

# Consumer Package Labeling Guide: Selling by Weight



**NIST SP 1020-1**

# Consumer Package Labeling Guide: Selling by Weight

Kathryn M. Dresser  
National Institute of Standards and Technology  
Weights and Measures Division  
Gaithersburg, MD 20899-2600



**U.S. Department of Commerce**  
Carlos M. Gutierrez, Secretary

**Technology Administration**  
Michelle O'Neill, Acting Under Secretary  
of Commerce for Technology

**National Institute of  
Standards and Technology**  
William A. Jeffrey, Director

NIST SP **1020-1**  
August 2005

Certain commercial entities, equipment, or materials may be identified in this document in order to describe an experimental procedure or concept adequately. Such identification is not intended to imply recommendation or endorsement by the National Institute of Standards and Technology, nor is it intended to imply that the entities, materials, or equipment are necessarily the best available for the purpose.

**National Institute of Standards and Technology Special Publication 1020-1**  
**Natl. Inst. Stand. Technol. Spec. Publ. 1020-1, 18 pages (August 2005)**

---

Available through NIST Weights and Measures Division  
100 Bureau Drive STOP 2600  
Gaithersburg, MD 20899-2600  
Phone: (301) 975-4004 — Fax: (301) 926-0647  
Internet: [www.nist.gov/owm](http://www.nist.gov/owm)

## **I**ntrouduction

This guide is intended to provide manufacturers, packers, distributors, and retailers of packaged products with information about the labeling requirements for commodities that are sold by weight in the consumer marketplace. The information in this guide is based on the Uniform Packaging and Labeling Regulation contained in NIST Handbook 130<sup>1</sup> . NIST develops Handbook 130 in cooperation with the National Conference on Weights and Measures, an organization of industry representatives, government officials, and other interested parties. Handbook 130 is adopted and enforced by many state and local regulatory agencies.

## **D**eclaration of Identity

The identity of the product shall appear on the package label and shall not be misleading or deceptive. When the label appears directly on the package, the identity of the product shall appear on the principal display panel and be generally parallel to the base of the package. The principal display panel is the panel of the package that the manufacturer, packer, or distributor intends to be displayed at retail. Directions on how to determine the area of the principal display panel are included later in this guide. The base of the package shall be determined by how the package is designed to be displayed.

The identity shall be:

- the name specified in, or required by, any federal or state regulation, or
- the common or usual name, or
- the generic name or other appropriate description, including a statement of function.

For example: "cleaning powder," or "corn chips."

---

<sup>1</sup>"Uniform Laws and Regulations in the area of legal metrology and engine fuel quality."

## **D**eclaration of Responsibility

The name and address of the manufacturer, packer, or distributor shall be conspicuously displayed on any package that is sold, kept, offered, or exposed for sale at a location that is different from where it was packed. The name shall be the actual corporate name or, when not incorporated, the name under which business is conducted. The address shall include the street address, city, state, and ZIP code . The street address may be omitted, however, if it is listed in a current city or telephone directory.

Unless it would be misleading, the declaration may be the responsible party's principal place of business instead of the location where the commodity was manufactured, packed, or distributed. When the responsible party is not the manufacturer, the declaration shall include the responsible party's connection with the package, such as "Manufactured for and packed by" or "Distributed by."

## **D**eclaration of Quantity

All declarations of quantity shall permit price and quantity comparisons. In general, a declaration of quantity shall be expressed in terms of weight if the commodity is solid, semisolid, viscous, or a mixture of solid and liquid. When a product is composed of solids in a liquid packing medium, the declaration of quantity should be in terms of drained weight.

A declaration of net quantity shall appear on the package label and shall be accurate exclusive of all packaging materials. When the label appears directly on the package, the quantity declaration shall appear in the lower 30 % of the principal display panel and be generally parallel to the base of the package.

---

<sup>2</sup>The country name if outside the United States.

<sup>3</sup>The country mailing code if outside the United States.

