



B Beauty

Navigator

**THE PACKAGING
MAPPING**

SCOPE OF THIS WORK

This Plastic Mapping intends to provide Cosmetic Companies with Guidelines to support their packaging design process. These guidelines include not only technical criteria linked to the performance required from packaging but also sustainability criteria that should be also considered a crucial part of the decision process: the MAP takes into account recyclability, recycled content, technical weaknesses & strengths as well as color and deco options available as well as market availability and cost. We used colors to showcase the best choices, however, they could potentially vary by region.

Ultimately, we would like this MAP to serve as a guide for any development team when choosing their packaging materials and be able to find the right supplier.

This tool is the result of the first collaborative project between a group of passionate experts and leaders from different B Corp Beauty Companies, however, it's still in its early stages. Ultimately, the goal is to create a guide that can be used as the precursor to the development of cosmetic and personal care products, enabling companies to be as sustainable as possible.

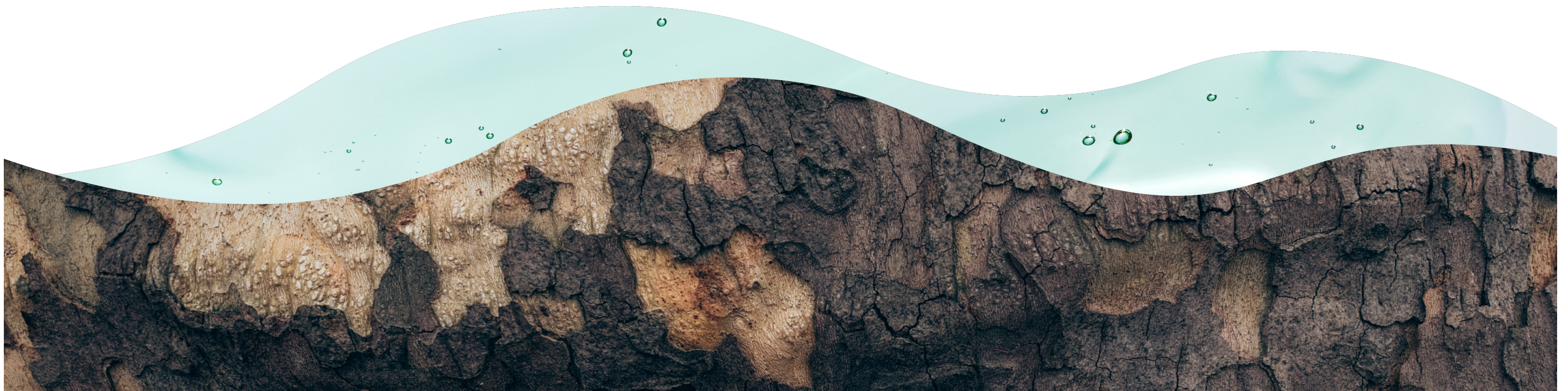


PACKAGING MAPPING	TYPE OF CRITERIA >	FEASIBILITY	FEASIBILITY	TECHNICAL PERFORMANCE	TECHNICAL PERFORMANCE	TECHNICAL PERFORMANCE	TECHNICAL PERFORMANCE	TECHNICAL PERFORMANCE	DESIGN	DESIGN	SUSTAINABILITY	SUSTAINABILITY	SUSTAINABILITY	SUSTAINABILITY	SUSTAINABILITY	SUSTAINABILITY		
PLASTIC TYPE	POTENTIAL APPLICATIONS (CAP, BOTTLE, JAR, TUBE)	MARKET AVAILABILITY (BASED ON USA & EUROPE)	COST ¹	AVAILABILITY OF FOOD-GRADE	ABILITY TO PROTECT THE CONTENT FROM EXTERNAL AGENTS (BARRIER PROPERTIES) ²	SOME TECHNICAL STRENGTHS	SOME TECHNICAL WEAKNESS	POTENTIAL APPLICATIONS	COLOR / COLORABILITY	DECORATION	RECYCLABILITY	RECYCLED CONTENT	SUSTAINABILITY CLAIM	NO EMISSION OR USE OF CONTROVERSIAL SUBSTANCES DURING PRODUCTION PROCESS	GREENHOUSE GAS EMISSIONS EUROPE ³ (KG OF CO2 EQ/KG)	GREENHOUSE GAS EMISSIONS USA ⁴ (KG OF CO2 EQ/KG)		
PVC ⁵	Bottle/Tube/Jars	ok	low	limited	good	Highest resistance durability, affordability, and workability.		beverages, beauty and household packaging	No limit	No limit	limited acceptance for recycling	N/A	N/A		2.41	3.05		
PET	Bottle/Bottle/jar	ok	low	widely available	good	clear, lightweight, stiffer than HDPE, good impact and temperature resistance. This plastic can be used for wider design	hot-fill requires special considerations	beverages, beauty and household packaging	Clear; transparent colors possible, requires colored preforms, reduces recyclability	label, direct deco, embossing, shrink sleeve	widely accepted for recycling (however it depends on the color) ⁶	N/A	recyclable	√	2.95	3.06		
rPET (100%PCR)	Bottle/Bottle/jar	ok	medium	widely available			reduced clarity,						up to 100%	Recyclable/recycled content	√	1.6	1.7	
Bio-PET	Bottle/Bottle/jar	Limited availability	very high	available									N/A	Recyclable/renewable source	√	2.33	2.33	
HDPE	Bottle/Tube/Jars / Caps	ok	low	widely available	excellent	lightweight, squeezable, high impact and temperature resistance, high hinge strength	not hot-fillable, translucent	beverages, beauty and household packaging	natural (milky); colors possible, dark colors reduce recyclability	label, direct deco, embossing, shrink sleeve	widely accepted for recycling	N/A	recyclable	√	1.95	2.33		
rHDPE	Bottle/Tube/Jars / Caps	ok	medium	not available			color duller						up to 100%	Recyclable/recycled content	√	1.1	1.3	
Bio-HDPE	Bottle/Tube/Jars / Caps	Limited availability	very high	available									N/A	Recyclable/renewable source	√	0.51	0.51	
PP	Bottle/Tube/Jars / Caps	ok	low	widely available	excellent	lightweight, stiffer than HDPE, hot-fillable, excellent hinge strength	fair impact resistance, can break under cold drop	beverages, beauty and household packaging	natural (milky, grey color...); colors possible, dark colors reduce recyclability	label, direct deco, embossing, shrink sleeve	widely accepted for recycling	N/A	recyclable	√	1.92	2.29		
rPP (100% PCR)	Bottle/Tube/Jars / Caps	ok	medium	not available										up to 100%	Recyclable/recycled content	√	1.2	1.3
Bio-PP	Bottle/Tube/Jars / Caps	Limited availability	very high	available ⁷										N/A	Recyclable/renewable source		0.51	0.51
Bio-Plastic Other (PLA, PBS, etc.)	To be checked, case by case in compatibility tests.	Limited availability	High	available	only moderate barrier properties	bio-sourced	brittleness, permeability to water	beauty packaging (dry), 3D pieces	natural; colors possible	label, direct deco, embossing, shrink sleeve	Compost ability to be checked in final packaging.	N/A	Compostable if passes the certification. Biodegradable if passes certain certifications.	√	2.42	2.72		

