Armand Products Company
500 Charles Ewing Boulevard, Ewing, NJ 08628
Phone: 609 806 1602 Fax: 609 403 7280

Technical Service
Phone: 800 733 1165 Option 2

Potassium Bicarbonate
Shelf Life, Retest and Storage Conditions

Potassium bicarbonate ($KHCO_3$ or KBC) is an inorganic chemical, that when stored under perfect conditions, does not change nor chemically degrade with time. It is recommended that the KBC be stored at room temperature in a sealed container. Furthermore, this product must not be contaminated nor exposed to any situation that could cause a reaction. Under these conditions, potassium bicarbonate would have an infinite shelf life.

If dry potassium bicarbonate is exposed to air or allowed to contact moisture, on a weight basis the total alkalinity will decrease slightly because of the increased water content. This moisture does not chemically react with the KBC to form any other chemicals.

In reality, packages of KBC are not a perfect seal. The potassium bicarbonate will pick up some moisture and may not readily flow out of its container due to caking. However, this physical change causes no change in its chemical state.

If the potassium bicarbonate is properly stored and unadulterated, it may be used indefinitely. It is recommended that our customers use the FIFO (first in, first out) method of inventory as a means to minimize problems with packaged products.

Potassium bicarbonate may not fall absolutely into this stable mineral category since some decomposition can occur at elevated temperatures. However, KBC is an inorganic chemical that will remain stable for many years if it is kept dry and cool. The subsequent data presented here has been found through a search of the chemical literature.

When the temperature reaches 88°C (190°F), anhydrous KBC will yield about 1% per hour potassium carbonate. Rapid decomposition occurs at 177°C (350°F). Heating above 100°C (212°F) may produce dangerous levels of carbon dioxide gas. When solutions of KBC are elevated to 98°C (208°F), decomposition will cause an assay loss of 0.29% per hour. In short, if potassium bicarbonate is kept dry and well below 100°C (212°F), it is considered stable.

Normally a retest should be performed every two years. If however, the user requires only a portion of the container's contents and the precise % Total Alkalinity is critical, more frequent retesting is necessary. The product should also be tested for moisture content (% LOD).

Please feel free to contact our Technical Service staff should additional questions or concerns arise regarding this topic.

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