## **Units and Symbols**

For metric declarations:

- The metric units required are those of the International System of Units (SI).
- The units of mass used in an SI quantity declaration shall be in terms of the kilogram, gram, or milligram. Only the following words and symbols for SI units shall be used in conjunction with a weight declaration:

kilogram	kg
gram	g
milligram	mg

For inch-pound declarations:

- The units of weight used in an inch-pound quantity declaration shall be in terms of the avoirdupois pound and ounce. Only the following words and abbreviations shall be used in conjunction with a weight declaration:

avoirdupois	avdp
pound	lb
ounce	oz
weight	wt
drained weight	dr wt

### **Capitalization**

SI symbols for weight shall not be capitalized. Inch-pound abbreviations for weight may appear in both upper and lower case letters.

### **Use of Punctuation**

Periods or other punctuation shall not be used after SI symbols. Periods or other punctuation should not be used after inch-pound abbreviations.

## Use of Spaces

A space should be used between the SI symbol and the number to which it refers. For example: 250 g not 250g; 1.5 kg not 1.5kg.

## Singular Form

SI symbols shall always be written in the singular form. An "s" shall not be added to a symbol to express the plural of the symbol. Inch-pound abbreviations should also be written in the singular form. For example, "g" is the symbol for both "gram" and "grams;" "oz" is the abbreviation for both "ounce" and "ounces."

## Prohibited Symbols

Incorrect symbols to use in SI quantity declarations of weight include: Kg, Kilo, G, gms, gr, and MG.

Incorrect symbols to use in inch-pound quantity declarations of weight include: # and Pnd.

## **Use of Units and Symbols**

### Largest Whole Unit

The quantity declaration shall be in terms of the largest whole unit of weight, with any remainder expressed in fractions.

For SI declarations:

- The quantity shall not be expressed in mixed units. For example: 3.5 kg not 3 kg 500 g.
- A weight of less than one gram shall be expressed in milligrams.
- A weight of one gram or more, but less than 1 kilogram, shall be expressed in grams and decimal fractions of a gram.
- A weight of one kilogram or more shall be expressed in kilograms and decimal fractions of a kilogram.

- A remainder shall be expressed as a decimal fraction of the largest whole unit (common fractions are not allowed). For example: 1.25 kg not  $1\text{-}\frac{1}{4}$  kg; 420.2 g not  $420\text{-}\frac{1}{5}$  g.

For inch-pound declarations:

- The quantity may be expressed in mixed units. For example: 2.25 lb and 2 lb 4 oz are both acceptable.
- A weight of less than one pound shall be expressed in ounces and fractions of an ounce.
- A weight of one pound or more shall be expressed in pounds with any remainder expressed as either fractions of a pound, or ounces and fractions of an ounce.
- A remainder may be expressed as either a common or decimal fraction of the pound or ounce. For example: 1.5 lb,  $3\text{-}\frac{1}{2}$  lb, 14.3 oz, and  $12\text{-}\frac{1}{4}$  oz are all acceptable; or,  
A remainder may be expressed in the next smaller whole unit with any further remainder expressed as a common or decimal fraction of the smaller unit. For example: 5 lb 4 oz, 1 lb 7.5 oz and 3 lb  $2\text{-}\frac{1}{4}$  oz are all acceptable.

### **Rule of 1000**

The selected multiple or submultiple prefixes for SI units shall result in numerical values between 1 and 1000. This rule requires milligrams to be used when a weight declaration is less than 1 gram, and kilograms to be used when a weight declaration is 1000 grams or more. For example: 500 mg, not 0.5 g; 1.4 kg, not 1400 g.

### **Number of Digits Displayed**

SI declarations shall be shown in three digits except where the quantity is below 100 grams. If below 100 grams, the SI declaration may be shown in two digits. In either case, any final zero appearing to the right of the decimal point need not be shown.



## Dual Unit Declarations

A quantity declaration shall usually appear in both SI and inch-pound units. Either unit may appear first in the declaration. For example: 2 kg (4.4 lb) and 1 lb (453 g) are both acceptable.

## Rounding

When declaring equivalent SI and inch-pound quantities on a package, neither declaration may overstate or understate the actual quantity. Conversions, the proper use of significant digits, and rounding must be based on the packer's knowledge of the accuracy of the original measurement and the effect of that accuracy on the converted number. Net content declarations shall not be rounded up to overstate a quantity. When, as a result of rounding, metric and inch-pound declarations do not exactly match, the quantity of product in the package shall meet the largest declaration.

## Fractions

An SI quantity declaration shall contain only decimal fractions. For example: 1.5 kg, not 1- $\frac{1}{2}$  kg. An SI declaration shall not be carried out to more than three places. For example: 2.36, not 2.364287.

