Light-Weighting Bottles & Other Sustainable Considerations

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Lightweight Benefits

Pros

- Takes up less footprint
- Transportation is optimized
- Glass efficiencies can be met

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Lightweight Benefits

Pros

- Takes up less footprint
- Transportation is optimized
- Glass efficiencies can be met

Cons

- **Image poor**
- **Queues such as punts & thick necks eliminated**
- **Height limits**
- **Label panel issues**
- **Color is lighter**

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Bottle Weight Options

	Grams	Cases/Pallet	Pallet Lb	Btls/Truck	
Light Weight	*360*	*120 cs*	*1220*	*34560*	*Baseline*
Standard Wt	500	105 cs	1450	30240	12.5% Less
Fancier Bottles	600	98 cs	1625	28224	18.3% Less
Elegant Light	700	84 cs	11625	24192 (24 Plts)	30 % Less
Heavy Bottles	900	77 cs	1900	19404 (21 Plts)	43.9% Less
Very Heavy	1200	60 cs	2000	15120 (21 Plts)	56.3% Less

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Bordeaux

Paradis 840 g

Fiona 600 g

Tradition 500 g

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Burgundy

Cabo 900 g

Claire 660 g

Tradition 500 g

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Is this the best decision for your brand?

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Should we at Napa Green also be discussing the larger issue at hand…

SUSTAINABILITY?

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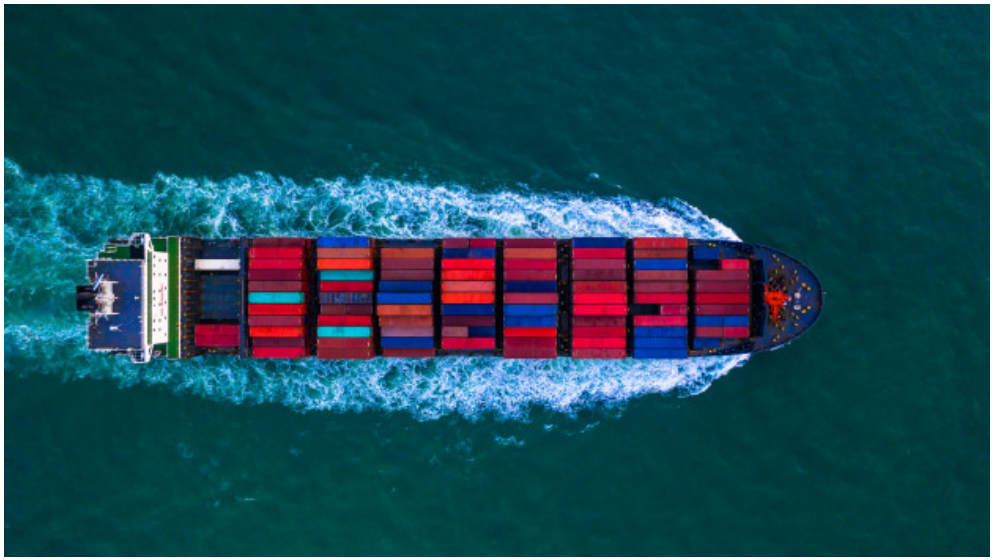
Sustainability Question

Is light-weighting the only solution or can we do better?

- Transportation
- Recycling
- Manufacturing



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Transportation

Decreasing greenhouse gas emissions

- 10 x more efficient by water than by truck
- 17 x more efficient by water than by Airfreight
- Europeans and Chinese have tightened environmental controls passing laws in 2018 to reduce sulfur in fuel
- LCA- Life Cycle Assessment, there is a small energy impact from transport of glass packaging

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Recycling

- US recycles 26.4% of all glass *but*
  - → **42% of all beverage containers are recycled!**
- California in 2016 recycled 44% of waste, down from 50% in 2014
- ½ of single stream is unusable due to contamination
  - → **20 years ago, usable was 98%**
- Recycling regulations are city specific

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Recycling

- China was the world's garage dump, receiving 50% of all garbage and 2/3 or all California garbage

- In 2017 China announced it would cease receiving contaminated recycling

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Manufacturing

To produce 1 ton of glass it takes 1.18 tons of materials

Glass Composition

- Sand
- Soda Ash
- Limestone
- Totaling 95% of batch
- Cullet is recycled glass, added at varying amounts

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Cullet

- For every 10% added to the furnace there is 2-3% reduction in energy use and 5% reduction in CO_2 emission
- For every 6 tons of recycled glass1 ton of CO_2 is offset
- Cullet lowers energy use because no endothermal decomposition

Decreases

a. Raw material use
b. Transport costs
c. Pollutants

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Cullet - Amounts

Green & Antique	**90%**
Amber	**80%**
Flint	**65%**
Wild Glass	**Almost 100%**

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Solution!

Let's Find a Way to Use More Recycled Glass in all Glass Furnaces

Wild Glass Since 2020

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We don't have to save the world.
The world is big enough to look after itself.
What we have to be concerned about is whether or not the world we live in will be capable of sustaining us in it.

- Douglas Adams

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References

Food Weekly, How a Unique Industry Collaboration is bottling a New Future for U.S. Glass Recycling, Scott Breen and Jay Siegel, 10/12/2018

Fuel Costs in Ocean Shipping, Elizabeth Stratiotis, 1/29/18

End of Waste Foundation, Glass Recycling, O2 Emissions offset, Dan Dumitrescu,12/6/2019

Recycling Regulations are City Specific, San Diego Tribune Joshua Emerson Smith, 3/17/2019

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Thank You

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