



Ingredient Substitution

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At times it is necessary to use a substitution for a recipe ingredient. The substituted food may not perform exactly as the original food. Each ingredient has specific functions in a recipe, and a substitute may alter the flavor, color, texture, or volume, but still result in an acceptable finished product.

Ingredient	Amount	Substitute or Equivalent
LEAVENING AGENTS		
Baking Powder	1 teaspoon	¼ teaspoon baking soda plus 5/8 teaspoon cream of tartar, or ¼ teaspoon soda plus ½ cup fully soured milk or buttermilk, or ¼ teaspoon baking soda plus ½ tablespoon vinegar or lemon juice used with sweet milk to make ½ cup, or ¼ teaspoon baking soda plus ¼ to ½ cup molasses
Yeast, active dry	1 tablespoon	1 package active dry yeast, or 1 compressed yeast cake.
LIQUID		
While egg, raw	1 large = 3 T.; 1 c. = 5 large; 1 c. = 6 medium	2 egg yolks, or 3 tablespoons plus 1 teaspoon thawed frozen egg, or 2 tablespoons and 2 teaspoons dry whole egg powder plus an equal amount of water
Egg yolk, raw	1 = 1½ T. 1 c. = 12 large	3½ teaspoons thawed frozen egg yolk; or 2 tablespoons dry egg yolk plus 2 teaspoons water

Egg white, raw	1 = 2 T 1 c. = 8 large	2 tablespoons thawed frozen egg white, or 2 teaspoons dry egg white plus 2 tablespoons water
Cream, half & half (12-16% fat)	1 cup	7/8 cup milk and 3 tablespoons butter or margarine (for use in cooking and baking), or 1 cup evaporated milk, undiluted
Cream, light (18-20% fat)	1 cup	7/8 cup milk and 3 tablespoons butter or margarine (for use in cooking and baking), or 1 cup evaporated milk, undiluted
Cream, heavy (36-40% fat)	1 cup (2-2½ cups whipped)	¾ cup milk and ⅓ cup butter or margarine (for use in cooking and baking)
Milk, whole	1 cup	1 cup reconstituted nonfat dry milk plus 2½ teaspoons butter or margarine, or ½ cup evaporated milk plus ½ cup water, or ¼ cup sifted dry whole milk powder plus 7/8 cup water
Milk	1 cup	⅓ cup instant nonfat dry milk plus 1 cup minus 1 tablespoon water or 3 tablespoons sifted regular nonfat dry milk plus 1 cup minus 1 tablespoon water
Milk, sweetened, condensed	1 can = 1 ⅓ cup	1 cup plus 2 tablespoons dry milk plus ½ cup warm water; mix well, add ¾ cup sugar and 3 tablespoons melted butter or margarine. Stir until smooth. Or ⅓ cup plus 2 tablespoons evaporated milk, 1 cup sugar, and 3 tablespoons melted butter or margarine. Heat and stir until sugar and butter dissolve.
Buttermilk or Sour milk	1 cup	1 tablespoon vinegar or lemon juice plus enough sweet milk to make 1 cup (let stand 5 minutes) or 1¾ teaspoons cream of tartar plus 1 cup sweet milk, or 1 cup plain yogurt

Sour Cream	1 cup	1 cup plain yogurt, or 7/8 cup sour milk plus 1/3 cup butter
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SUGAR

Granulated sugar	1 cup	1 cup corn syrup (decrease liquid called for in recipe by 1/4 cup), or 1 cup molasses (decrease liquid called for in recipe by 1/4 cup), or 1 cup brown sugar, firmly packed, or 3/4 cup honey (decrease liquid called for in recipe by 1/4 cup; for each cup of honey in baked goods, add 1/2 teaspoon soda); Equivalent: 1 pound granulated sugar = 2 1/4 cups
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Brown sugar	1 cup (firmly packed)	1 cup granulated sugar Equivalent: 1 pound brown sugar = 2 1/2 cups firmly packed
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Light brown sugar	1 cup	1/2 cup dark brown sugar plus 1/2 cup granulated sugar
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Powdered sugar		Equivalent: 1 pound powdered sugar = 3 1/2–4 cups
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Corn syrup	1 cup	1 cup sugar plus 1/4 cup liquid
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Dark corn syrup	1 cup	3/4 cup light corn syrup and 1/4 cup light molasses
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Honey	1 cup	1 1/4 cups sugar plus 1/4 cup liquid
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FLOUR

Flour used as thickener	1 tablespoon	1/2 tablespoon cornstarch, potato starch, rice starch or arrowroot starch, or 1 tablespoon quick-cooking tapioca
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All-purpose flour	1 cup sifted	1 cup unsifted all-purpose flour minus 2 tablespoons, or 1 cup plus 2 tablespoons cake flour; Equivalent: 1 pound = 4 cups sifted or 3 1/3 cups unsifted
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Cake flour	1 cup sifted	1 cup minus 2 tablespoons sifted all-purpose flour ($\frac{7}{8}$ cup); Equivalent: 1 pound = $4\frac{3}{4}$ cups
Self-rising flour	1 cup sifted	1 cup sifted all-purpose flour plus $\frac{1}{2}$ teaspoons baking powder and $\frac{1}{2}$ teaspoon salt
Whole wheat flour	1 cup	1 cup all-purpose flour; Equivalent: 1 pound = $3\frac{3}{4}$ cups
Cornmeal, self-rising	1 cup	$\frac{7}{8}$ cup plain, $\frac{1}{2}$ tablespoons baking powder and $\frac{1}{2}$ teaspoon salt; Equivalent: 1 pound = 3 cups

