

SOAP

SUDZ

+CO.



OUR STORY

About the brand name:-

- Soap suds is the bubbly layer made by soap which reflects our bubbly nature towards the target market
- The 'z' represents Generation Z, which is our target market as we have a trendy name and logo

Exclusivity of our products:-

- We used a special blending technique of mechanical blending and manual whisking to get consistency
- Our soap bars have designs that reflect abstracts of nature like leaves, fall, and tiger stripes
- Our product line features exclusive Marvel Cinematic Universe themed soap bars



THE SCIENCE OF SOAP

- Cold process, opposed to hot process, was used to make the soap which involves allowing the batter to saponify over the span of few weeks
- Saponification is a chemical reaction between fatty acids, triglycerides, and an alkali
- It results in fatty acids being converted into soap and alcohol, and requires a solution of alkali in water and heat
- For saponification of our soap, we used a mixture of four different oils for the fatty acids, and an aqueous solution of NaOH (lye)



OUR SOAP CALCULATOR

Oils	Percentage	Quantity (g)	Oil Properties								
Avocado Oil	30%	150.00	SAP (NaOH)	SAP (KOH)	Hardness	Cleansing	Bubbly Lather	Creamy Lather	Conditioning	Density	Cost
Canola Oil	0%	0.00	0.13	0.19	22.00	0.00	0.00	22.00	70.00	0.92	1.86
Corn Oil	0%	0.00	0.13	0.19	6.00	0.00	0.00	6.00	91.00	0.92	0.21
Crisco, old	0%	0.00	0.14	0.19	14.00	0.00	0.00	14.00	84.00	0.92	0.27
Ghee, any bovine	0%	0.00	0.14	0.19	26.00	0.00	0.00	26.00	70.00	0.81	0.42
Grapeseed Oil	0%	0.00	0.16	0.23	55.00	15.00	15.00	40.00	22.00	1.01	1.67
Olive Oil	30%	150.00	0.13	0.18	12.00	0.00	0.00	12.00	88.00	0.92	0.86
Sesame Oil	0%	0.00	0.14	0.19	17.00	0.00	0.00	17.00	82.00	0.92	0.6
Sunflower Oil	10%	50.00	0.13	0.19	15.00	0.00	0.00	15.00	83.00	0.92	1.77
Coconut Oil, 76 deg	30%	150.00	0.14	0.19	11.00	0.00	0.00	11.00	87.00	0.92	0.28
Total:	100%	500	0.18	0.26	79.00	67.00	67.00	12.00	10.00	0.92	1.63
Mass of Oils (g):		500	Contribution to Overall Soap								
Percentage of Water as a Percentage of Oils:		38%	Total - SAP (NaOH)	Total - SAP (KOH)	Total - Hardness	Total - Cleansing	Total - Bubbly Lather	Total - Creamy Lather	Total - Conditioning	Total - Cost	
Mass of Water (g):		190	19.95	27.90	6.60	0.00	0.00	6.60	21.00	\$ 0.61	
			0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$ -	
			0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$ -	
			0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$ -	
			0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$ -	
			0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$ -	
			20.25	28.50	5.10	0.00	0.00	5.10	24.60	\$ 0.20	
			0.00	0.00	0.00	0.00	0.00	0.00	0.00	\$ -	
			6.75	9.45	1.10	0.00	0.00	1.10	8.70	\$ 0.03	
			27.45	38.55	23.70	20.10	20.10	3.60	3.00	\$ 0.53	
Sum of Totals:			74.40	104.40	36.50	20.10	20.10	16.40	57.30	\$ 1.36	
Reccommended Ranges:			29-54		12-22.0		14-46		16-48		44-69
Targets:			38.00		21.00		17.00		18.00		60.00
Objective Function for Each Property:			2.25		0.81		9.61		2.56		7.29
Objective Function:			24.38								



OUR SOAP CALCULATOR

The soap calculator is used to get the following information after inputting desired percentages of selected oils and total mass of batter:

- the quantity of oil needed for an ideal batch of soap (not super fatted)
- the amount of lye needed to react with the oil
- the amount of water needed for the lye solution
- the cost of each material
- the final cost of the batch
- the contribution of each oil to the properties of the batch

COMPOSITION AND ALLERGENS

Oils In the Soap

- Coconut Oil: (30%) - 240 g
 - For the hardness property and cleansing process
 - To produce bubbly lather when using the soap
- Avocado Oil: (30%) - 240 g
 - To make our soap moisturizing
 - Contributes to the soap conditioning
 - Adds Creamy Lather
- Olive Oil: (30%) - 240 g
 - Has high conditioning properties
 - Increases creamy lather
 - Good for the skin



COMPOSITION AND ALLERGENS

More Oils In the Soap

- Sunflower Oil: (10%) - 240 g
 - Has very high conditioning properties
 - Inexpensive
- Vanilla Fragrance Oil: - 50 drops
 - Added a Vanilla extract to have a scent stronger than the smell of oils and an overall pleasant appeal.