An inch-pound quantity declaration may contain either decimal or common fractions. An inch-pound quantity declaration that contains decimal fractions shall not be carried out to more than three places. In an inch-pound quantity declaration that contains common fractions, all fractions shall be reduced to their lowest term. For example:  $\frac{1}{2}$ , not  $\frac{2}{4}$ ;  $\frac{1}{8}$ , not  $\frac{4}{32}$ . In addition, common fractions shall be in terms of halves, quarters, eighths, sixteenths, or thirty-seconds unless there is a firmly established general consumer usage and trade custom of employing different common fractions for a particular commodity. For example: 3- $\frac{3}{16}$  lb, not 3- $\frac{1}{3}$  lb; 1- $\frac{3}{8}$  lb, not 1- $\frac{2}{5}$  lb; 14- $\frac{9}{16}$  oz, not 14- $\frac{4}{7}$  oz.

## **Words Accompanying a Quantity Declaration**

### **Use of Phrase "Net Weight"**

A quantity declaration of weight may stand alone, or may include the terms "net weight," "net mass," or just the word "net." For example: Net Wt. 453 g (1 lb); Net 6 oz (170 g); 200 g (7 oz); and 1 lb (453 g) are all acceptable.

### **Qualifying Phrases Prohibited**

Words or phrases that qualify the quantity declaration shall not appear on the package. For example: "approximately," "minimum," "when packed," "not less than," "at least," "giant," and "full" are prohibited from appearing near the quantity declaration.

### **Combination Declarations**

When a quantity declaration of weight is not fully informative on its own, it shall be combined with appropriate declarations of measure, count, or size. All combination declarations shall be accurate and shall appear on the principal display panel as part of the quantity declaration.

### **Supplemental Declarations**

When appropriate, the required quantity declaration may be supplemented by one or more additional declarations of weight, measure, count or size. All supplemental declarations shall be accurate and shall appear somewhere other than on the principal display panel.

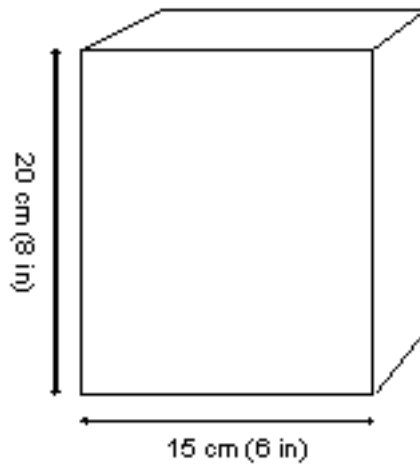
## **Prominence and Placement**

All information required to appear on a consumer package shall be prominently displayed in the English language. When appropriate, information may also be displayed in additional languages. Any required information that is hand lettered shall be clear and equal in legibility to printed materials.

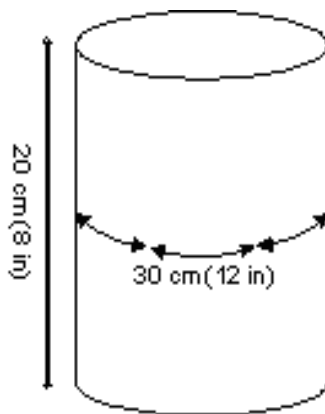
## Principal Display Panel

The area of the principal display panel shall be:

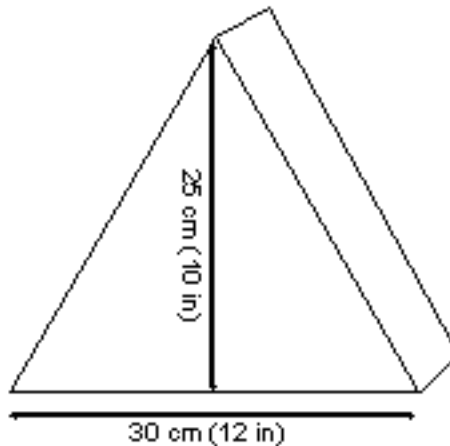
- for rectangular containers, the height times the width ( $H \times W$ ) of the front of the package, where the front of the package is determined by how the package is designed to be displayed;



- for cylindrical or nearly cylindrical containers, 40 % of the height times the circumference [ $0.4 \times (H \times C)$ ] of the container;



- for other shaped containers, 40 % of the total surface area of the container. However, if the container has an obvious principal display panel (for example, the face of a triangular package of cheese, or the top of a can of shoe polish) the area shall be calculated from the shape of that surface.



