

**NIST Special Publication 1020**

**Guide for Labeling Consumer Package  
by Weight, Volume, Count, or Measure  
(length, area or thickness)**

*Editors:*

David Sefcik  
Lisa Warfield

This publication is available free of charge from:  
<https://doi.org/10.6028/NIST.SP.1020>

**NIST**  
**National Institute of  
Standards and Technology**  
U.S. Department of Commerce

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Lisa Warfield

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U.S. Department of Commerce  
*Wilbur L. Ross, Jr., Secretary*

National Institute of Standards and Technology  
*Walter Copan, NIST Director and Undersecretary of Commerce for Standards and Technology*

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## Foreword

This document, “Guide for Labeling Consumer Packages by Weight, Volume, Count, or Measure (length, area, or thickness),” is based on the Uniform Packaging and Labeling Regulation (UPLR) in National Institute of Standards and Technology Handbook 130, “Uniform Laws and Regulation in the Areas of Legal Metrology and Fuel Quality.” It provides a summary of labeling requirements for consumer products and commodities sold by weight, volume, count, or measure. This guide is not a replacement for the UPLR. The reader should refer to the UPLR to ensure that all requirements are met. This guide does not apply to wine, malted beverages and distilled spirits, some packages of meat and poultry products subject to the label requirements of the U.S. Department of Agriculture, and to packages labeled for export.

The superseded documents are:

NIST SP 1020-1 “Consumer Package Labeling Guide: Selling by Weight” (August 2005)

NIST SP 1020-2 “Consumer Package Labeling Guide: Selling by Volume” (August 2005)

NIST SP 1020-3 “Consumer Package Labeling Guide: Selling by Count” (December 2005)

NIST SP 1020-4 “Consumer Package Labeling Guide: Selling by Length and Area” (May 2006)

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## **Part 1. Introduction**

This guide provides an overview of the requirements for labeling packaged goods to be offered for sale by weight, volume, count, and measure (or combinations of these quantities). It is based on the Uniform Packaging and Labeling Regulation (UPLR) in National Institute of Standards and Technology (NIST) Handbook 130, "Uniform Laws and Regulation in the Areas of Legal Metrology and Fuel Quality" at [www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-130](http://www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-130). The UPLR requires manufacturers and packers to provide declarations of identity and net quantity of contents on their packages so consumers can make value comparisons based on price and quantity. The UPLR is used as the model for the labeling regulations in most States. For a State by State compilation, see Section II. "Uniformity of Laws and Regulations" (UPLR) in NIST Handbook 130.

The UPLR is consistent with the Fair Packaging and Labeling Act (FPLA) and regulations issued by the Federal Trade Commission (FTC), Food and Drug Administration (FDA), Environmental Protection Agency (EPA), and U.S. Department of Agriculture (USDA) - Food Safety and Inspection Service (FSIS). This guide should be used with the latest edition of NIST Handbook 130, UPLR. If information in this guide conflicts with the UPLR, the UPLR requirement supersedes this guide. The guide only provides information on legal metrology requirements, so the user must determine if other labeling requirements apply (e.g. nutritional and ingredient information; Country of Origin Labeling (COOL); warning labels and safe-use instructions for hazardous products).

## **Part 2. Label Requirements for Consumer Packages**

This section describes the general labeling requirements for all packaged goods sold by weight, volume, count or measure (e.g., length, width, and thickness). Additional guidance on other requirements, conversion factors, and information is presented in later sections. Specific requirements for quantity declarations are found in Part III. "Packages Labeled by Weight (Mass)," Part IV. "Packages Labeled by Volume," Part V. "Packages Labeled by Measure (length, area and thickness)," and Part VI. "Packages Labeled by Count." A list of exemptions is included in Part VII. "Exemptions to Labeling Requirements." The following declarations are required to appear on packaged goods:

- product identity;
- responsibility; and
- net quantity of contents.

All required information must appear on a consumer package in the English. The information presented shall be prominent, definite, plain, and conspicuous as to the size, style of letters, numbers, and to the color of letters and numbers, in color contrast with its background. The required information may appear in other languages (e.g., Spanish, French or both) as long as it is also shown in English.

### **Section 1. Declaration of Product Identity**

The following explain the product identity requirement and where the identity must appear on the package.

#### **a. Product Identity**

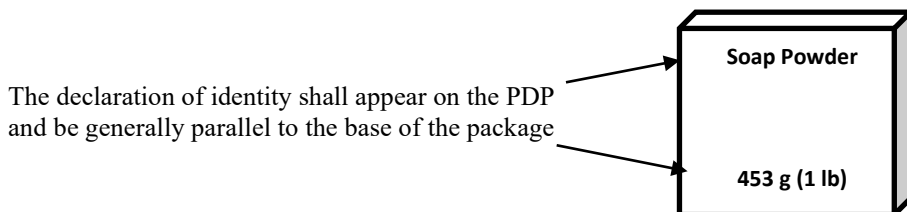
Shall be given in terms of the name specified in or required by any applicable law or regulation or, in the absence of this the common or usual name or, in the absence of this, the generic name or other appropriate description, including a statement of function (e.g., "cleaning powder"). The product identity shall not be misleading or deceptive.

#### **b. Location**

The declaration of identity shall appear on the Principal Display Panel (PDP). The PDP is defined as that part, or those parts, of a label that is, or are, so designed as to most likely be displayed, presented, shown, or examined under normal and customary conditions of display and purchase (see Figure 1. "Declaration of Identity on a Principal Display Panel"). It is the manufacturer or packer who determines the PDP. If a PDP panel appears



more than once on a package the requirements apply to all other PDP panels. The product identity shall appear generally parallel to the base on which the package was designed to rest during retail display as determined by the manufacturer or packer.



**Figure 1. Declaration of Identity on a Principal Display Panel**

## **Section 2. Declaration of Responsibility**

A package kept, offered, or exposed for sale, or sold at any place other than on the premises where it is packaged shall conspicuously display the following information:

### **a. Name of Responsible Party**

The name shall be the actual corporate name, or, when not incorporated, the name under which the business is conducted. When the product is not manufactured by the person or business whose name appears on the label, the name shall be qualified by a phrase that reveals the connection such person has with such commodity, such as “Manufactured for and packed by \_\_\_\_\_,” “Distributed by \_\_\_\_\_,” or any other wording of similar import that expresses the facts.

### **b. Address of Responsible Party**

The address shall include street name or number, city, state (and country if outside the United States), and ZIP Code (or mail code used in other countries). However, the street address may be omitted if it is listed in a readily accessible, widely published, and publicly available resource, including but not limited to a printed directory, electronic database, or Web site. If a person manufactures, packs, or distributes a product or commodity at a location other than his principal place of business, the label may state the principal place of business or corporate headquarters in lieu of the actual place where the product or commodity was manufactured or packed or is to be distributed, unless that statement would be misleading.

#### **Examples of a Declaration of Responsibility:**

Glad Foods  
1600 Gateway Street  
Waterloo, PA 18017

Glad Foods  
Waterloo, PA 18017

Glad Foods  
P. O. Box 1800 (\*)  
Waterloo, PA 18017  
www.gladfoods.com (\*)  
1-800-326-1212 (\*)

*(\*) Optional information may be added but the required information must be included.*

It is not necessary to say, “manufactured by” when the name is that of the actual producer. When it is not, the name shall be accurately identified (i.e., “Distributed by,” “Made for,” “Imported by.”) A Uniform Resource Locator (URL) for the company’s Web site, a telephone number, or a Post Office box may be included, but these are not acceptable substitutes for the required street name and address information.

### Section 3. Declaration of Net Quantity of Contents

Only the actual quantity of product (excluding packaging and other tare material) in the package is declared in the net quantity statement. A net quantity declaration that does not permit price and quantity comparisons is prohibited.

#### a. Units of Measure – Use of SI (Metric System) and U.S. Customary Units – Order of Presentation

Units of the International System of Units (SI) (metric system) and U.S. Customary Units are acceptable for use in the quantity declaration. The declaration of quantity on most packages are subject to FTC and FDA regulations and shall include both SI and U.S. customary units. Packaged goods subject only to State regulation under the UPLR may be labeled with only SI units (metric) in the quantity declaration. When both SI and U.S. customary units appear on a package either unit of measurement may appear first (see Exemption 11.33 “U.S. Customary Units Consumer Commodities” in the UPLR).

**Example:** Units may be shown in either order: Net Weight 2 kg (4.4 lb) or Net Weight 4.4 lb (2 kg)

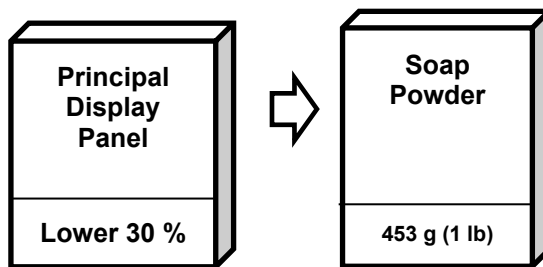
#### b. The Accuracy of Net Quantity Declarations and Package Requirements

The net quantity of contents shall be an “accurate” declaration of the amount of the product in the package. The package fill requirements and the test procedures for verifying the net quantity of contents, determining tare weight and other packager requirements, as well as the value of the permitted reasonable variations from the labeled net quantity of contents are described in NIST Handbook 133 “Checking the Net Contents of Packaged Goods” at [www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-133](http://www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-133).

