



Essential Minerals

Dairy Application Guide

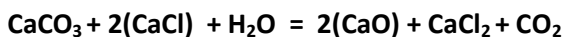


Milk Based Products

As Calcium Carbonate will act as a buffer and neutralize an acidic environment, there's two paths to using it in a milk based formulation

Pre-Neutralization

Mixing Calcium Carbonate with another dry acidic ingredient is the most efficient method as that will liberate the CO² leaving behind the elemental Calcium. If another acidic ingredient is not needed, the Calcium Carbonate can be mixed with Calcium Chloride to prebuffer both and be left with the combined resulting elemental Calcium at neutral pH.



Targeted Neutralization

Achieved by adding the precise amount of Calcium Carbonate needed to move the pH from acidic to more neutral with preserving the overall acidity of the end product.



Dairy Replacement Products

This process is most commonly used in non-dairy milk applications such as Almond, Oat, or Cashew milk along with lactate free yogurt.

In this approach Calcium Carbonate is added to the RO-DI water stream where the acidic nature of the purified water benefits from remineralization that leaves the water neutral pH and rich in Calcium. For this use a lot of emphasis has been placed on the particle size of the Calcium, where purity and trace metal content has been less of an emphasis.

Dissolution times are all comparable with particles sizes 6µm or less. Where focus should be instead is insoluble and trace metal content.

Micron Size	Dissolution Time at pH 5.5
2 µm	4 seconds
4 µm	6 seconds
6 µm	7 seconds

Essential Minerals products have ultra low insolubles, ultra low trace metals, and only Organic Certified Calcium Carbonate option to guarantee no residual solvents are being added.