K-CARB PLUS

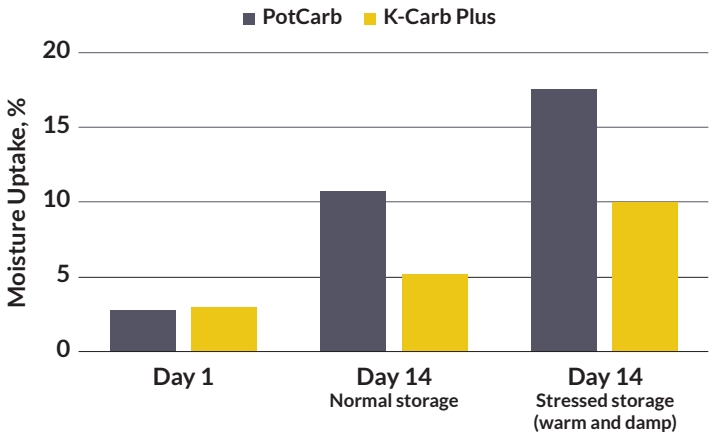
Stabilized potassium carbonate for dairy cows

K-Carb Plus is a granular anhydrous potassium carbonate treated with fatty acids in a proprietary process that limits water hydration and reduces chemical reactivity and corrosiveness. This offers the feed formulator a potassium-rich ingredient that stores well and is safer to use in feed preparation.

The value in K-Carb Plus is in its secure STORAGE and HANDLING

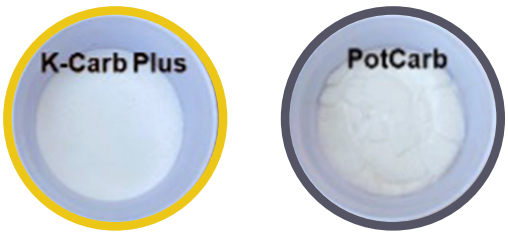
K-Carb Plus was tested in open containers in a warehouse environment and compared to common Pot Carb. Whether warehouse conditions were either normal or hot and humid (stressed), K-Carb Plus took up less moisture.

Less moisture uptake = less heating and caking!



Features and Benefits:

- Superior shelf life, free-flowing, handles in bulk
- Low reactivity with acidic or basic dairy ingredients
- High level of buffered potassium (53% K)
- Aid in support of higher milk fat and heat stress resistance



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Specifications

Ingredients:
Anhydrous potassium carbonate and hydrogenated soybean oil (5% inclusion)

Guaranteed Analysis (as-fed):
Potassium.....53% Min
Fat.....5% Min

Packaging:
50-lb poly bags
2000-lb totes
Bulk

Physical Properties:
White granule: (< #20 to > #80)
Bulk Density: 81 lbs

Usage Guidelines

Mixing K-Carb Plus into Dairy Feeds:

Although K-Carb Plus has been fat-stabilized, judicious mixing procedures should still be followed to prevent unforeseen reactions with other ingredients.
Some points to consider include:

- **Be more vigilant in humid weather** (or when water activity may be elevated). A number of chemical compounds used as dairy ingredients are capable of taking on moisture with potential hydration heating.
- **Avoid excessively dense blends** (e.g. base mixes) in which potassium carbonate and other reactive ingredients will be in close physical proximity. It is often the combined effects of friction and hydration heating that lead to serious heating and agglomeration issues in mixes. Fine powders, liquid ingredients, bypass fats, sugars, mineral salts, or amino acids all may have negative physical or chemical impacts on mix stability.
- **Add Potassium Carbonate last** to a typical dairy mineral blend.

Nutritional Application and Health Benefits:

- **K-Carb Plus is a supplemental +DCAD K source** that cost-effectively elevates both ration K and DCAD. Forages will always be the most cost-effective source of DCAD potassium.
- **For rumen and blood buffering,** K-Carb Plus supplies positive DCAD at +1370 mEq/100 g of DM
- **To increase milk fat by up to 0.2%,** include at least 50 grams of K-Carb Plus potassium to inhibit production of trans-10 fatty acids that are associated with milk fat depression.
- **To improve performance during heat stress** due to K loss and metabolic stress, only DCAD potassium is effective. Ration K should be raised up to 1.8% to 2.0% of dry matter.

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To the Lactating Cow…DCAD Potassium just means more

Because of its dominant role in the body as an electrolyte, potassium (K) is one of the most important nutrients in the ration. In a lactation cycle, the cow needs to eat a shocking 130 kg of potassium for top performance. While the cow could get by with a base level of 1.0% K in her ration dry matter, few nutritionists feed less than 1.4% K. The reason is that higher ration K affords many additional performance and risk management benefits. Many nutritionists choose to optimize the benefits of higher levels of supplemental K by using exclusively a buffer or +DCAD form of K. This is where a protected potassium carbonate, such as K-Carb Plus, enters the stage.

What are the benefits of positive DCAD potassium?

- **Positive DCAD buffers the cow's whole system,** raising rumen pH and stabilizing blood electrolyte balance. While both sodium bicarb class products and potassium carbonate contribute to positive DCAD, their use in tandem appears to yield better results in cow performance.
- **Fresh cows need more K**, according to studies that suggest that K excretion is higher after calving. Positive DCAD will have a greater impact in fresh cows for helping adapt the rumen to the lactation ration and in boosting feed intake.
- **Only positive DCAD potassium works during heat stress.** There is extensive research showing that +DCAD is highly beneficial during heat stress. Unfortunately, potassium sources that are not in the DCAD form (such as KCl) reduce total ration DCAD and reduce the impact of extra K supplementation. Because heat stress significantly increases K losses in sweat, the cow needs more K. The only real option, however, is +DCAD potassium. Ration K is often raised up to 1.8% or even 2.0% of dry matter during heat stress.
- **Higher K helps limit milk fat depression** by altering fat biohydrogenation in the rumen. Higher levels of rumen K inhibit rumen bacteria that produce *trans*-10 fatty acids, a known cause of milk fat depression. Including 50 or more grams of +DCAD K, may increase milk fat by as much as 0.2 points.
- **Higher K increases feed intake and total lactation performance**. Based on research and field experience, what might this look like in early lactation cows for a Canadian dairy?
    - Increasing K by 0.2% of ration DM may give us ***1.0 liter more milk daily.***
    - At a value of $0.90/liter of milk, using K Carb Plus could provide a potential **Net Return of $0.40 per cow daily.**

Why K-Carb Plus?

- **K-Carb Plus is technical K source** that is manufactured using a proprietary process that incorporates fatty acids into the crystalline structure of anhydrous potassium carbonate. This process greatly reduces the potential interaction of potassium carbonate with its environment. Untreated potassium carbonates (PotCarbs) are notoriously prone to absorb moisture (losing flowability) or to chemically react with other dairy ingredients, such as fat or minerals.
- **Very high potassium at 53% K.** The highest K level in the market
- **Excellent buffer and positive DCAD source** (+1370 mEq/100 grams)

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