#### c. Location of Net Quantity Declaration

The declaration of net quantity of contents shall appear in the lower 30 % of the PDP and shall be in terms of the Largest Whole Unit (e.g., Net Wt 3 lb not Net Wt 48 oz, and 1 gallon not 128 fluid ounces), unless otherwise specified in the UPLR. There are exemptions to the location of information in Part VII. “Exemptions from Labeling Requirements” (see Figure 2. “Location of the Declaration of Net Quantity of Contents”).

**Figure 2. Location of the Declaration of Net Quantity of Contents**



#### d. Determine the Minimum Type Size Required for the Net Quantity of Contents Declaration

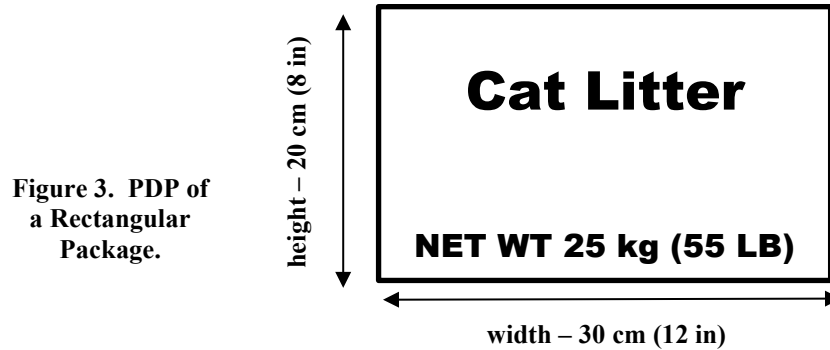
It is not the size of a label affixed to package, but the entire surface area of the package that is shown to the customers that is used to determine type size. Calculate the area of the PDP and use the calculated area to select the minimum height of the numbers and letters from Table 1. “Minimum Height of Numbers and Letters.”

##### 1. Calculate the Area of Principal Display Panel (PDP)

The calculation is based on the shape of the package or label. Examples of two of the most common package shapes (e.g., rectangular and cylindrical) are shown below.

### i. Rectangular Package

For most packages the entire front panel displayed to consumers is considered the PDP. This area is calculated by multiplying the height (h) times the width (w) ( $Area = h \times w$ ).

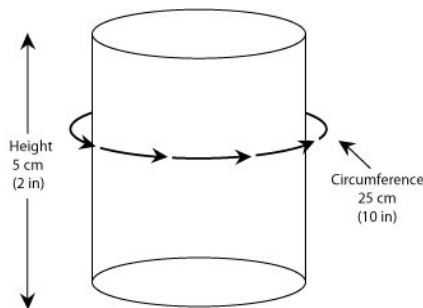


For this example, the height is 20 centimeters (8 inches) and the width is 30 centimeters (12 inches). Calculate the area of the PDP by multiplying  $20 \times 30 =$  Area of PDP is 600 square centimeters (or  $8 \times 12 = 96$  square inches). For other geometric shapes (e.g., triangles, frustums, circles...) calculate the area using the appropriate geometric formula.

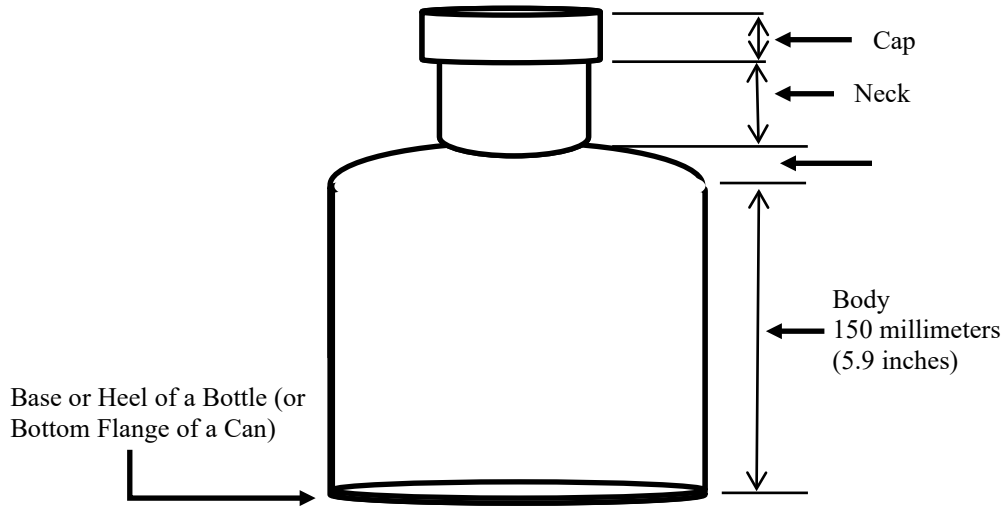
### ii. Cylindrical Package

The area of the principal display panel for a cylindrical is calculated by multiplying the height (h) of the container by the circumference (c) times 40% ( $Area = (h \times c) \times 0.40$ ). The circumference may be determined using a suitable flexible measure (e.g., diameter tape), or by multiplying the diameter by 3.14159 [Pi] ( $Circumference = 3.14159 \times Diameter$ ). see Figure 4. “Cylindrical Container.”

**Calculation:** 25 centimeters (10 inches)  $\times$  5 centimeters (2 inches) = 50 square centimeters (8 square inches)  $\times$  0.40 = PDP area is 20 square centimeters (3.2 square inches).



For bottles, cans and jars the area of the PDP is calculated using the height of the body of the container (the shoulder, neck, cap or heel (base) of a bottle or jar or the bottom flange of cans are not included in the container height) (see Figure 5. “Anatomy of a Bottle”). In Figure 5. “Anatomy of a Bottle” the body height of 150 millimeters (5.9 inches) is used to calculate the area of the PDP.



**2. Select the Minimum Type Size of Numbers and Letters**

**i. Rectangular Example**

To select the minimum type size for the example in Figure 3. “PDP of a Rectangular Package,” find the area of the PDP (600 square centimeters [96 square inches]) in Table 1. “Minimum Height of Numbers and Letters.” For this example, the minimum type size of 4.8 millimeters ( $\frac{3}{16}$  inch) is required.

**ii. Cylindrical Example**

To select the minimum type size for the example in Figure 4 “Cylindrical Container” find the area of the PDP (50 square centimeters [8 square inches]) in Table 1. “Minimum Height of Numbers and Letters.” In this example, the minimum type size of 3.2 millimeters ( $\frac{1}{8}$  inch) is required to be used.

<b>Table 1.</b> <b>Minimum Height of Numbers and Letters*</b>					
<b>Area of Principal Display Panel</b>		<b>Minimum Height of Numbers and Letters</b>		<b>Minimum Height of Information Blown, Formed, or Molded on Surface of Container (e.g., plastic jug)</b>	
<b>square centimeters</b>	<b>square inches</b>	<b>millimeter</b>	<b>inch</b>	<b>millimeter</b>	<b>inch</b>
≤ 32	≤ 5	1.6	$\frac{1}{16}$	3.2	$\frac{1}{8}$
> 32 ≤ 161	> 5 ≤ 25	3.2	$\frac{1}{8}$	4.8	$\frac{3}{16}$
> 161 ≤ 645	> 25 ≤ 100	4.8	$\frac{3}{16}$	6.4	$\frac{1}{4}$
> 645 ≤ 2581	> 100 ≤ 400	6.4	$\frac{1}{4}$	7.9	$\frac{5}{16}$
> 2581	> 400	12.7	$\frac{1}{2}$	14.3	$\frac{9}{16}$

\*Use of higher type size permitted. **Symbols:** < less than; > greater than; ≤ less than or equal to.

### 3. Measuring the Type Size of Numbers and Letters

The height of any letter or number in the quantity declaration shall be not less than that shown in Table 1. “Minimum Height of Numbers and Letters.” As described in 4. “Style of Type or Lettering and Proportion” below, no number or letter shall be more than three times as high as it is wide.

The height and width of a number or letter is measured at its outermost edges as shown in Figure 6. “Measure the Height and Width of Numbers and Letters.”



**Figure 6. Measure the Height and Width of Numbers and Letters.**

**NOTES:** The height of numbers of a common fraction shall be at least one-half the minimum height requirement. When upper and lowercase or all lowercase letters are used in U.S. customary units, it is the lowercase “o” or its equivalent that shall meet the minimum height requirement. When upper and lowercase or all lowercase letters are used in SI symbols, it is the uppercase “L,” lowercase “d,” or their equivalent in the print or type that shall meet the minimum height requirement. No letter or number shall be less than 1.6 millimeter ( $1/16$  inch) in height. Other letters and exponents shall be presented in the same type style and in proportion to the type size used. Any required label information blown, formed, or molded on surface of a container (e.g., plastic and glass milk jugs or bottles) must meet the height requirements specified in Table 1. “Minimum Height of Numbers and Letters.”

### 4. Style of Type or Lettering and Proportion

The declaration(s) of quantity shall be in such a style of type or lettering as to be boldly, clearly, and conspicuously presented with respect to other type, lettering, or graphic material on the package. No number or letter in the quantity declaration shall be more than 3 times as high as it is wide (See Figure 7. “Proportion of Numbers and Letters” for an illustration). Measure the width and height of the number or letter as explained in 3. “Measuring the Type Size of Numbers and Letters.”



**Figure 7. Proportion of Numbers and Letters.**

### 5. Color Contrast

The declaration(s) of quantity shall be shown in a color that contrasts conspicuously with its background. For example, the quantity declaration shown in white text in Figure 8 “Label with Poor Contrast” is nearly unreadable due to the poor contrast while the black text in Figure 9 “Label with Good Contrast” is clear and conspicuous.



