

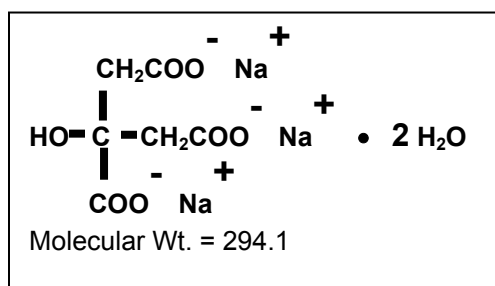


Calculating the Sucrose Equiv. of Ingredients that Dissociate in Water

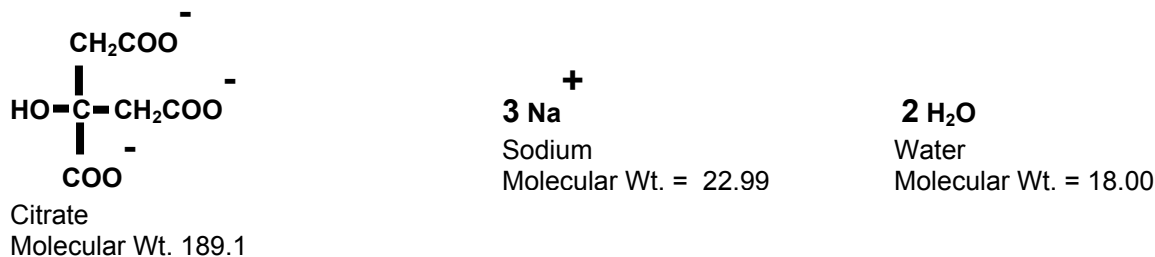
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The sucrose equiv. of an ingredient that can dissociate in water is calculated in a slightly different manner than non-dissociating ingredients. To assign a proper sucrose equiv., we need to know the molecular weight of each dissociated component as it exists in water.

For example, let's calculate the sucrose equiv. of Sodium Citrate. Sodium Citrate has the following formula and molecular weight:



It dissociates to the following:



The percentage of each dissociated component is calculated:

$$\begin{aligned}
 [189.1 / 294.1] \times 100 &= 64.3\% \text{ Citrate} \\
 [(3 \times 22.99) / 294.1] \times 100 &= 23.5\% \text{ Sodium} \\
 [(2 \times 18) / 294.1] \times 100 &= 12.2\% \text{ Water}
 \end{aligned}$$

The sucrose equiv. for each component is calculated:

$$\begin{aligned}
 [342.3 / 189.1] \times 100 &= 181.01 \text{ Sucrose Equiv of Citrate} \\
 [342.3 / 22.99] \times 100 &= 1488.9 \text{ Sucrose Equiv of Sodium} \\
 \text{Water has no sucrose equiv.}
 \end{aligned}$$

Finally the overall sucrose equiv. for sodium citrate is calculated:

$$\begin{aligned}
 (64.3 / 100) \times 181.01 &= 116.4 \\
 (23.5 / 100) \times 1488.9 &= \underline{349.9} \\
 \text{Total Sucrose Equiv} &= 466.3
 \end{aligned}$$