## Color Contrast

The quantity declaration shall be in a color that contrasts conspicuously with its background. However, the quantity declaration may be blown, formed, or molded on a glass or plastic surface if no other label information is presented in a contrasting color.

## Free Area

The area surrounding the quantity declaration shall be free of printed information:

- above and below by a space equal to at least the height of the declaration lettering; and
- to the left and right by a space equal to twice the width of the letter "N" of the declaration lettering type and style.

## **Style of Type**

The quantity declaration shall be in a style of type or lettering that is bold, clear, and conspicuous when compared to other type, lettering, or graphics on the package. However, if all the label information is blown, formed, or molded on a glass or plastic surface, then the quantity declaration may also be blown, formed, or molded on the surface.

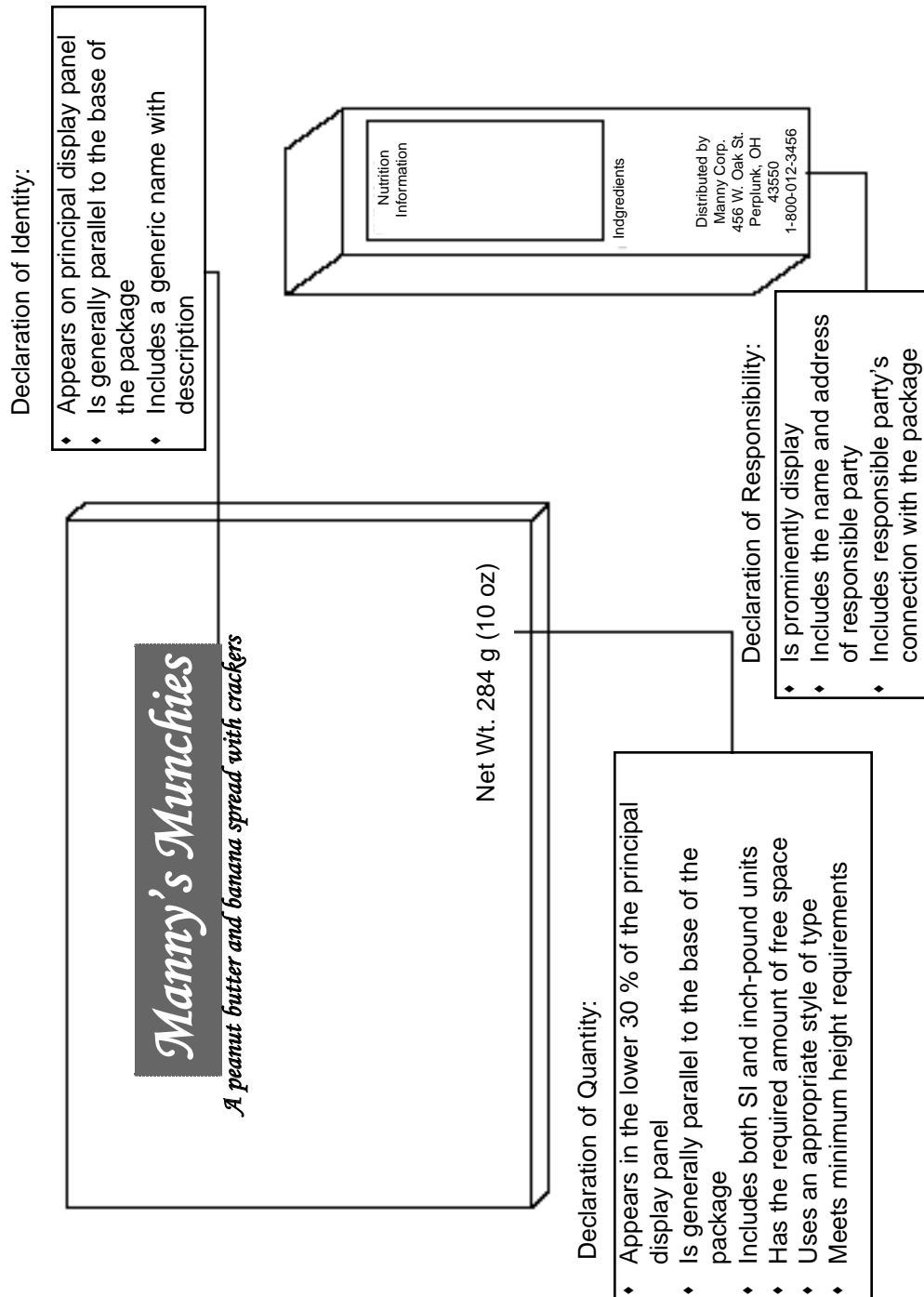
## **Proportionality**

No number or letter shall be more than three times as high as it is wide.

## **Minimum Height**

The height of any letter or number in the quantity declaration shall be at least that shown in the Table on the following page. When all lowercase letters are used in SI symbols, it is the lowercase "d," or its equivalent in the print or type, that shall meet the minimum height requirement. No letter shall be less than 1.6 mm ( $1/16$  in) in height. Other letters and exponents shall be presented in the same type style, and in proportion to the type size used.

<b>Minimum Height of Numbers and Letters</b>		
<b>Area of Principal Display Panel</b>	<b>Minimum Height: Numbers and Letters</b>	<b>Minimum Height: Label information blown, formed, or molded on surface of container</b>
Less than or equal to 32 cm <sup>2</sup> (5 in <sup>2</sup> )	1.6 mm ( <sup>1</sup> / <sub>16</sub> in)	3.2 mm ( <sup>1</sup> / <sub>8</sub> in)