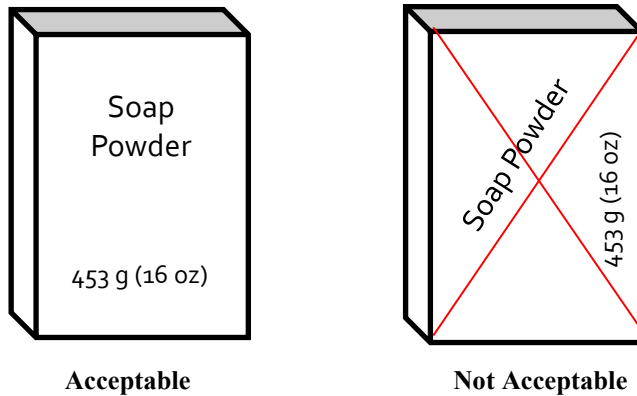
**6. Free Area**

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 lettering in the quantity declaration (e.g., typically this the height of the letter “N” used in the word net with the same font as the quantity declaration); and, to the left and right, by a space equal to twice the width of the letter “N” of the style and size of type used in the declaration.

**PRINTED INFORMATION**  
NNNNNNNNNNNNNNNNNNNN  
**PRINTED INFORMATION** **NET WT 454 g (1 lb)** **PRINTED INFORMATION**  
NNNNNNNNNNNNNNNNNNNN  
**PRINTED INFORMATION**

**7. Parallel Quantity Declaration**

The quantity declaration (and the product identity) shall be presented in such a manner as to be generally parallel to the declaration of identity and the base on which the package rests as it is designed to be displayed (See Figure 11. “Parallel Declarations of Identity and Quantity”). This applies to pre-printed labeling as well as to labels that are applied in supermarkets, delis and other stores (e.g., random weight packages). The declaration of quantity shall be in the lower 30 % of PDP and be generally parallel to the base of the package.



**Section 4. Largest Whole Unit**

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

**Example:** 3 lb not 48 oz or 1 gallon not 128 fluid ounces or 3 lb 2 oz not 50 oz

**a. SI Units**

Shall be shown in decimal fractions of largest whole unit. Use common fractions with the SI Units is prohibited.

**Example:** 1.25 kg not 1<sup>1</sup>/<sub>4</sub> kg

The quantity in SI units shall not be expressed in mixed units.

**Example:** 3.5 kg not 3 kg 500g

## **b. U.S. Customary Units**

Units of the U.S. customary system shall be shown in common or decimal fractions of the largest whole unit; or the next smaller whole unit or units with any further remainder in terms of common or decimal fractions of the smallest unit used in the quantity declaration.

**Example:** 5 lb 4 oz, or 3 lb 2<sup>1</sup>/<sub>4</sub> oz, or 4.25 lb

Equivalent units may be stated in the net quantity of contents if it is also shown in terms of the largest whole unit.

**Example:** 3 lb (48 oz) or 1 Gallon (128 fl oz)

## **Section 5. Qualification of a Quantity Declaration is Prohibited**

In no case shall any declaration of quantity be qualified with the words “when packed,” “minimum,” or “not less than” or any words or symbols (e.g., ± or ~) of similar import (i.e., “approximately”), nor shall any unit of weight, measure, or count on a package be qualified by any term (such as “jumbo,” “giant,” “full,”) or like term or symbol that may tend to exaggerate the quantity of the commodity.

## **Section 6. Combination Declarations of Net Quantity of Contents**

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

**Example:** Trash bags require count, dimensions, thickness, and capacity to be fully informative.

200 Count 49.2 L (13 gal) 60.9 cm × 68.5 cm (2 ft × 2 ft 3 in) 22.8 μm (0.90 mil)

## **Section 7. Supplementary Quantity Declarations**

The quantity declaration may be supplemented by one or more declarations of weight, measure, or count but these shall not appear on the Principal Display Panel (PDP). A supplemental statement may appear on the back, sides, or top of a package but shall not include any term qualifying a unit of weight, measure, or count that tends to exaggerate the amount of product or commodity in the package (e.g., may not include the terms “giant quart,” “large liter,” “full gallon,” “when packed,” “minimum,” or similar words). The following is an example of an acceptable supplementary quantity declaration (it must appear on the back or side panel of the package not the PDP):

Evaporated Milk - 430 mL (back panel includes a quantity declaration of 100 g)

The following are examples not supplementary quantity declarations, and they may appear on the PDP to supplement the required declaration of quantity:

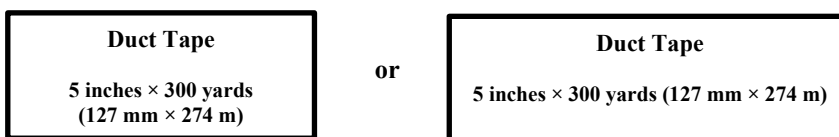
- A declaration of ounces in addition to the largest whole unit (e.g., 1 lb [16 oz]).
- A declaration of count (in addition to the required net weight declaration) on packages of hot dog or hamburger buns or packages of sliced cheese.
- A declaration of count (in addition to the net weight) on packages of sliced cheese or number of cups (a household measure) of cheese contained in a package of shredded product.
- The number of servings the package contains.

**Section 8. Terms Permitted to be Shown with a Net Quantity Declaration**

A quantity declaration may stand alone (e.g., 200 g (7 oz) or 473 mL (16 fl oz)) or these terms can precede or follow the quantity declaration. The declaration may include the term “NET WEIGHT” (or NET by itself if used on a food label) if labeled by weight and may include the term NET or NET CONTENTS if labeled by volume or count.

**Section 9. Lines of Print or Type**

A declaration of quantity may appear on one or more lines of print or type as shown in Figure 12. “Information on One or More Lines.”



**Figure 12. Information on One or More Lines.**

**Section 10. Conversions and Rounding**

Conversions and rounding shall be based on the packer’s knowledge of the accuracy of the original measurement and the effect of that accuracy on the quantity being converted. When expressing equivalent SI or U.S. customary unit quantities on a package, neither declaration is allowed to overstate the actual quantity. To avoid overstating the quantity it is permissible to round a converted quantity down. When, because of rounding, SI or U.S. customary units result in values that are not exact, inspectors will verify the largest declaration of net quantity (either SI or U.S. Customary). When rounding to show an equivalent SI or U.S. customary quantity, the number of significant digits retained shall be such that accuracy is neither sacrificed nor exaggerated. When making conversions it is important that the complete conversion factors be used in calculations, they should not be rounded before they are used. However, the result can be rounded after calculations are completed.

**Section 11. Symbols and Abbreviations**

**a. SI Units and Symbols**

The symbols in Table 2. “Acceptable SI Symbols for Use in a Quantity Declaration” shall be used in the quantity statement on a package:

<b>Table 2. Acceptable SI Symbols for Use in a Quantity Declaration</b>			
<b>Unit</b>	<b>Symbol</b>	<b>Unit</b>	<b>Symbol</b>
centimeter	cm	cubic meter	m <sup>3</sup>
cubic centimeter	cm <sup>3</sup>	kilogram	kg
meter	m	gram	g
milligram	mg	millimeter	mm
Liter	L or l	square meter	m <sup>2</sup>
milliliter	mL or ml	cubic decimeter	dm <sup>3</sup>
square centimeter	cm <sup>2</sup>	square decimeter	dm <sup>2</sup>
micrometer	μm	microgram	μg or mcg



- (1) These symbols except for the L for liter, shall not be capitalized unless the unit is derived from a proper name.

**Examples:** prohibited symbols include: Kg, K, G, GR, MG, ML.

- (2) a. A period should not be placed after an SI symbol (e.g., 3 m or 10 g not 3 m. or 10g.).  
b. A comma should not be used in place of a decimal point in quantities (e.g., 10.0 g or 23.8 mL not 10,0 g or 23,8 mL).

- (3) Symbols shall always be written in the singular form. Do not add an “s” to an SI symbol.

**Examples:** prohibited symbols include gs or cms.

- (4) Use of the “L” symbol and the “mL” symbol are preferred; however, the “l” symbol for liter and “ml” symbol for milliliter are permitted.

- (5) A space should be used between the SI symbol and the unit to which it refers but the space is not mandatory.

**Example:** 250 g but not 250g

- (6) The quantity shall not be expressed in mixed units.

**Example:** 3.5 kg but not 3 kg 500 g

#### (7) **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.

**Example:** 500 mg but not 0.5 g; 1.4 kg but not 1400 g

**Note:** the UPLR allows centimeter or millimeters to be used where a length declaration is less than 100 centimeters.

**Example:** 750 mm or 75 cm, not 0.75 m

#### (8) **Number of Digits Displayed**

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

**Example:** 454 g not 453.592 g; 85 g or 85.1 g, not 85.0 g or 101 mg not 101.00 mg

### **b. Abbreviations for U.S. Customary Units and Other Terms**

The abbreviations in Table 3. “Abbreviations for U.S. Customary Units and Other Terms” and no others may be used in place of the units or terms in the quantity statement on a package:

Table 3. Abbreviations for U.S. Customary Units and Other Terms					
Unit or Term	Abbreviation	Unit or Term	Abbreviation	Unit or Term	Abbreviation
avoirdupois	avdp	feet or foot	ft	pint	pt
count	ct	fluid	fl	pound	lb
cubic	cu	gallon	gal	quart	qt
diameter	dia	inch	in	square	sq
drained	dr	liquid	liq	weight	wt
each	ea	ounce	oz	yard	yd
fluid	fl	piece	pc		

1. Do not include a period after an abbreviation. Write abbreviations in singular form; an “s” to express a plural should not be added. For example, “oz” is the abbreviation for both “ounce” and “ounces.”
2. Both upper and lowercase letters are acceptable (e.g., Gal or GAL or gal) as long as the required minimum height requirements are met.
3. Prohibited symbols: Use of the crosshatch (#) for the pound (e.g., 3#) and the use of the quotation mark (") for inches (e.g., 4") or the quote mark (') for feet (e.g., 3').
4. Exponents are acceptable (e.g., ft<sup>2</sup> for square feet or cm<sup>3</sup> for cubic centimeters).
5. The quantity may be expressed in mixed units (e.g., pounds and ounces or feet and inches).