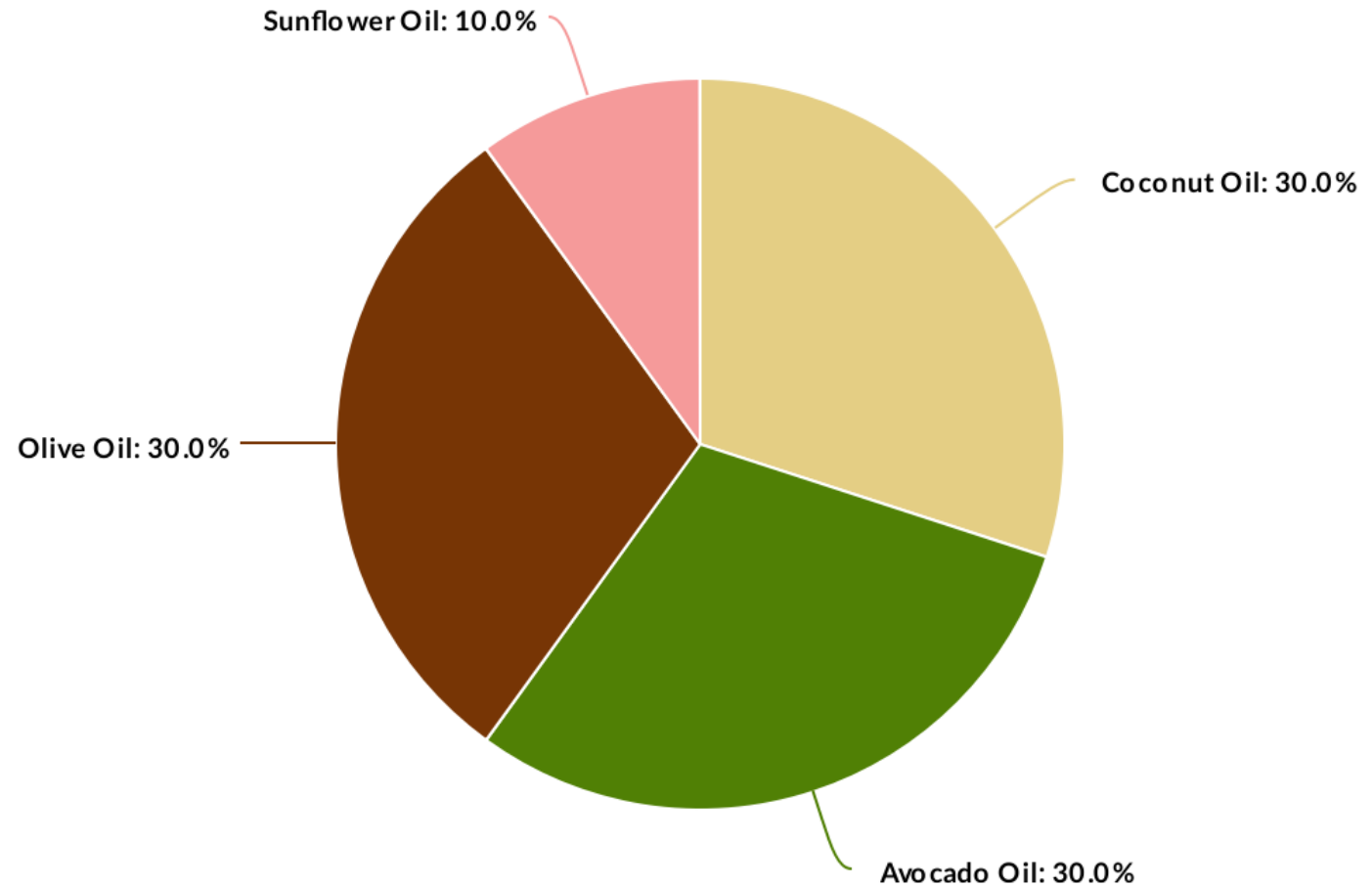
Additional Ingredients

- Sodium Hydroxide or Lye (NaOH): - 115g
 - To make the melted oils saponify to make soap
- Water (Tap Water) - 304g



