


# Converting Volume units to Kilograms

CarbonCloud uses **kg** as the functional unit of the product in mind, which for beverage products results in:

- You need to have your **batch size** stated in **kg** to enter **Ingredients** in the CarbonCloud platform.
- You need to have the **net content** of the product stated in **kg** to enter **Packaging** information in the CarbonCloud platform.
- You need to have the final **output** of your product stated in **kg** to enter **Energy** use in the CarbonCloud platform.



**Rum**  
Production: MEX

Live • 21 min ago  
**3,29**  
kg CO<sub>2</sub>e/kg

Footprint General **Ingredients** Packaging Transport Energy Volumes Settings

Batch size ⓘ  
1000 kg

**List of Ingredients**  
Include all substances used during any stage of manufacturing—even if they aren't required on the final label. This includes core ingredients, additives, and any processing aids.  
[Show details and examples](#) ▾


+ Ingredient

Molasses	800	kg/batch size	🗑️
Water	250	kg/batch size	🗑️
Yeast	2	kg/batch size	🗑️
Cinnamon	2	kg/batch size	🗑️

Ingredient count  
**4**

Total amount  
(input)  
**1054,00 kg**

Total impact  
**0,10 kg**



**Rum**  
 Production: MEX

Live • 4 min ago  
**3,29**  
 kg CO<sub>2</sub>e/kg

Footprint General Ingredients **Packaging** Transport Energy Volumes Settings


Net content ⓘ

0,64092 kg

#### List of Packaging Materials

By default, the PCF from packaging is calculated based on country of production. If you know the specific information about the packaging material used for this product, please add it below, this will replace the default estimations. You can add as many materials as needed.

+ Material



**Rum**  
 Production: MEX

Live • 2 min ago  
**3,29**  
 kg CO<sub>2</sub>e/kg

Footprint General Ingredients Packaging Transport **Energy** Volumes Settings

#### Add Energy Types

Please add specific information about the energy used in the production or any kind of handling of this product that your organisations is responsible for. Added energy data is based on your selected processing/storage country.

Processing/Storage Country: Sweden

+ Energy

Solar power, own production (electricity) ▼

1,34 kWh/kg of output

To convert an amount stated in **liter** to the corresponding amount stated in **kg** you need to know the **density** of the product in mind.

$$\text{Density} = \rho = \frac{m}{V} \rightarrow m = \rho \times V$$

(*m* = mass, *V* = volume)

#### How to calculate the density?

- c) You know the density of your beverage from internal product information
- c) Measure the density with a hydrometer or a refractometer

For a) and b) use the density in Step 4.

- c) Calculate the density based on the ABV for the final product

If we go for c)

### Step 1: ABV for the beverage

Our rum has 40% ABV, this means:

- 40% ethanol by volume
- 60% water by volume

### Step 2: The densities of components

- Ethanol density  $\approx 0,789 \text{ kg/L}$  at  $20^\circ\text{C}$
- Water density  $\approx 1,000 \text{ kg/L}$  at  $20^\circ\text{C}$

### Step 3: Calculate mixture density

$$\begin{aligned}\rho &= (\%_{\text{ethanol}} \times \rho_{\text{ethanol}}) + (\%_{\text{water}} \times \rho_{\text{water}}) \\ \rho &= (0,40 \times 0,789) + (0,60 \times 1,000) \\ \rho &= 0,9156 \text{ kg/L}\end{aligned}$$

### Step 4: Convert liters to kilograms

$$\begin{aligned}\text{If you have 700 ml of rum} \\ \rho &= 0,9156 \text{ kg/L} \\ m &= \rho \times V \\ m &= 0,9156 \times 0,7 = 0,6409 \text{ kg}\end{aligned}$$

### Other volumes than liter?

1 cubic meter = 1000 liters

1 gallon = 3,78541 liters