**Examples:** both 2.25 lb or 2 lb 4 oz are acceptable.

## Section 12. Method of Sale

Some commodities are required to be sold in specific methods of sale. See the “Uniform Regulation for the Method of Sale of Commodities” in NIST Handbook 130 for specific requirements. If there is not a specific requirement, Table 4. “Method of Sale Requirements” applies to most goods, products or commodities.

Table 4. Method of Sale Requirements	
If the commodity is:	Then the quantity shall be expressed as:
A solid, semisolid, viscous, or a mixture of solid and liquid	weight or mass
A liquid	fluid volume measure
A dry commodity	dry measure
Labeled by linear measure or area	linear measure or area
Labeled by numerical units (count)	numerical count

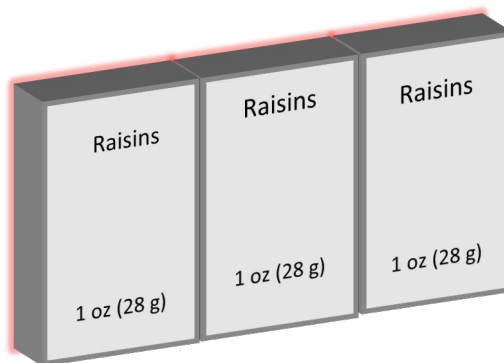
### Section 13. Multi-Unit Packages

Any package containing more than one individual package of a product shall bear on the outside of the package a declaration of the number of individual units; the quantity of each individual unit; and the total quantity of contents of the multi-unit package. The term “total” or the phrase “total contents” may precede the quantity declaration.

**Example:** 6 – Soap Bars  
Net Wt 100 g (3.53 oz) Each  
Total Net Weight: 600 g (1.32 lb)

#### a. Individual Packages Labeled for Individual Retail Sale in a Multi-Unit Package

For foods, a multi-unit package is a package containing two or more individually packaged units of an identical commodity of the same quantity that are intended to be sold as part of the multi-unit package but are individually labeled in compliance with requirements (i.e., identity, net quantity, and declaration of responsibility) [see Figure 13. “Open (or transparent package) Multi-Unit Package”]. Open multi-unit retail food packages (e.g., the old style 6-pack carton of bottled beverages or boxes or fruit in transparent wrapping), that do not obscure the number of units or prevent examination of the labeling on each of the individual units are not required to declare the number of individual units or the total quantity of contents for the multi-unit package if each individual unit is labeled in full compliance with the requirements and capable of being sold alone.



**Figure 13. Open (or transparent package) Multi-Unit Package**

#### b. Individual Packages Not Labeled for Individual Retail Sale in a Multi-Unit Package

A multi-unit package containing unlabeled individual packages which are not labeled for retail sale separate from the multi-unit package may contain, in lieu of the requirements above, a declaration of quantity of contents expressing the total quantity of the multi-unit package without regard for inner packaging. For such multi-unit packages, it shall be optional to include a statement of the number of individual packages when such a statement is not otherwise required by the regulations.

**Example:** Deodorant Cakes

5 – Deodorant Cakes  
Net Wt 113 g (4 oz) Each  
Total Net Wt 566 g (1.25 lb)

or

5 – Deodorant Cakes  
Total Net Wt 566 g (1 lb 4 oz)

#### **Section 14. Combination Packages**

A combination package is one that contains two or more individual units of dissimilar commodities. The quantity declaration shall contain a declaration of weight, volume, measure, or count, or any combination of these, for each individual package or unit. However, the quantity statement of identical packages or units shall be combined.

**Example:** A picnic pack that contains utensils, napkins and cups might be labeled on the PDP with:

20 – Spoons  
10 – Knives  
10 – Forks  
10 – 25 cm × 25 cm (10 in × 10 in) 2-ply Napkins  
10 – 177 mL (6 fluid ounce) Cups

#### **Section 15. Variety Packages**

A variety package is one that contains two or more individual units of similar, but not identical, commodities. Commodities are generically the same, but differ in weight, measure, volume, appearance, or quality are considered similar, but not identical. The quantity declaration shall contain a declaration of weight, volume, measure, count, size, or any combination of these, for each individual unit; and a declaration of weight, volume, measure, count size of any combination of these, for the total package.

**Example:** Sponges  
4 – 15.2 cm × 25.4 cm × 2.5 cm (6 in × 10 in × 1 in)  
4 – 10.1 cm × 20.3 cm × 1.9 cm (4 in × 8 in × <sup>3</sup>/<sub>4</sub> in)  
Total: 8 Sponges

The statement of total quantity shall appear as the last item in the declaration of net quantity and shall not be of greater prominence than the other terms used on the label. When the individual packages in a variety package are either packaged or labeled and are intended for retail sale as individual units, each package shall be labeled in compliance with the applicable sections of the UPLR and all other labeling requirements applicable to the product.

### Part 3. Packages Labeled by Weight (mass)

#### Section 1. Packages Must be Sold by Net Weight

The net quantity declaration must not include the weight of the container, wrappers, or packing material (called “tare weight”). In addition, the wax on cheese or ice glaze often applied on frozen foods is considered tare weight and shall not be included in the net weight. Selling packaged goods by “gross weight” is illegal.

A quantity declaration may stand alone [e.g., 200 g (7 oz) or 1 lb (453 g)] or may include the term “net mass” or “net weight” either preceding or following the declaration. The term “net” by itself may be used on food labels. However, the quantity of contents shall always declare the net quantity of contents even when such terms as “Net Weight” or “Net Content” are not used. See Figure 14. “Package Labeled by Weight” for an example.

**Example:** 453 g (1 lb) or Net Wt 453 g (1 lb) or Net 453 g (1 lb)

#### Section 2. Unit Declarations by Weight

##### a. Units for SI (Metric) Declarations

Use only the unit name or symbol in Table 5. “SI Units and Symbols” in a declaration of net quantity of contents by weight.

Table 5. SI Units and Symbols and Other Terms and Abbreviations	
The units of mass used in an SI quantity declaration shall be in terms of:	
Unit Name	Symbol
kilogram	kg
gram	g
milligram	mg
Term	Abbreviation
net	No abbreviation
weight	wt
drained weight	dr wt

##### b. SI – Largest Whole Unit

Use Table 6. “SI Units – Largest Whole Unit” to identify the largest whole unit to be used in the declaration of net quantity of contents.

Table 6. SI Units - Largest Whole Unit	
If the net weight is:	Then declare* the net weight in:
Less than 1 gram	milligrams
1 gram or more, but less than 1 kilogram	grams and decimal fractions of a gram (e.g., 420.2 g not 420- <sup>1</sup> / <sub>5</sub> g) and not in mixed units (e.g., 3.5 g not 3 g 500 mg)

<b>Table 6.</b> <b>SI Units - Largest Whole Unit</b>	
1 kilogram or more	kilograms and decimal fractions of a kilogram (e.g., 1.25 kg not 1- <sup>1</sup> / <sub>4</sub> kg) and not in mixed units (e.g., 3.5 kg not 3 kg 500 g)

**c. Units for U.S. Customary Quantity Declarations**

Only the units and terms or abbreviations in Table 7. “U.S. Customary Units and Other Terms and Abbreviations” may be used in conjunction with a weight declaration.

<b>Table 7.</b> <b>U.S. Customary Units and Other Terms and Abbreviations</b>	
Unit or Term	Abbreviation
pound	lb
ounce	oz
net	No abbreviation
weight	wt
drained weight	dr wt

**d. Largest Whole Unit**

Use Table 8. “U.S. Customary Units and Other Terms and Abbreviations” to identify the largest whole unit to be used in the declaration of net quantity of contents.

<b>Table 8.</b> <b>U.S. Customary Units and Other Terms and Abbreviations</b>	
If the net weight is:	Then declare* the net weight:
Less than one pound	In ounces and fractions of an ounce
One pound or more	In pounds with any remainder expressed as either fractions of a pound, or ounces and fractions of an ounce.
Any remainder	As a common or decimal fraction of pound or ounce (e.g., 1.5 lb, 3 <sup>1</sup> / <sub>2</sub> lb, 14.3 oz, and 12 <sup>1</sup> / <sub>4</sub> oz); or, may be expressed in the next smaller whole unit with any remainder shown as a common or decimal fraction of the smaller unit (e.g., 5 lb 4 oz, 1 lb 7.5 oz and 3 lb 2 <sup>1</sup> / <sub>4</sub> oz).

### Section 3. Factors for Converting Units of Weight

Use Table 9. “Factors for Converting Units of Weight” to find the appropriate factor for use in converting U.S. Customary and SI units (metric units) to be used in the declaration of net quantity of contents.