COMPOSITION AND ALLERGENS

To the Right: A pictorial depiction of the composition of our soap. These ingredients were chosen for the numerous properties they bring to a bar of soap



Coconut Oil Avocado Oil Olive Oil Sunflower Oil

THE SOAP MAKING PROCESS

- The oils were individually weighed, poured into a metal vessel, and thoroughly mixed
- Since coconut oil is solid at room temperature, it had to be heated and melted first
- We separately weighed our lye and water, then poured the lye into the water in slowly. Extreme care was taken in this step as the solution is corrosive
- The mixture was continuously stirred and heated in order to get a homogenous solution



Pictured Above: Shots of the Soap Sudz and Co. Team mixing the soap batter to perfection

THE SOAP MAKING PROCESS

- Using a well-known technique found online, we poured our NaOH (lye) solution down the neck of the electric mixer to combine with our oils to avoid air bubbles
- We used a pattern of pulse, manual stirring with the electric mixer that ensured a proper trace (density of the soap)
- Then, we split the ideal-trace batch in 2, added different colored dyes and poured them sequentially into our molds
- We used recyclable milk cartons and a silicone star mold as our molds for the soap bars

FINAL PACKAGING

Twine

- Twine was used to make our packaging compact because it gave our packaging a rustic and authentic feel
- We decided to use hemp twine, as it is a great biodegradable alternative to synthetic ribbons or cotton twine
- Since the cost associated with twine is relatively cheaper, we were able to have competitive pricing compared to other brands while delivering artistic and fashionable products

