maximum and take this off the water input to make sure your formula totals 100%)</i>
	q.s	pH adjuster
	100.0%	Total

METHOD	1. Combine phase A materials.
	2. Combine phase B materials.
	3. Add phase A to phase B under slow stirring – be careful not to introduce too much air while stirring.
	4. Add A/B to phase C and stir slowly – be careful not to introduce too much air while stirring.
	5. Combine phase D into a smooth slurry first; then add to phase A/B/C slowly, ensuring the gum hydrates evenly as you are adding the slurry slowly. Keep stirring slow-medium to ensure the gum hydrates evenly but avoid introducing too much air. Stir until the gum is evenly hydrated. Product won't thicken properly until the preservative is added, so just ensure it is dispersed evenly at this point before continuing.
	6. Add phase E and stir through until homogenous.
	7. Check/adjust final pH (if necessary).
	Final pH required: 6.0 – 6.5

Notes:

- The product will need to settle overnight (at least) for bubbles to break and may require a final stir once all bubbles have settled (the next day). The product will appear very thick while it is full of bubbles but viscosity will drop when the bubbles settle out of the formula. Depending on how much air you introduced while mixing, this could take 1-3 days to come out of the formula.
- Remember to give your product a small, slow stir each day as bubbles are settling out – if you stir slowly this can help break some bubbles and also ensure continued homogenous mixing of ingredients but don't add bubbles in the process!

Product Name: SLS Free Body Wash 1

Phase	% w/w	Trade Name
A	3.0	Polysorbate 20
A	1.0	Essential oil blend
A	0.1	Vitamin E
B	15.0	Sodium lauroyl sarcosinates (30%)
B	9.0	Cocamidopropyl betaine (30%)
B	2.0	Coco-glucoside (52%)
C	63.3	Water
D	5.0	Glycerine
D	0.6	Xanthan gum
E	1.0	Benzyl Alcohol, Salicylic Acid, Glycerin, Sorbic Acid (Geogard ECT)
	q.s	pH adjuster
	100.0%	Total

METHOD	1. Combine phase A materials.
	2. Combine phase B materials.
	3. Add phase A to phase B under slow stirring – be careful not to introduce too much air while stirring.
	4. Add A/B to phase C and stir slowly – be careful not to introduce too much air while stirring.
	5. Combine phase D into a smooth slurry first; then add to phase A/B/C slowly, ensuring the gum hydrates evenly as you are adding the slurry slowly. Keep stirring slow-medium to ensure the gum hydrates evenly but avoid introducing too much air. Stir until the gum is evenly hydrated. Product won't thicken properly until the preservative is added, so just ensure it is dispersed evenly at this point before continuing.
	6. Add phase E and stir through until homogenous.
	7. Check/adjust final pH.
	Final pH required: 6.0 – 6.5

Notes:

- Remember to let your product settle overnight (or a couple of days) to get all the bubbles out. A gentle stir each day to ensure ingredients are properly mixed and to break some bubbles can help, but make sure you don't stir too much – you want to break bubbles, not add them!
- Note how much more surfactant is used for a body wash compared to a face wash – the formulas are still very mild for the skin.



Product Name: Mild SLS Free Body Wash 2

Phase	% w/w	Trade Name
A	3.0	Polysorbate 20
A	1.0	Essential oil blend
A	0.1	Vitamin E
B	5.0	Sodium Cocoyl Isethionate (SCI) (85%)
B	20.0	Cocamidopropyl betaine (30%)
B	2.0	Coco-glucoside (52%)
B	62.6	Water
D	5.0	Glycerine
D	0.3	Xanthan gum
E	1.0	Germall Plus
	q.s	pH adjuster
	100.0%	Total

METHOD	1. Combine phase A materials.
	2. Combine phase B materials and heat until SCI is completely melted. Cool to 40°C
	3. Add phase A to phase B under slow stirring – be careful not to introduce too much air while stirring.
	4. Add A/B to phase C and stir slowly – be careful not to introduce too much air while stirring.
	5. Combine phase D into a smooth slurry first; then add to phase A/B/C slowly, ensuring the gum hydrates evenly as you are adding the slurry slowly. Keep stirring slow-medium to ensure the gum hydrates evenly but avoid introducing too much air. Stir until the gum is evenly hydrated. Product won't thicken properly until the preservative is added, so just ensure it is dispersed evenly at this point before continuing.
	6. Add phase E and stir through until homogenous.
	7. Check/adjust final pH.
	Final pH required: 6.0 – 6.5

Notes:

- Remember to let your product settle overnight (or a couple of days) to get all the bubbles out. A gentle stir each day to ensure ingredients are properly mixed and to break some bubbles can help, but make sure you don't stir too much – you want to break bubbles, not add them!
- Note how much more surfactant is used for a body wash compared to a face wash – the formulas are still very mild for the skin.

Product Name: Sulphate Free Shampoo

Phase	% w/w	Trade Name
A	3.0	Polysorbate 20
A	1.0	Essential oil blend
A	0.3	Vitamin E
B	21.0	Sodium lauroyl sarcosinates (30%)
B	12.0	Cocamidopropyl betaine (30%)
B	2.0	Coco-glucoside (52%)
C	47.5	Water
C	5.0	Polyquaternium-7 (9%)
D	6.0	Glycerine
D	1.2	Xanthan gum
E	1.0	Germall plus
	q.s	pH adjuster
	100.0%	Total

METHOD	1. Combine phase A materials.
	2. Combine phase B materials.
	3. Add phase A to phase B under slow stirring – be careful not to introduce too much air while stirring.
	4. Add A/B to phase C and stir slowly – be careful not to introduce too much air while stirring.
	5. Combine phase D into a smooth slurry first; then add to phase A/B/C slowly, ensuring the gum hydrates evenly as you are adding the slurry slowly. Keep stirring slow-medium to ensure the gum hydrates evenly but avoid introducing too much air. Stir until the gum is evenly hydrated.
	6. Add phase E and stir through until homogenous.
	7. Adjust final pH.
Final pH required: 5.5 – 6.0	

Notes:

- Monitor your stirring to limit the foam you produce – the more bubbles you add while stirring, the longer your product will take to settle!



Product Name: Creamy Conditioner

Phase	% w/w	Trade Name
A	82.2	Water
A	0.8	Guar Hydroxypropyltrimonium Chloride
B	2.0	Behentrimonium Chloride
B	5.0	Cetearyl Alcohol
B	2.0	Shea butter
C	5.0	Polyquaternium-7 (9%)
C	1.5	Essential oil blend
C	0.5	Vitamin E
C	1.0	Phenoxyethanol, Ethylhexylglycerin (Euxyl PE9010)
	q.s	pH adjuster
	100.0%	Total

METHOD	
	1. Combine ingredients in phase A. The guar will not dissolve but should disperse (not clumpy); this is normal at this step. Heat to 80°C.
	2. Combine phase B ingredients but DON'T HEAT.
	3. Add phase B to very hot phase A and stir under high shear (high speed) until phase B melts and a smooth, glossy looking emulsion forms.
	4. Continue stirring while product cools. At 40°C, add phase C ingredients and stir until homogenous.
	5. Check/adjust pH at 25°C.
	Final pH required: 4.0 – 4.5

Notes:

- Remember, your emulsion will set to a different viscosity the day after you make it – so evaluate it the next day as it will be a lower viscosity on the day you make it.
- Take special note of the method. Heating phase B could cause it to burn, which is why you melt it in the water instead of heating separately.
- Only water-soluble materials should be added at the end to ensure the conditioner works the way it is intended.
- Note the final pH required is lower than other formulas; you will find out why when you study hair physiology and formulations.