<b>Table 9.</b> <b>Factors for Converting Units of Weight</b> (underlined figures are exact)					
Unit	Pounds	Ounces	Milligrams	Grams	Kilograms
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>0.028 349 523 125</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 96	<u>1 000 000</u>	<u>1 000</u>	<u>1</u>

**Example 1:** You have a 4 lb package and you want to determine the equivalent metric quantity to declare on the label. To convert pounds to kilograms, multiply pounds by the conversion factor 0.453 592 37:

$$4 \text{ lb} \times 0.453 592 37 \text{ kg/lb} = 1.81436948 \text{ kg}$$

The metric quantity can be rounded or truncated (which means the extra digits are dropped but remaining digits are typically not rounded up to avoid overstating the quantity - 1.81436948 kg). Since SI units must be shown in only 2 or 3 digits, the quantity declaration could be displayed as:

$$4 \text{ lb (1.81 kg) or 1.81 kg (4 lb) or 4 lb (1.8 kg) or 1.8 kg (4 lb)}$$

**Example 2:** You have an 8 oz package and want to determine the equivalent metric quantity declare on the label. To convert ounces to grams, multiply grams by the conversion factor 28.349523125:

$$8 \text{ oz} \times 28.349523125 \text{ g/oz} = 226.796185 \text{ g}$$

The metric quantity can be rounded or truncated (the extra digits are dropped but remaining digits are typically not rounded up to avoid overstating the quantity – 226.796185). Since SI metric units are shown in only 2 or 3 digits, the quantity declaration should be:

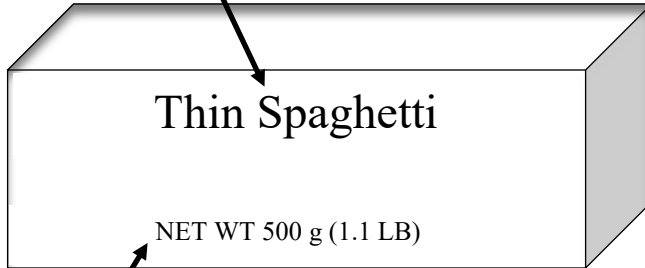
$$8 \text{ oz (226 g) or 226 g (8 oz)}$$

**Notes:** If 226.796185 is rounded up to 227 g, and assuming the packer’s target fill weight is 8 oz, the packages will be underweight. This is because inspectors verify the largest of the two quantities (i.e., 8 oz and 227 g) {which in this case would be the metric units}. Also, to ensure weighing accuracy, inspectors use scales with an accuracy of 0.1 g or better to verify the net quantity of contents of packaged goods.

## SUMMARY OF PACKAGE REQUIREMENTS (WEIGHT)

### Declaration of Identity

- Appears on PDP and is generally parallel to the base of the package.
- Includes a common or usual name or other appropriate description.



Manufactured by  
Palace Pasta Co.  
15 Park Place  
Hoyt, Ohio 20414

### Declaration of Responsibility

- Is prominently displayed, in this example, on the side panel of the box.
- Includes name, address, and zip code of responsible party.

### Declaration of Quantity

- Appears on lower 30 % of PDP and is generally parallel to the base of the package.
- Meets minimum height requirement for type.
- Has required free area around text and numerals.
- Has proper color contrast.
- Uses correct symbols for SI units and abbreviations for U.S. Customary Units.



## Part 4. Packages Labeled by Volume

### Section 1. Words Accompanying a Quantity Declaration

A quantity declaration may stand alone or may include the term “net” or “net contents” either preceding or following the declaration.

**Examples:** 473 mL (1 PT) or Net 473 mL (1 PINT); or Net Contents 1.89 L (2 QT)

### Section 2. Product Reference Temperatures

All declarations of quantity associated with a liquid measure shall express the volume at the specified reference temperature as shown in the Table 10. “Reference Temperatures for Products Sold by Fluid Measure.”

<b>Table 10. Reference Temperatures for Products Sold by Fluid Measure</b>	
<b>If the product is:</b>	<b>Then the Reference Temperature is:</b>
Distilled Spirits	15.6 °C (60 °F)
Frozen Food	At the frozen temperature
Beer (Malt)	4 °C (39.1 °F)
Petroleum	15.6 °C (60 °F)
Refrigerated food (e.g., dairy products labeled "Keep Refrigerated")	4 °C (40 °F)
Other liquids and wine (e.g., includes liquids sold in a refrigerated state for immediate consumption such as soft drinks, bottled water and others that do not require refrigeration.	20 °C (68 °F)

### Section 3. Units for SI (metric) Declarations

The SI units of liquid and dry measure used to declare the net contents in an SI quantity declaration shall be in as shown in Table 11. “Units and Symbols for SI Units”:

<b>Table 11. Units and Symbols for SI Units</b>	
<b>Unit</b>	<b>Symbol</b>
<b>For Liquid or Dry Volume:</b>	
liter	L or l
milliliter	mL or ml
<b>For Cubic Measure:</b>	
cubic meter	m <sup>3</sup> or cu m
cubic decimeter*	dm <sup>3</sup> or cu dm
cubic centimeter	cm <sup>3</sup> or cu cm

\*Some products are sold by dry volume such as soil, mulch, firewood, and animal bedding which are required to have their quantities labeled by liters or milliliters not cubic decimeters

**Section 4. Requirements for Quantity Declarations in U.S. Customary Units**

Only the following units, terms and abbreviations in Table 12. “U.S. Customary Units and Other Terms and Abbreviations” may be used in conjunction with a volume declaration. The units of liquid, dry, and cubic measure shall be used in terms of: Fluid, Dry, and Cubic Measure.

<b>Table 12. U.S. Customary Units and Other Terms and Abbreviations</b>	
<b>Unit</b>	<b>Abbreviation</b>
bushel	none
cubic foot	ft <sup>3</sup> or cu ft
cubic inch	in <sup>3</sup> or cu in
cubic yard	yd <sup>3</sup> or cu yd
dry pint	dry pt
dry quart	dry qt
fluid ounce	fl oz
gallon	gal
liquid	liq
peck	none
pint	pt
quart	qt

**Section 5. Largest Whole Unit**

Use Table 13. “U.S. Customary Units – Largest Whole Unit” to determine the largest whole unit and other requirement to be used in the declaration of net quantity of contents.

<b>Table 13. U.S. Customary Units – Largest Whole Unit</b>	
<b>If the declaration of quantity is:</b>	<b>Then the declaration of quantity shall:</b>
In terms of dry measure.	Include the term “dry” (e.g., “1 Dry Quart”)
A liquid volume of less than one pint.	Be expressed in fluid ounces and fractions of a fluid ounce.

<b>Table 13. U.S. Customary Units – Largest Whole Unit</b>	
<b>If the declaration of quantity is:</b>	<b>Then the declaration of quantity shall:</b>
A liquid volume of at least one pint, but less than one gallon.	Be expressed in terms of the largest whole unit (quarts, quarts and pints, or pints) with any remainder expressed in fluid ounces or fractions of the pint or quart.  An exception is that two quarts may be declared as one-half gallon.
A liquid volume of more than one gallon.	Be expressed in terms of the largest whole unit (gallons, gallons and quarts, or gallons and pints). With any remainder expressed in fluid ounces or fractions of the pint or quart. This declaration may be accompanied by an additional declaration in fluid ounces.
A dry volume of one dry pint or more.	Be expressed in terms of the largest whole unit (dry pint, dry quart, peck, or bushel) with any remainder expressed in fractions of the smallest unit.
Any remainder.	Be expressed as either a common or decimal fraction (e.g., “1.5-gal,” “3 <sup>1</sup> / <sub>2</sub> qt,” “14.3 fl oz”, and “12 <sup>1</sup> / <sub>4</sub> yd <sup>3</sup> ” are acceptable).
	Be expressed in the next smaller whole unit or units with any further remainder expressed in terms of a common or decimal fraction of the smallest unit present (e.g., “1 gal 1 pint” and “3 qt 8.3 fl oz” are acceptable).

## Section 6. Conversion Factors for Liquid Volume

Use Table 14. “Factors for Converting Liquid Volume” to find the appropriate factor for use in converting U.S. Customary and SI units (metric) to be used in the declaration of net quantity of contents.

<b>Table 14. Factors for Converting Liquid Volume</b> ( <u>underlined</u> figures are exact)					
<b>Unit</b>	<b>Fluid Ounce</b>	<b>Liquid Pint</b>	<b>Liquid Quart</b>	<b>Gallon</b>	<b>Cubic Inch</b>
1 fluid ounce =	<u>1</u>	<u>0.062 5</u>	<u>0.031 25</u>	<u>0.007 812 5</u>	<u>1.804 687 5</u>
1 liquid pint =	<u>16</u>	<u>1</u>	<u>0.5</u>	<u>0.125</u>	<u>28.875</u>
1 liquid quart =	<u>32</u>	<u>2</u>	<u>1</u>	<u>0.25</u>	<u>57.75</u>
1 gallon =	<u>128</u>	<u>8</u>	<u>4</u>	<u>1</u>	<u>231</u>
1 cubic inch =	0.554 112 6	0.034 632 03	0.017 316 02	0.004 329 004	<u>1</u>
<b>Unit</b>	<b>Milliliter (mL)</b>		<b>Liter (L)</b>		
1 fluid ounce =	29.573 53		0.029 573 53		

<b>Table 14. Factors for Converting Liquid Volume</b> ( <u>underlined</u> figures are exact)		
1 liquid pint =	473.176 5	0.473 176 5
1 liquid quart =	946.352 9	0.946 352 9
1 gallon =	<u>3785.411 784</u>	<u>3.785 411 784</u>
1 cubic inch =	16.387 064	0.016 387 06

**Example for Liquid Volume:** You have a two-gallon package and want to determine the equivalent metric value to declare on the label. To convert gallons to liters multiply as follows using the conversion factor from the table which is shown as 3.785 412 Liters:

$$2 \text{ gal} \times 3.785412 \text{ L/gal} = 7.570824 \text{ L}$$

The metric value can be truncated (the extra digits are dropped but remaining digits are not rounded up to avoid overstating the quantity – 7.570824 L) to three digits. Since the SI units should be shown to two or three digits either of the following quantity declarations are acceptable:

2 Gallons (7.57 L) or 7.57 L (2 Gallons)

## Section 7. Factors for Converting the Volume of Dry Measure

Use Table 15. “Factors for Converting the Volume of Dry Measures or Volume of Cubic Measures” to find the appropriate factor to convert U.S. Customary and SI units (metric) for use in the declaration of net quantity of contents.