FAT

Shortening, solid (used in baking)	1 cup	$\frac{7}{8}$ cup lard, or $1\frac{1}{8}$ cups butter or margarine (decrease salt in recipe by $\frac{1}{2}$)
Shortening, melted	1 cup	1 cup cooking oil
Cooking oil*	1 cup	1 cup melted shortening
Butter	1 cup	1 cup margarine, or $\frac{7}{8}$ to 1 cup hydrogenated fat plus $\frac{1}{2}$ teaspoon salt, or $\frac{7}{8}$ cup lard plus $\frac{1}{2}$ teaspoon salt, or $\frac{4}{5}$ cup bacon fat, clarified, or $\frac{3}{4}$ cup chicken fat, clarified, or $\frac{7}{8}$ cup oil

*Do not substitute oil for solid fat in a baking recipe unless you have a baking recipe which specifically calls for oil or melted fat. Characteristics of the final product could be significantly different.

RICE AND PASTA

Rice	1 pound	8 cups cooked, or $2\frac{1}{4}$ – $1\frac{1}{2}$ cups uncooked
	1 cup uncooked (regular)	1 cup uncooked converted rice, or 1 cup uncooked brown rice, or 1 cup uncooked wild rice, Equivalent: 1 cup uncooked = $3\frac{1}{2}$ – 4 cups cooked
Rice, instant		Equivalent: 1 cup uncooked = 1 cup cooked

Macaroni, 1-inch pieces	1 pound	3-3/4 cups uncooked macaroni, or 16 ounces of any pasta; Equivalent: 1 pound = 9 cups cooked
Macaroni, shell	1 pound	4-5 cups uncooked macaroni; Equivalent: 1 pound = 9 cups cooked
Noodles, 1-inch pieces	1 pound	6-8 cups uncooked noodles; Equivalent: 1 pound = 8 cups cooked
Spaghetti	1 pound	4-5 cups of 2-inch pieces; Equivalent: 1 pound = 9 cups cooked

SPICES

Allspice	1 teaspoon	1/2 teaspoon cinnamon and 1/2 teaspoon ground cloves
Apple pie spice	1 teaspoon	1/2 teaspoon cinnamon, 1/4 teaspoon nutmeg, 1/8 teaspoon cardamon
Pumpkin pie spice	1 teaspoon	1/2 teaspoon cinnamon, 1/4 teaspoon ginger, 1/8 teaspoon allspice, 1/8 teaspoon nutmeg

MISCELLANEOUS

Chocolate	1 ounce	3 tablespoons cocoa plus 1 tablespoon fat
Semisweet chocolate	1 ounce	1/2 ounce baking chocolate plus 1 tablespoon sugar
Cocoa	1/4 cup or 4 tablespoons	1 ounce (square) unsweetened chocolate (decrease fat called for in recipe by 1/2 tablespoon)
Cornstarch (for thickening)	1 tablespoon	2 tablespoons all-purpose flour; or 2 tablespoons granular tapioca
Gelatin, flavored	3 ounces	1 tablespoon plain gelatin and 2 cups fruit juice

Lemon

Equivalent: 1 medium = 1 to 3
tablespoons juice, 1 to 2
teaspoons grated peel

Lemon juice

1 teaspoon

½ teaspoon vinegar

Equivalent Measures

This Much	Equals This Much
1 gallon	4 quarts
1 quart	2 pints
1 pint	2 cups
1 bushel	4 pecks
1 peck	8 quarts
1 cup	16 tablespoons
7/8 cup	14 tablespoons or 1 cup minus 2 tablespoons
¾ cup	12 tablespoons
2/3 cup	10 ² / ₃ tablespoons
5/8 cup	10 tablespoons
½ cup	8 tablespoons
3/8 cup	6 tablespoons
1/3 cup	5 ¹ / ₃ tablespoons
¼ cup	4 tablespoons
1/8 cup	2 tablespoons
1/16 cup	1 tablespoon
1 tablespoon	3 teaspoons
¾ tablespoon	2 ¹ / ₃ teaspoons
2/3 tablespoon	2 teaspoons
½ tablespoon	1½ teaspoons
1/3 tablespoon	1 teaspoon
¼ tablespoon	¾ teaspoon
Pinch or dash	1/16 teaspoon

References

Handbook of Food Preparation, Eighth Edition. American Home Economics Association, Washington, D.C.

“Ingredient Substitution and Equivalent Chart,” Circular HE-585. Oleana Carden Zenoble, Alabama Cooperative Extension Service, Auburn University.

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