

# Potassium bicarbonate

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**Potassium bicarbonate** (also known as **potassium hydrogen carbonate** or **potassium acid carbonate**) is a colorless, odorless, slightly basic, salty substance. According to the US [Food and Drug Administration](#) (FDA), potassium bicarbonate is "generally recognized as safe".<sup>[2]</sup> There is no evidence of human [carcinogenicity](#), no adverse effects of overexposure, and an undetermined LD<sub>50</sub>. Physically, potassium bicarbonate occurs as a crystal or a soft white granular powder. Potassium bicarbonate is very rarely found in its natural form, the mineral called **kalicinite**.

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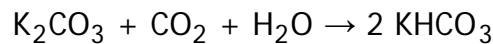
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## Chemistry [edit]

Decomposition of the bicarbonate occurs between 100 °C and 120 °C:



It is manufactured by reversing the above: reaction of [potassium carbonate](#) with [carbon dioxide](#) and water.



## Uses [edit]

The compound is used as a source of [carbon dioxide](#) for [leavening](#) in baking, extinguishing fire in dry chemical [fire extinguishers](#), acting as a [reagent](#), and a strong [buffering agent](#) in medications.

<b>Potassium bicarbonate</b>	
$\text{K}^+$	
IUPAC name	
	<a href="#">[hide]</a>
potassium hydrogen carbonate	
Other names	
	<a href="#">[hide]</a>
potassium acid carbonate	
Identifiers	
CAS number	<a href="#">298-14-6</a> ✓
PubChem	<a href="#">516893</a>
ChemSpider	<a href="#">55053</a> ✓
EC number	<a href="#">206-059-0</a>
ATC code	<a href="#">A12BA04</a>
Jmol-3D images	<a href="#">Image 1</a>
SMILES	
	<a href="#">[show]</a>
InChI	
	<a href="#">[show]</a>
Properties	
Molecular formula	$\text{KHCO}_3$
Molar mass	100.115 g/mol
Appearance	white crystals
Odor	odorless
Density	2.17 g/cm <sup>3</sup>
Melting point	292 °C (558 °F; 565 K) (decomposes)
Solubility in water	33.7 g/100 mL (20 °C) 60 g/100 mL (60 °C)
Solubility	practically insoluble in alcohol

It is used as an additive in [winemaking](#) and as a base in foods and to [regulate pH](#). It is a common ingredient in [club soda](#), where it is used to soften the effect of effervescence.

Potassium bicarbonate is used as a fire suppression agent ("BC dry chemical") in some dry chemical [fire extinguishers](#), as the principal component of the [Purple-K](#) dry chemical, and in some applications of [condensed aerosol fire suppression](#). It is the only dry chemical fire suppression agent recognized by the [National Fire Protection Association](#) for firefighting at airport crash rescue sites. It is about twice as effective in fire suppression as [sodium bicarbonate](#).<sup>[3]</sup>

Potassium bicarbonate is an effective [fungicide](#) against [powdery mildew](#) and [apple scab](#), allowed for use in [organic farming](#).<sup>[4][5] [6][7]</sup>

Potassium bicarbonate is often found added to bottled water to affect taste.<sup>[8]</sup>

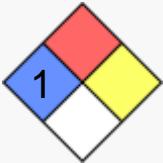
Potassium bicarbonate has widespread use in crops, especially for [neutralizing acidic soil](#)<sup>[citation needed]</sup>

## History [edit]

The word *saleratus*, from [Latin](#) *sal aeratus* meaning "aerated salt", was widely used in the 19th century for both potassium bicarbonate and sodium bicarbonate. The term has now fallen out of common usage.

## References [edit]

1. ^ [a b](#) Goldberg, Robert N.; Kishore, Nand; Lennen, Rebecca M. (2003). "Thermodynamic quantities for the ionization reactions of buffers in water". In David R. Lide. *CRC handbook of chemistry and physics* (84th ed.). Boca Raton, FL: CRC Press. pp. 7–13. ISBN 978-0-8493-0595-5. Retrieved 6 March 2011.
2. ^ GRAS Notification Program (October 31, 2006). "Potassium bicarbonate". *GRAS Substances (SCOGS) Database*. US FDA. Archived from the original [\[dead link\]](#) on March 5, 2011. Retrieved March 5, 2011.

Acidity ( $pK_a$ )	10.329 <sup>[1]</sup> 6.351 (carbonic acid) <sup>[1]</sup>
<b>Thermochemistry</b>	
Std enthalpy of formation $\Delta_f H^\ominus_{298}$	-963.2 kJ/mol
<b>Hazards</b>	
MSDS	<a href="#">MSDS</a>
EU Index	Not listed
R-phrases	<a href="#">R36</a> <a href="#">R37</a> <a href="#">R38</a>
NFPA 704	
Flash point	Non-Flammable
LD <sub>50</sub>	> 2000 mg/kg (rat, oral)
<b>Related compounds</b>	
Other anions	Potassium carbonate
Other cations	Sodium bicarbonate Ammonium bicarbonate
Related compounds	Potassium bisulfate Potassium hydrogen phosphate
Except where noted otherwise, data are given for materials in their <a href="#">standard state</a> (at 25 °C (77 °F), 100 kPa)	
✓ (verify) (what is: ✓/✗?)	
Infobox references	



3. ^ "Purple-K-Powder" . US Naval Research Laboratory. Retrieved 8 February 2012.
4. ^ <http://attra.ncat.org/attra-pub/bakingsoda.html>
5. ^ Powdery Mildew - Sustainable Gardening Australia
6. ^ Organic Fruit Production in Michigan
7. ^ [1]
8. ^ <http://time.com/3029191/bottled-water-ingredients-nutrition-health/>

A fire extinguisher containing potassium bicarbonate.

## External links [edit]

- [Potassium Bicarbonate Handbook](#)
- [OMRI Potassium Bicarbonate](#)

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### Potassium compounds

[\[show\]](#)

Categories: [Potassium compounds](#) | [Bicarbonates](#) | [Acid salts](#) | [Fire suppression agents](#)