<b>Table 15. Factors for Converting the Volume of Dry Measure</b> ( <u>underlined</u> figures are exact)						
Units	Dry Pints	Dry Quarts	Pecks	Bushels	Cubic Feet	Liters (cubic decimeters)
1 dry pint =	<u>1</u>	<u>0.5</u>	<u>0.062 5</u>	<u>0.015 625</u>	0.019 444 63	0.550 610 5
1 dry quart =	<u>2</u>	<u>1</u>	<u>0.125</u>	<u>0.031 25</u>	0.038 889 25	1.101 221
1 peck =	<u>16</u>	<u>8</u>	<u>1</u>	<u>0.25</u>	0.311 114	8.809 768
1 bushel =	<u>64</u>	<u>32</u>	<u>4</u>	<u>1</u>	1.244 456	<u>35.239 070 166 88</u>
1 cubic foot =	51.428 09	25.714 05	3.214 256	0.803 563 95	<u>1</u>	<u>28.316 846 592</u>
1 liter =	1.816 166	0.908 083 0	0.113 510 4	0.028 377 59	0.035 314 67	
<b>Factors for Converting the Volume of Cubic Measures</b> ( <u>underlined</u> figures are exact)						
Units	Cubic Inches	Cubic Feet	Cubic Yards	Milliliters (cubic centimeters)	Liters (cubic decimeters)	
1 cubic inch =	<u>1</u>	0.000 578 703 7	0.000 021 433 47	<u>16.387 064</u>	<u>0.016 387 064</u>	
1 cubic foot =	1 728	<u>1</u>	0.037 037 04	<u>28 316.846 592</u>	<u>28.316 846 592</u>	
1 cubic yard =	<u>46 656</u>	<u>27</u>	<u>1</u>	<u>764 554.857 984</u>	<u>764.554 857 984</u>	

**Table 15. Factors for Converting the Volume of Dry Measure**  
(underlined figures are exact)

1 cubic centimeter =	0.061 023 74	0.000 035 314 67	0.000 001 307 951	<u>1</u>	<u>0.001</u>
1 cubic decimeter =	61.023 74	0.035 314 67	0.001 307 951	<u>1 000</u>	<u>1</u>
1 cubic meter =	61 023.74	35.314 67	1.307 951	<u>1 000 000</u>	<u>1 000</u>

**Example for Dry Volume:** You have a 5-dry quart package and want to determine the equivalent metric value to declare on the label. To convert dry quarts to liters multiply as follows using the conversion factor from the table which is shown as 1.101221 liters:

$$5 \text{ dry qt} \times 1.101221 \text{ L/dry qt} = 5.506105 \text{ L}$$

The metric value may be truncated (the extra digits are dropped but remaining digits are not rounded up to avoid overstating the quantity – 5.506105 L) to 3 digits. Since the SI units should be shown to 2 or 3 digits either of the following quantity declarations are acceptable:

5 Dry Quarts (5.5 L) or 5.5 L (5 Dry Quarts)

**Example for Cubic Volume:** You have a 3-Cubic Foot package and want to determine the equivalent metric value to declare on the label. To convert cubic feet to liters multiply as follows using the conversion factor for cubic feet to liters from the table which is shown as 28.316846592 Liters:

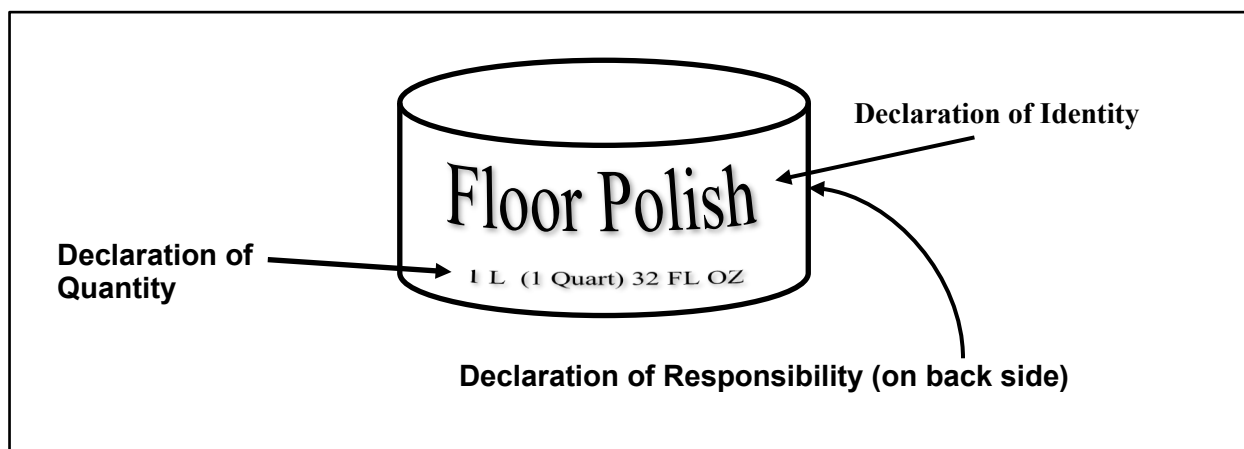
$$3 \text{ cu ft} \times 28.316846592 \text{ L/cu ft} = 84.9505359 \text{ L}$$

The metric value may be truncated (the extra digits are dropped but remaining digits are not rounded to avoid overstating the quantity – 84.9505359 L) to 3 digits. Since the SI units should be shown to 2 or 3 digits the following quantity declarations are acceptable:

3 Cubic Feet (84.9 L) or 84.9 L (3 Cubic Feet)

**NOTE:** If the converted value of 84.9505359 L is rounded up to 85 L the package control process should ensure that the packages contains at least 85 L as the accuracy of the measurement procedure used by weights and measures officials can determine dry volumes accurately to 0.1 L or less. Shown below is an example of a package of container of liquid floor polish with the required label information identified.

### A Package Labeled by Fluid Volume



## Part 5. Packages Labeled by Measure (Length, Area, Thickness)

### Section 1. Declaration of Quantity - Terms

A quantity declaration must appear on the principal display panel of the package and may stand alone or may include the term "net" or "net quantity." Thickness measurements are required on products such as polyethylene sheeting and bags and other product and these requirements are described in the Uniform Method of Sale of Commodities Regulation in NIST Handbook 130.

**Example:** Net Qty 100 sq cm (3.28 sq ft) or Net 15.24 cm (6 in)

### Section 2. Declaration of Units

#### a. Units for SI (Metric System) Quantity Declarations

Only the words and symbols in Table 16. "SI Units and Symbols" may be used in conjunction with a width or area declaration.

<b>Table 16. SI Units and Symbols</b>	
<b>Unit</b>	<b>Symbol</b>
micrometer	$\mu\text{m}$
millimeter	mm
centimeter	cm
meter	m
square millimeter	$\text{mm}^2$ or sq mm
square centimeter	$\text{cm}^2$ or sq cm
square meter	$\text{m}^2$ or sq m

#### b. Largest Whole Unit

The quantity declaration shall be in terms of the largest whole unit of length or area with any remainder expressed in decimal fractions to not more than three decimal places. Use Table 17. "SI Units – Largest Whole Unit – Length or Area" to determine the largest whole unit to be used in the quantity declaration.

<b>Table 17. SI Units – Largest Whole Unit – Length or Area</b>	
<b>If length is:</b>	<b>Then the quantity shall be expressed in:</b>
Less than one centimeter.	Millimeters.
More than one centimeter but less than one meter.	Centimeters (if less than 100 centimeters either centimeters or millimeters may be used)
More than one meter.	Meters
<b>If area is:</b>	<b>Then the quantity shall be expressed in:</b>
Less than one square centimeter	Square millimeters.

<b>Table 17.</b> <b>SI Units – Largest Whole Unit – Length or Area</b>	
Up to one square meter	Square centimeters.
More than one square meter	Square meters.

**c. Units for U.S. Customary Units Declarations**

Only the words and abbreviations in Table 18. “U.S. Customary Units and Abbreviations” may be used in conjunction with a length or area declaration:

<b>Table 18.</b> <b>U.S. Customary Units and Abbreviations</b>	
<b>Unit</b>	<b>Abbreviation</b>
mil*	mil
inch	in
foot	ft
yard	yd
square inch	in <sup>2</sup> or sq in
square foot	ft <sup>2</sup> or sq ft
square yard	yd <sup>2</sup> or sq yd
*A unit of length equal to one thousandth of an inch (0.001) or 0.0254 mm. Typically used in declaring the thickness of polyethylene sheeting and bags or the diameter of wire.	

**d. Largest Whole Unit**

Use Table 19. “U.S. Customary Units – Largest Whole Unit” to determine the largest whole unit and other requirement to be used in the declaration of net quantity of contents.

