

# Muffins - Bicarbonate Applications



Cake muffins are “low-ratio” chemically leavened sweet goods. In the U.S., a muffin resembles a cupcake in shape and size but is generally less sweet. There are many muffin formulas which are cupcake-like in terms of sweetness but most are slightly more bread-like in texture. Muffins are also more irregular in grain, more elastic, less tender and less crumbly than a cake.

Basic muffin recipes allow the baker to be creative and to use other seasonal ingredients such as fresh and dried fruits and berries. Muffin batters require minimal mixing and can quickly be prepared. When acidic fruits are used, such as blueberries, a small excess amount of sodium bicarbonate is added to improve the leavening and the crust color of the baked product.

## FORMULA EXAMPLES

Ingredient	Plain	Corn	Blueberry	Bran
Bread Flour	100.0	100.0	37.5	50.0
Pastry/Cake Flour	0.0	0.0	60.0	30.0
Corn Meal	0.0	35.0	0.0	0.0
Wheat Bran	0.0	0.0	0.0	20.0
Nonfat Dry Milk	7.5	10.0	7.5	0.0
Granulated Sugar	60.0	70.0	85.0	60.0
Dry Honey	0.0	0.0	0.0	10.0
Dry Molasses	0.0	0.0	0.0	5.0
Dry Whole Eggs	7.5	10.0	10.0	5.0
Salt	1.25	2.5	2.5	2.0
<b>Sodium Bicarbonate</b>	<b>1.5</b>	<b>2.25</b>	<b>1.6</b>	<b>2.0</b>
SAPP 28	2.0	3.0	2.0	0.6
Vegetable Oil	0.0	0.0	40.0	20.0
Vegetable Shortening	40.0	25.0	0.0	0.0
Water	82.5	95.0	55.0	86.0
Raisins/Fruit Pieces	0.0	0.0	90.0	25.0

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## Bicarbonate Recommendation

### Sodium Bicarbonate Grade 1 Powdered:

Dissolves rapidly to assure quick, complete availability for reaction with acid ingredients.

### Sodium Bicarbonate Grade 1 TFF:

Treated with tricalcium phosphate to improve flow quality. Dissolves rapidly to assure quick complete availability for reaction with acid ingredients.

### Sodium Bicarbonate Grade 2 Fine Granular:

The narrow particle size distribution facilitates rapid, uniform blending. This grade is recommended for those products where minimal leavening during mixing and holding is desired.

### Flow K™ Potassium Bicarbonate:

Potassium bicarbonate food grade performs exceptionally well as a replacement for sodium bicarbonate in the leavening system for cakes, muffins and cookies. When substituting potassium bicarbonate in a formula, 19% more potassium bicarbonate is needed to yield equivalent carbon dioxide release to that of sodium bicarbonate.



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