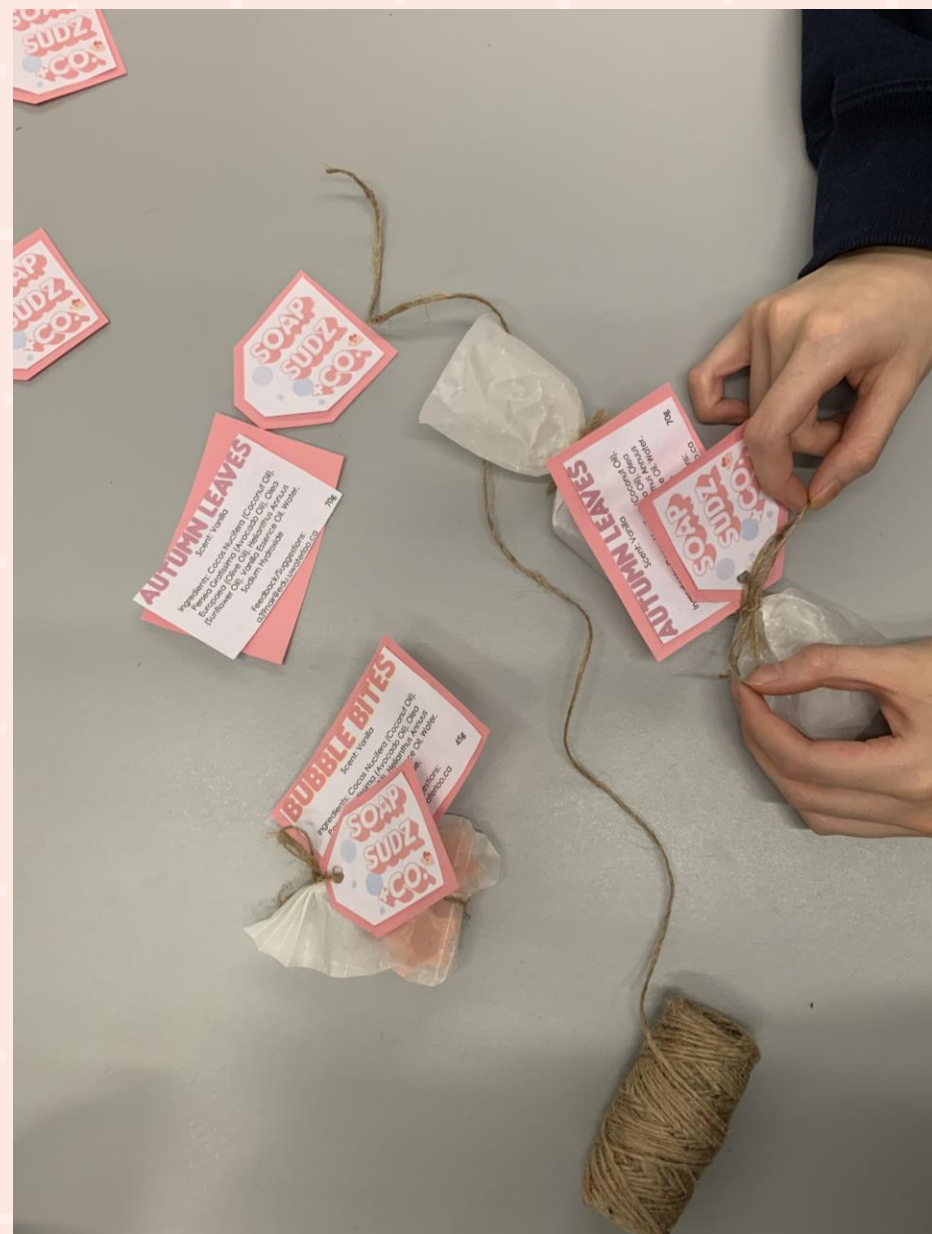


Pictured Above: The twine and wax paper we used in the packaging of our soap. We chose these materials as we felt they were the most environmentally friendly and economically feasible

FINAL PACKAGING

Wax Paper

- We had extra wax paper from the soap making process, so we used it in our packaging because it was a resource that we had a large amount of available to us. By implementing our extra wax paper into our packaging, we made our soap packaging inherently more efficient.
- Furthermore wax paper is a recyclable and biodegradable resource, making it an ideal material for our packaging.
- We also thought that wax paper would be a suitable choice because it has non wicking properties that we hoped would retain our soap's moisture as well as hold its shape as packaging.



Pictured Above: Shots of our bars of soaps as well as our 'bite' sized soap

PRICE AND PROFIT MARGIN

SOAPMAKING COST

Ingredients/800g soap:

1. Coconut Oil - \$4.25 CAD
2. Avocado Oil – \$4.85 CAD
3. Sunflower Oil – \$0.24 CAD
4. Olive Oil – \$1.56 CAD
5. Vanilla Fragrance Oil – \$2.88 CAD
6. Soap Dye – \$2.26 CAD
7. Lye(NaOH) – \$3.43 CAD

Equipment:

1. Mold – \$4.52 CAD
2. Twine – \$0.025 CAD
3. Wax Paper – \$1.20 CAD

Overall Cost: – \$25.22 CAD

PRICE AND PROFIT MARGIN

Product line and costs associated:-

Product	Cost Price	Selling price	Profit
Autumn leaves/ 70g	\$ 1.84	\$ 5.79	\$ 3.95
BubbleBitez and Krystalz/45g	\$ 1.18	\$ 4.49	\$ 3.31
LY 3000/60g	\$ 1.57	\$ 5.49	\$ 3.92

PROBLEMS WE FACED CREATING OUR SOAP

Prototype 1 problems:-

1. Insufficient addition of soap dye resulted in a lighter colour of soap bars than desired due to the yellow batter being more concentrated
2. A thin, white, flaky layer had formed on top of the soap bars. After researching about it, we found the cause to be incomplete saponification that resulted in soda ash being formed.
3. Air bubbles were accidentally introduced in the batter that gave it a rugged and uneven top. This made the bar visually unpleasant and unfinished as well.

SUGGESTED IMPROVEMENTS

Prototype 2 and further improvements:-

A) We achieved deeper color by adding more liquid soap dye to the batter

i. Powder dye, or mica, could be used for richer color using relatively smaller amount than liquid dye, due to its concentrated nature

B) Stronger and lasting fragrance was achieved by increasing the volume of vanilla oil

i. Lower volume of concentrated, costlier essential oils can be incorporated in the soapmaking process



SUGGESTED IMPROVEMENTS

C) Soda ash build up can be prevented by spraying the top of the soap with isopropanol when the soap is still in trace form within the mold

D) Air bubbles can be prevented by pouring the trace mixture down the neck of the blender, into the mixing vessel

- i. Pouring batter into the vessel creates downward momentum and this causes the liquid's surface to splash up, creating air pockets.
- ii. Another way to combat this is by tapping the mold container to bring the air bubble to the top.

**WE HOPE THAT YOU ENJOY USING
OUR SOAP AS MUCH AS WE ENJOYED
♥ MAKING IT! ♥**

**-SOAP SUDZ
AND CO.**



Soap Sudz and Co.
Team
(from left to right)
Gordon Wong
Ananya Muralidharan
Samantha Chim
Anand Nair