<b>Table 19.</b> <b>U.S. Customary Units – Largest Whole Unit – Length or Area</b>	
<b>If length is:</b>	<b>Then the quantity* shall be expressed in:</b>
Less than one foot.	Inches and fractions of an inch.
More than one foot, but less than one yard.	Feet and in fractions of a foot or in inches.
More than one yard.	Yards and fractions of a yard.
<b>If area is:</b>	<b>Then the quantity* shall be expressed in:</b>
Less than one square foot.	Square inches and fractions of a square inch.
One square foot to one square yard.	Square feet and fractions of a square foot, or in square feet with the remainder in square inches and fractions of a square inch.
More than one square yard	Square yards and fractions of a square yard, or in square yards and the remainder in square feet and square inches.

\*Any remainder may be expressed as either a common or decimal fraction (e.g., 1.5 yd, 3<sup>1</sup>/<sub>2</sub> ft, 14.3 in<sup>2</sup>, and 12<sup>1</sup>/<sub>4</sub> sq yd are acceptable).

### Section 3. Factors for Converting Quantities of Length and Area

To find the appropriate factor for use in converting U.S. Customary and SI units (metric) to be used in the declaration of net quantity of contents use Table 20. “Factors for Converting Length” and Table 21. “Factors for Converting Area.”

Table 20. Factors for Converting Length (underlined figures are exact)						
Units	Inches	Feet	Yards	Millimeters	Centimeters	Meters
1 inch =	<u>1</u>	0.083 333 33	0.027 777 78	<u>25.4</u>	<u>2.54</u>	<u>0.025 4</u>
1 foot =	<u>12</u>	<u>1</u>	0.333 333 3	<u>304.8</u>	<u>30.48</u>	<u>0.304 8</u>
1 yard =	<u>36</u>	<u>3</u>	1	<u>914.4</u>	<u>91.44</u>	<u>0.914 4</u>
1 millimeter =	0.039 370 08	0.003 280 840	0.001 093 613	<u>1</u>	<u>0.1</u>	<u>0.001</u>
1 centimeter =	0.393 700 8	0.032 808 40	0.010 936 13	<u>10</u>	<u>1</u>	<u>0.01</u>
1 meter =	39.370 08	3.280 840	1.093 613	<u>1000</u>	<u>100</u>	1
1 mil =	<u>0.001</u>	N/A	N/A	<u>0.025 4</u>	<u>0.00254</u>	N/A

Table 21. Factors for Converting – Area						
Units	Square Inches	Square Feet	Square Yards	Square Millimeters	Square Centimeters	Square Meters
1 sq inch =	<u>1</u>	0.006 944 444	0.000 771 604 9	645.46	6.451 6	<u>0.000 645 16</u>
1 sq foot =	<u>144</u>	<u>1</u>	0.111 111 1	7741.92	<u>929.030 4</u>	<u>0.092 903 04</u>
1 sq yard =	<u>1296</u>	9	<u>1</u>	836 127.36	<u>8361.273 6</u>	<u>0.836 127 36</u>
1 sq millimeter =	0.001 55	N/A	N/A	<u>1</u>	<u>0.01</u>	<u>0.000 000 1</u>
1 sq centimeter =	0.155 000 3	0.001 076 391	0.000 119 599 0	<u>100</u>	<u>1</u>	<u>0.000 1</u>
1 sq meter =	1550.003	10.763 91	1.195 990	<u>1 000 000</u>	<u>10 000</u>	<u>1</u>

**For example:** You have a product that is 100 feet long and you want to determine the equivalent metric value to declare on the label. To convert feet to meters, multiply the number of feet by the conversion factor from the table which is shown as 0.3048:

$$100 \text{ ft} \times 0.3048 \text{ m/ft} = 30.48 \text{ meters}$$

The metric value may be truncated (the extra digits are dropped but remaining digits are not rounded up to avoid overstating the quantity – 30.48 to 3 digits. Since the SI metric units should be shown to two or three digits the following quantity declarations are acceptable:

$$100 \text{ ft (30.4 m) or } 30.4 \text{ m (100 ft)}$$



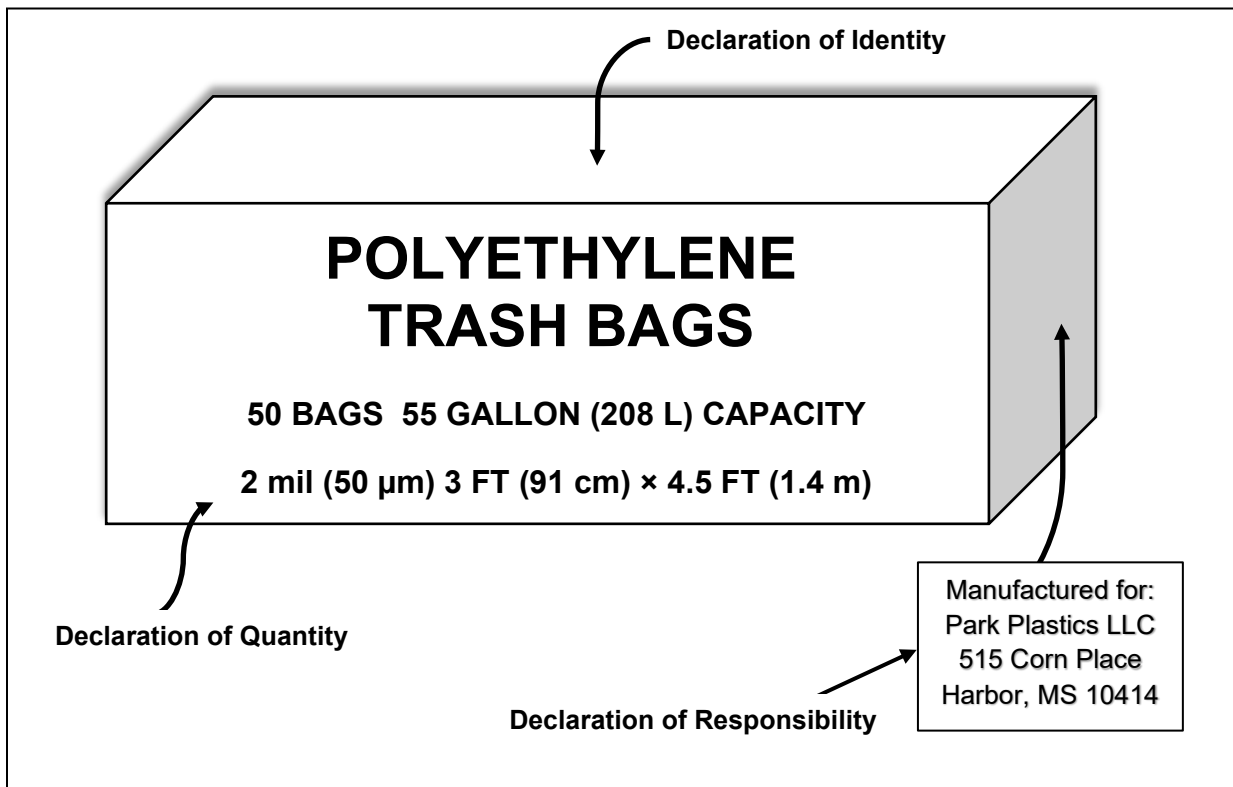
**For example:** You have a product that is 50 square yards and you want to determine the equivalent metric value to declare on the label. To convert square yards to square meters, multiply the number of square yards by the conversion factor from the table which is shown as 0.83612736:

$$50 \text{ yd}^2 \times 0.83612736 \text{ m}^2/\text{yd}^2 = 41.806368 \text{ square meters}$$

The metric value may be truncated (the extra digits are dropped but remaining digits are not rounded up to avoid overstating the quantity – 41.806368) to 3 digits. Since the SI metric units should be shown to two or three digits the following quantity declarations are acceptable:

$$50 \text{ sq yd (41.8 sq m) or 41.8 sq m (50 sq yd)}$$

### An example of a package labeled by Weight, Count, Linear Measure and Thickness



## Part 6. Packages Labeled by Count

### Section 1. Quantity Declaration

A quantity declaration of numerical count shall appear on the principal display panel of packages offered for sale on the basis of count. The quantity declaration can stand alone and should not include the terms "net quantity" or word "net." See Table 22. "Terms and Abbreviations for Declarations of Quantity by Count" for acceptable terms and abbreviations for use on packages labeled by numerical count.

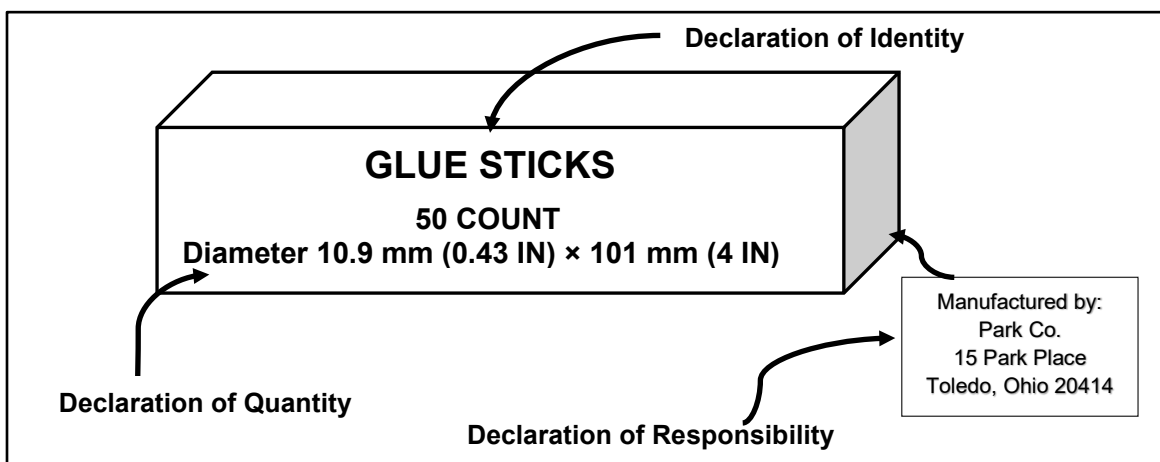
<b>Term</b>	<b>Abbreviation</b>
count	ct
each	ea
piece	pc