More than 32 cm <sup>2</sup> (5 in <sup>2</sup> ) and less than or equal to 161 cm <sup>2</sup> (25 in <sup>2</sup> )	3.2 mm ( <sup>1</sup> / <sub>8</sub> in)	4.8 mm ( <sup>3</sup> / <sub>16</sub> in)
More than 161 cm <sup>2</sup> (25 in <sup>2</sup> ) and less than or equal to 645 cm <sup>2</sup> (100 in <sup>2</sup> )	4.8 mm ( <sup>3</sup> / <sub>16</sub> in)	6.4 mm ( <sup>1</sup> / <sub>4</sub> in)
More than 645 cm <sup>2</sup> (100 in <sup>2</sup> ) and less than or equal to 2581 cm <sup>2</sup> (400 in <sup>2</sup> )	6.4 mm ( <sup>1</sup> / <sub>4</sub> in)	7.9 mm ( <sup>5</sup> / <sub>16</sub> in)
More than 2581 cm <sup>2</sup> (400 in <sup>2</sup> )	12.7 mm ( <sup>1</sup> / <sub>2</sub> in)	14.3 mm ( <sup>9</sup> / <sub>16</sub> in)
Note: The type and size requirements specified in this table do not apply to the “e” mark.		



**Figure 1: Example of a package labeled to be sold by weight**

<b>Conversion Factors</b> (underlined figures are exact)					
Units	Pounds	Ounces	Milligrams	Gram	Kilogram
1 pound =	1	<u>16</u>	<u>453.592.37</u>	<u>453.592.37</u>	<u>0.453.592.37</u>
1 ounce =	<u>0.0625</u>	<u>1</u>	<u>28.349.523.125</u>	<u>28.349.523.125</u>	<u>0.28.349.523.125</u>
1 milligram =	0.000 002 204 623	0.000 035 273 96	<u>1</u>	<u>0.001</u>	<u>0.000 001</u>
1 gram =	0.002 204 623	0.035 273 96	<u>1 000</u>	<u>1</u>	<u>0.001</u>
1 kilogram =	2.204 623	35.273 9	<u>1 000 000</u>	<u>1 000</u>	<u>1</u>

How to use the conversion factors:

- (1) Look up the unit that you already have in the left-hand column.
- (2) Travel along the row for that unit until you reach the column of the unit that you want.
- (3) The number in the location where the unit that you have and the unit that you want intersect is the conversion factor.
- (4) Multiply the number that corresponds to the unit that you have by the conversion factor. The resulting number is the equivalent value in the units that you want.

