

Effer-Soda®

Sodium Bicarbonate

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Effer-Soda[®] Sodium Bicarbonate



Effer-Soda, is a highly stable, surface modified sodium bicarbonate powder developed for use in pharmaceutical and nutraceutical applications. It addresses the challenges formulators face

when working with effervescent applications by removing trial and error. Effer-Soda helps formulators to develop stable effervescent formulations regardless of packing forms.

Enhanced Stability

A physical mixture of sodium carbonate, sodium bicarbonate cannot achieve results similar to Effer-Soda. Since sodium carbonate is not present throughout the tablet, there are local areas of contact between sodium bicarbonate and acid. If there is the presence of a slight amount of water, the formulation will effervesce and produce additional water. This will eventually create stability issues; however, with Effer-Soda, you get total protection. Each particle is surface modified to prevent an early reaction, **making a difference** in your product's stability performance.



Variety of Packaging Options

To differentiate the finished formulation, Effer-Soda offers you a variety of packaging options. Using sodium bicarbonate, the formulation needs to be packed in a tube pack with a desiccant. However, an effervescent formulation using **Effer-Soda** can be used in the strip, blister and sachet packaging options, helping the formulator differentiate their product in the market.



APPLICATION	PERCENT OF EFFER-SODA USED
Organoleptic enhancement in orodispersible systems	1 - 4% of formulation
Effervescent system within tablet or sachet	15 - 25% of formulation
pH buffering within formulation (no acid added) like floating drug delivery system	5 - 25% of formulation

Differentiating Formulations

Beyond uses in effervescent tablets and sachets, Effer-Soda can provide effervescence within a chewable or fast disintegrating system to improve organoleptics and taste profile. Micro environmental pH modification improves the release of weakly acidic drugs.



Excipients for Swallow Tablets



Taste Masked Actives



ODTs/ODPs



Effervescent Tablets



Vaccine Adjuvants



Soft Gel Capsules



Antacid & Laxative Ingredients



Chewable Tablets & Lozenges



Nutraceutical Applications

Effer-Soda® removes trial and error and helps formulators develop stable effervescent regardless of packing forms.

✉ salesinfo@spipharma.com

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Effer-Soda[®]

Surface Modification Provides Protection

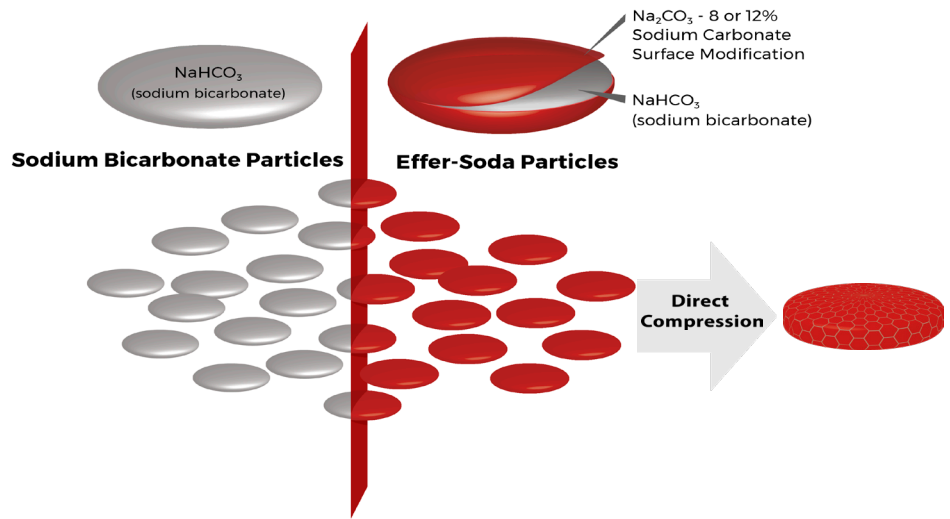
Sodium bicarbonate is a primary ingredient in effervescent tablets and powders. Together with an acid, such as citric acid or tartaric acid, sodium bicarbonate reacts in the presence of water to produce carbon dioxide. Consequently, the major disadvantage of sodium bicarbonate is that, in the presence of minute amounts of moisture and acid, it immediately effervesces. This reactivity can lead to formulation instability and premature effervescence in storage. Also, additional processing steps to pre-dry the powder along with special equipment and processing conditions are often required during manufacturing to avoid premature effervescence.

This issue can be resolved using Effer-Soda, which is pretreated to provide enhanced stability in effervescent formulations. This is achieved by converting the appropriate amount of sodium bicarbonate to sodium carbonate. The converted sodium carbonate acts as a desiccant skin, preventing premature effervescence.

In both effervescent tablets and effervescent sachets, each particle must be surface modified to avoid premature effervescence.

The Effer-Soda manufacturing process ensures that each particle of sodium bicarbonate is surface modified with sodium carbonate.

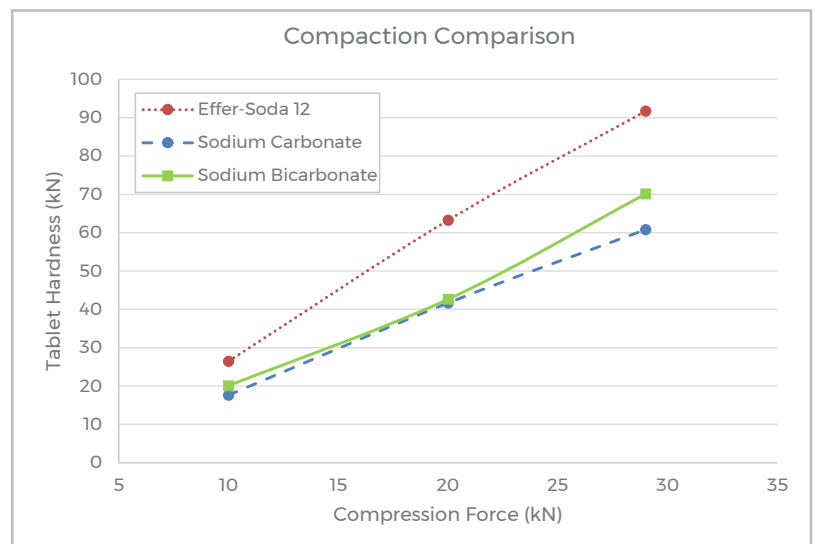
Each particle is surface modified with sodium carbonate



Better Compaction and Excellent Flow Properties

Effer-Soda is ideal for direct compression and sachet formulations compared to sodium bicarbonate. It has better compaction, allowing for less binder, resulting in an exceptional effervescent tablet. With a superior Carr's Index, Effer-Soda has an excellent flow compared to sodium bicarbonate.

Figure 1: Effer-Soda is More Highly Compactable Than Sodium Carbonate or Sodium Bicarbonate Alone



Making a Difference in Effervescent Formulations

Effer-Soda provides the effervescence desired by your customers while lowering product failures from premature effervescence. By reducing the need for costly humidity control during manufacture and expensive protective packaging, Effer-Soda can help drive productivity and profitability.

SPI Pharma's focus on the pharmaceutical industry means Effer-Soda is manufactured under cGMP guidelines, it has a Type IV US DMF to support the most advanced pharmaceutical applications.

Benefits of Effer-Soda

- Better Compaction
- Less Binder Required
- Lower Product Failures
- Excellent Flow

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