NOTES

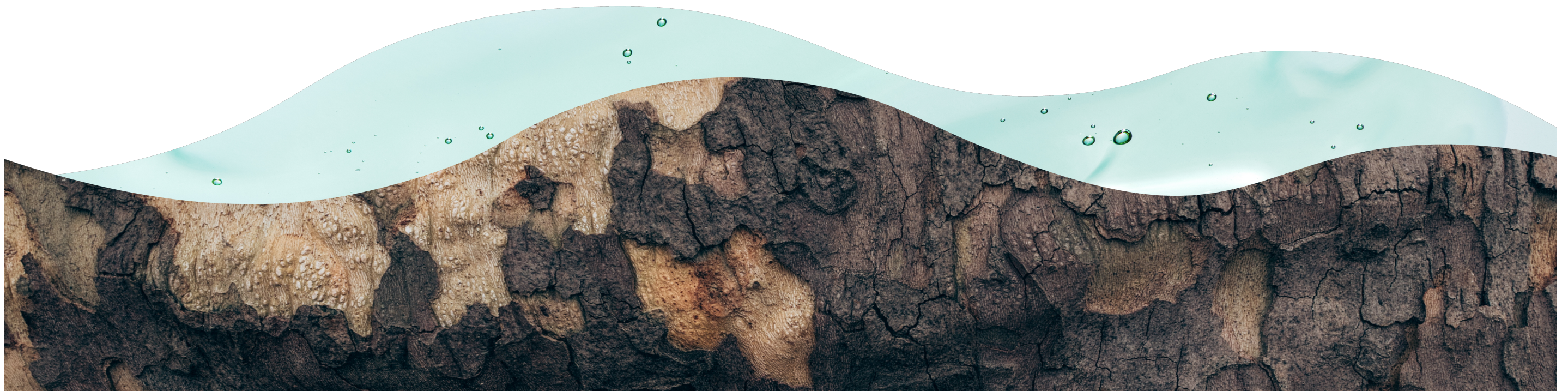
The quantity of plastic and the Size of the packaging also have an impact on the sustainability profile of the product and need to set accordingly

1. Medium is equivalent to +10% versus virgin. Very High is equivalent to +40% versus virgin.
2. The barrier properties depend on the material permeability and this value can change depending on what is intended to block. So, the material used will depend on the formulation we want to preserve.
3. Data source: Market-leading independent lifecycle assessment (LCA) tool for optimising the environmental performance of packaging designs.
4. These are average values calculated from Supplier's Product Sheet specs.



NOTES

5. PVC Polyvinyl chloride films and PVC packaging intended to come into contact with food are not banned in the European Union (EU). However, they must comply with the EU's Framework Regulation. Nevertheless, has been banned or restricted in a number of countries around the world, such as Canada, Spain, South Korea and the Czech Republic. Some U.S. cities such as Rahway, NJ and Glen Cove, NY have prohibited the use of PVC in food packaging or utensils.
6. It depends on the color. Currently only the Pet packaging coming from the food industry is widely recycled. Cosmetic industry is not recycled.
7. Coming from Brazil



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B Corp™ Beauty Coalition