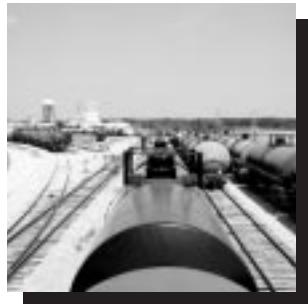




# Potassium Bicarbonate Handbook



# Potassium Bicarbonate Handbook

## Facts, Applications & Opportunities

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## **About Armand Products Company**

Armand Products Company is the only U.S. producer of Potassium Bicarbonate. Established in 1986, Armand Products is a joint venture of Occidental Chemical Corporation and Church & Dwight Co., Inc. Our modern ISO 9001:2015-certified production facilities in Muscle Shoals, Alabama, operate 24 hours a day, 365 days a year. Through active quality initiatives, we seek to continuously improve product performance and anticipate the needs of our customers.

## **The Potassium Bicarbonate Manufacturing Process**

Potassium bicarbonate is produced by reacting potassium carbonate with carbon dioxide, then recrystallizing it. All equipment used from production to packaging is dedicated solely to potassium bicarbonate.

Pure potassium carbonate, also manufactured right at our ISO-certified Muscle Shoals facility, is produced from potassium hydroxide, which is manufactured at Occidental Chemicals' Taft, LA facility. This control of all aspects of the manufacturing chain helps to achieve the highest possible standards of purity, while conforming to the Good Manufacturing Practices set forth by the FDA.



## General Properties of Potassium Bicarbonate

Potassium bicarbonate is a GRAS food ingredient. It is an odorless, noncombustible, white crystalline powder that is stable under normal conditions. Potassium bicarbonate contains no toxic chemicals and is not listed as a carcinogen or potential carcinogen. For an SDS or additional product and safety information call Technical Service.

Empirical formula	$\text{KHCO}_3$
CAS number	298-14-6
Appearance	White granular powder
Taste	Slightly salty
Molecular weight	100.12
Solubility in alcohol	Insoluble
Alkali equivalent	1 lb. $\text{KHCO}_2$ = 0.471 lb. $\text{K}_2\text{O}$
Acid equivalent	1 lb. $\text{KHCO}_2$ = 0.365 lb. $\text{HCl}$
Carbon dioxide equivalent	1 lb. $\text{KHCO}_2$ = 0.440 lb. $\text{CO}_3$
pH, 1% solution at 77° F	Approximately 8.2
Solubility in Water	17% by weight
32°F (0°C)	23% by weight
68°F (20°C)	30% by weight
104°F (40°C)	37% by weight
140°F (60°C)	Decomposes without melting into
Thermal Decomposition	$\text{K}_2\text{CO}_3$ , $\text{H}_2\text{O}$ , and $\text{CO}_2$

# IV.

## Grades and Packaging

**USP Grade** - Potassium Bicarbonate meets the U.S. Pharmacopoeia and the Food Chemical Codex (FCC) chemical test requirements.

50 lb. bag  
300 lb. drum

**Food Grade** - Potassium Bicarbonate is produced in compliance with the Food and Drug Administration's regulations pursuant to the Food Safety Modernization Act. Also meets FCC, cGMP, GFSI, Kosher and Halal standards and is produced at our SQF Certified Facility.

50 lb. bag  
300 lb. drum

**ACS Grade** - Potassium Bicarbonate meets the chemical requirements set by the American Chemical Society for reagent quality chemicals.

100 lb. drum  
300 lb. drum

Packaging requirements visit our website  
(<https://www.armandproducts.com>)

or contact Technical Service at [Chloralkali\\_Tech\\_Service@Oxy.com](mailto:Chloralkali_Tech_Service@Oxy.com).

# V. **Functionality...**

## **Discover the Versatility of Potassium Bicarbonate**

- ◆ Classified by the FDA as a food ingredient “generally recognized as safe” (GRAS)
- ◆ A strong buffer with mild alkalinity
- ◆ Less caustic than carbonates and hydroxides
- ◆ Gentle reactivity for controlled neutralization
- ◆ Thermal stability up to 350° F
- ◆ Water soluble
- ◆ Dissolves quickly
- ◆ A convenient source of carbon dioxide in baking applications
- ◆ A corrosion inhibitor
- ◆ A convenient source of potassium

# VI. End Uses

## Fire Extinguisher Ingredient

- ◆ Dry powder fire extinguishers
- ◆ Efficient fire extinguishing agent for Class B (flammable liquids and gases) and Class C (electrical) type fires
- ◆ Automatic release systems for fire prevention
- ◆ Airfield, petrochemical, naval and other commercial applications
- ◆ Scavenger of acidic fire by-products

## Agriculture – Soils

- ◆ The absorption of potassium by soils is enhanced by the bicarbonate
- ◆ Reduces the loss of cations in acidic or neutral soils and increases the action of phosphate fertilizers
- ◆ Corrects soil pH, reduces acidity

## Agriculture Fertilizer – Crops

- ◆ For crops where the use of KCl is detrimental
- ◆ Potatoes – larger protein and starch yield
- ◆ Tobacco – reduces leaf size but improves color and burn properties
- ◆ Alfalfa – Speed drying process of cut crop or decrease drying time of cut crop

## Feed

- ◆ When used as a nutritional supplement, potassium bicarbonate is reported to give increased feed consumption and weight gain in livestock

## Catalyst

- ◆ Polymerization of synthetic fibers
- ◆ Dehydrogenation of olefins

## Food and Beverage

- ◆ electrolyte replenisher and potassium supplement
- ◆ Used in foods as a leavening agent, pH control agent, and a nutrient supplement (e.g., infant formulations)
- ◆ A processing aid in extruded foods
- ◆ Foaming and fizzing agent in instant beverages
- ◆ Serves as a color preservative in foods

## Other Uses

- ◆ Impregnated paper or cellulose can be used as a filter to remove HCN and other acidic gases from tobacco smoke
- ◆ Household odor remover
- ◆ An accelerator in fast setting cements
- ◆ Used in aqueous resin-based coatings and adhesives
- ◆ High-temperature polymer blowing agent
- ◆ Detergent builder
- ◆ Hair and skin products

# Q&A

## How can I get a product sample or place an order?

Sample requests can be made on our website at [www.ArmandProducts.com](http://www.ArmandProducts.com) and clicking on the Sample Request tab and filling in your information. Or call Customer Service at the number provided below and they will be happy to take your order.

### Are there experienced people with whom I can discuss specifications, packaging, end uses, safety and other technical requirements over the phone?

Yes, contact a Technical Service representative.

### What methods are used to analyze potassium bicarbonate?

The methods used can be found in the current USP Monograph for Potassium Bicarbonate.

### Armand Products Company

500 Charles Ewing Boulevard  
Ewing, New Jersey 08628 USA

**Customer Service**  
**Technical Service**

1-800-522-0540  
1-800-733-1165 Option 2

### Legal caveat:

All information, recommendations and suggestions appearing in this brochure concerning the use of our products are based upon tests and data believed to be reliable; however, it is the user's responsibility to determine the suitability for their own use of the products described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Armand Products Company. Nor does Armand Products Company assume any liability arising out of use by others of the products referred to herein. Nor is the information herein to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist, or because of applicable laws or government regulations. Nothing herein contained is to be construed as permission or as a recommendation to infringe any patent.



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### **Customer Service**

**NJ only**

### **Technical Service**

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