**For example:** You have a weight of 1.3 pounds that you want to convert to grams. Using the chart, the conversion factor for going from pounds to grams is 453.592 37. Multiply the number of pounds by 453.592 37 to get the number of grams.

$$1.3 \text{ lb} \times 453.59237 \text{ g/lb} = 589.670081 \text{ g}$$



## **Labeling Checklist for Weight**

### **Declaration of Identity**

- Appears on the principal display panel.
- Is generally parallel to the base of the package.
- Is the name specified in, or required by, federal or state regulation; the common or usual name; or the generic name or other appropriate description including a statement of function.

### **Declaration of Responsibility**

- Is conspicuously displayed on any package that is sold, kept, offered, or exposed for sale at a location other than the premises where it was packed.
- Includes the name and address of the manufacturer, the packer, or the distributor.
- Uses the actual corporate name or, when not incorporated, the name under which the business is conducted.
- Includes the city, state (or country), and ZIP code (or mailing code used in other countries).
- Includes the street address unless this information is listed in a current city or telephone directory.
- Uses the address of the responsible party's principal place of business or the address of the location where the package was manufactured, packed, or distributed unless such address would be misleading.
- If the responsible party is not the manufacturer, then includes the party's connection with the package (i.e., "Manufactured for and packed by," or "Distributed by").

## Declaration of Quantity

- Appears in the lower 30 % of the principal display panel.
- Appears generally parallel to the base of the package.
- Is prominently displayed in English (multi-lingual information is permitted).
- Is in a color that contrasts conspicuously with its background.
- Has an adequate amount of free area around it.
- Appears in a style of type or lettering is bold, clear, and conspicuous.
- Is of a type or lettering that is proportional.
- Is of a type or lettering that meets the minimum height requirements.
- Generally includes both SI and inch-pound units.
- Uses only approved words, symbols or abbreviations for the SI and inch-pound units.
- Uses SI symbols that are not capitalized.
- Uses SI symbols and inch-pound abbreviations that are not accompanied by periods or other punctuation marks.
- Uses SI symbols and inch-pound abbreviations in the singular form.
- Is declared in the largest whole unit.
- SI units comply with the Rule of 1000.
- Uses SI declarations that are displayed in 2 or 3 digits.
- Is properly rounded so as to not overstate the quantity.
- Uses SI declarations containing only decimal fractions.
- Does not appear in conjunction with an improper qualifying phrase.
- When necessary, is combined with appropriate additional declarations.

## **Contact Information**

### **National Institute of Standards and Technology**

Weights and Measures Division

100 Bureau Drive, M/S 2600

Gaithersburg, MD 20899-2600

Tel: 301-975-4004

Fax: 301-926-0647

E-mail: [TheSI@nist.gov](mailto:TheSI@nist.gov)

[www.nist.gov/metric](http://www.nist.gov/metric)

### **National Conference on Weights and Measures**

15245 Shady Grove Road, Suite 130

Rockville, MD 20850

Tel: 240-632-9454

Fax: 301-990-9771

E-mail: [ncwm@mgmtsol.com](mailto:ncwm@mgmtsol.com)

[www.ncwm.net](http://www.ncwm.net)

### **U.S. Federal Trade Commission**

600 Pennsylvania Ave, NW

Washington, DC 20580

Tel: 202-326-2222

[www.ftc.gov](http://www.ftc.gov)

### **U.S. Food and Drug Administration**

5600 Fishers Lane

Rockville, MD 20857

Tel: 1-888-463-6332

[www.fda.gov](http://www.fda.gov)

**Handbook 130** is available on the NIST Weights and Measures Division website at: [www.nist.gov/owm](http://www.nist.gov/owm); click on "Handbook 130, Uniform Laws and Regulations" under the "Quick List (popular links)" section.

The **Fair Packaging and Labeling Act (FPLA)** is available

- on the FDA website at: [www.fda.gov/opacom/laws/fplact.htm](http://www.fda.gov/opacom/laws/fplact.htm); or
- on the FTC website at: [www.ftc.gov/ogc/stat3.htm](http://www.ftc.gov/ogc/stat3.htm),  
click on "Fair Packaging and Labeling Act  
(80 Stat. 1296, 15 U.S.C. §§ 1451-1461)."

A **Food Labeling Guide** is available on the FDA website at:

[www.cfsan.fda.gov/~dms/flg-toc.html](http://www.cfsan.fda.gov/~dms/flg-toc.html)