**Examples:** 12 pieces or 500 count or 12 pc or 500 ct

### Section 2. Labeling Packages by Count

When a packaged consumer commodity is measured in terms of count only, or in terms of count and some other appropriate unit (e.g., length, width, thickness or diameter), such packages shall be labeled in full accord with the UPLR, including a statement of count. See Figure 17. "Package Labeled by Count, Linear Measure and Diameter" for an example of a box of glue sticks with the required label information. When the net contents declaration of a package includes count, the FPLA (e.g., items under the FDA or FTC regulations) provides no exemption from declaring the count unless the package only contains a single item. Packages with only a single unit are not required to declare the quantity of "one (1)" provided the statement of identity clearly conveys the fact that only one item is in the package (e.g., "light bulb"). If, however, the packaged food or consumer commodity is not under FDA or FTC regulations and the individual units are fully visible to the purchaser, a statement of count is not required if the package contains six or less units. Depending on the commodity, net quantity statements specifying weight, volume, length, or area are required in addition to count if count alone is not fully informative. See the Method of Sale of Commodities Regulation in NIST Handbook 130 for more information.

**Figure 17. A Package Labeled by Count, Linear Measure and Diameter**



## Part 7. Exemptions to Labeling Requirements

There are a wide variety of sizes and types of packages in the marketplace there are several exemptions to the declaration of identity and quantity labeling requirements for some packages. Table 23. “Exemptions to Labeling Requirements” provides an alphabetical list of the exemptions for individual products and the corresponding UPLR Section where the full text can be found. See Section 11. “Exemptions” in the UPLR at: [www.nist.gov/pml/wmd/pubs/hb130.cfm](http://www.nist.gov/pml/wmd/pubs/hb130.cfm).

<b>Table 23. Exemptions to Labeling Requirements</b>	
<b>Product</b>	<b>UPLR Section</b>
Butter	11.13. Butter
Candy - Small Confections (individually wrapped “penny candy” that weigh less than 15 g [ $\frac{1}{2}$ oz])	11.2. Small Connections
Cigarettes and Small Cigars	11.7. Cigarettes and Small Cigars
Combination Packages	11.18. Combination and Variety Packages
Condiment Packets – Individual Serving Packets (e.g., small packets of artificial sweeteners or sugar)	11.4. Individual Servings
Corn Flour and Corn Meal	11.20. Corn Flour and Corn Meal
Cosmetics - Decorative Containers of Cosmetics	11.17. Decorative Containers
Count - Packaged Commodities Sold by Count	11.27. Packaged Commodities Sold by Count
Eggs	11.14. Eggs
Film – Camera Film, Video Recording Tape, Audio Recording Tape, and Other Image and Audio Recording Media	11.22. Camera Film, Video Recording Tape, Audio Recording Tape, and Other Image and Audio Recording Media
Flour	11.15. Flour
Fluid Dairy Products, Ice Cream, and Similar Frozen Desserts	11.9. Fluid Dairy Products, Ice Cream, and Similar Frozen Desserts
Header Strip – a label that is attached across the top of a transparent or opaque bag or other container that bears no other printed or graphic material.	11.30. Header Strip
Margarine	11.19. Margarine
Meat Snacks - Small Packages of Meat or Meat Products (individually wrapped pieces that weigh less than 15 g ( $\frac{1}{2}$ oz))	11.3. Small Packages of Meat or Meat Products
Motor Oil in Cans	11.24. Motor Oil in Cans
Reusable (Returnable) Glass Containers (e.g., soda bottles) (See also 11.12 below)	11.6. Reusable (Returnable) Glass Containers

**Table 23.  
Exemptions to Labeling Requirements**

<b>Product</b>	<b>UPLR Section</b>
Packaged Commodities with Labeling Requirements Specified in Federal Law – (e.g., Treasury for tobacco, alcohol, and beer; USDA Food Safety and Inspection Service for meat, catfish, and poultry; EPA for pesticides; FDA – food, cosmetics and drugs; FTC for non-food consumer commodities).	11.8. Packaged Commodities with Labeling Requirements Specified in Federal Laws and Regulations.  Reference information can be found in HB 130, UPLR, Appendix C.
Prescription and Insulin Containing Drugs	11.21. Prescription and Insulin Containing Drugs
Pillows, Cushions, Comforters, Mattress Pads, Sleeping Bags, and Similar Products	11.25. Pillows, Cushions, Comforters, Mattress Pads, Sleeping Bags, and Similar Products
Random Weight Packages (e.g., meat, poultry, seafood, cheeses, and produce sold in retail stores)	11.1. Random Packages.
SI Units, Exemptions - Consumer Commodities	11.32. SI Units, Exemptions - Consumer Commodities.
Single Strength and Less than Single-Strength Fruit Juice Beverages, Imitations thereof, and Drinking Water	11.10. Single Strength & Less than Single-Strength Fruit Juice Beverages
Small Packages	11.16. Small Packages
Soft Drink Bottles	11.11. Soft Drink Bottles
Soft Drink - Multi-Unit Soft Drink Packages	11.12. Multi-unit Soft Drink Packages
Spot Label	11.29. Spot Label
Textile Packages	11.28. Textile Packages
Tint Base Paint	11.23. Tint Base Paint
Cuts, Plugs, and Twists of Tobacco and Cigars	11.5. Cuts, Plugs, and Twists of Tobacco and Cigars
U.S. Customary Units, Exemptions - Consumer Commodities	11.33. U.S. Customary Units, Exemptions - Consumer Commodities
Variable Weight and Size Packages	11.26. Commodities - Variable Weights and Sizes
Variety Packages	11.18. Combination and Variety Packages
Wallpaper - Decorative Wallcovering Borders	11.31. Decorative Wallcovering Borders

## **Part 8. Label Review Checklist**

### **Section 1. Declaration of Identity**

- Appears on the principal display panel and 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 (e.g., polishing paste).

### **Section 2. Declaration of Responsibility**

- Is displayed on packages kept, offered, or exposed for sale or sold at a location other than where 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 readily accessible, widely published, and publicly available resource, including but not limited to a printed directory, electronic database, or Web site.
- 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").

### **Section 3. Declaration of Quantity**

- Appears in the lower 30 % of the principal display panel and is 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 and has the required amount of free area.
- Appears in a style of type or lettering is bold, clear, and conspicuous and the type or lettering is proportional.
- Type or lettering meets the minimum height requirements.
- Generally, includes both SI Units and U.S. Customary Units.
- Uses only approved words, symbols or abbreviations for the SI and customary units in the singular form.
- Uses SI symbols that are not capitalized and SI symbols and customary unit abbreviations are not accompanied by periods or with other punctuation marks.
- Is declared in terms of the largest whole unit and SI units comply with the Rule of 1000. Quantities are rounded appropriately so quantity declarations are not overstated.
- Uses SI declarations that are displayed in 2 or 3 digits and SI declarations contain only decimal fractions.
- Does not appear in conjunction with an improper qualifying phrase.
- When necessary, is combined with appropriate additional quantity declarations.

**Part 9. Resources**

<b>RESOURCES</b>	
<p><b>National Institute of Standards and Technology (NIST)</b> Office of Weights and Measures (OWM) 100 Bureau Drive, Mailstop 2600 Gaithersburg, MD 20899-2600 Telephone: (301) 975-4004 E-mail: <a href="mailto:owm@nist.gov">owm@nist.gov</a></p>	<p>Metric system: E-mail: <a href="mailto:TheSI@nist.gov">TheSI@nist.gov</a> or visit <a href="http://www.nist.gov/metric">www.nist.gov/metric</a></p> <p>NIST Handbook 130 – “Uniform Laws and Regulations in the Areas of Legal Metrology and Fuel Quality”: <a href="http://www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-130">www.nist.gov/pml/weights-and-measures/publications/nist-handbooks/handbook-130</a></p> <p>NIST Handbook 133 – “Checking the Net Contents of Packaged Goods”: <a href="http://www.nist.gov/pml/weights-and-measures/handbook-133-2020-current-version">www.nist.gov/pml/weights-and-measures/handbook-133-2020-current-version</a></p>
<p><b>U.S. Federal Trade Commission (FTC)</b> 600 Pennsylvania Ave, NW Washington, DC 20580 Telephone: (202) 326-2222 <a href="http://www.ftc.gov">www.ftc.gov</a></p>	<p>The Fair Packaging and Labeling Act (FPLA) is available at: <a href="http://www.ftc.gov/enforcement/statutes/fair-packaging-and-labeling-act">www.ftc.gov/enforcement/statutes/fair-packaging-and-labeling-act</a></p>
<p><b>U.S. Food and Drug Administration (FDA)</b> 5600 Fishers Lane Rockville, MD 20857 Telephone: (888) 463-6332 <a href="http://www.fda.gov">www.fda.gov</a></p>	<p>“<b>Guidance for Industry: Food Labeling Guide</b>”: <a href="http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm2006828.htm">www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/ucm2006828.htm</a></p> <p>Cosmetic Labeling Regulations search for Title 21, Chapter I, Subchapter G, Part 701 “Cosmetic Labeling” at <a href="http://www.ecfr.gov">www.ecfr.gov</a></p>
<p><b>U.S. Department of Agriculture (USDA)</b> Food Safety and Inspection Service (FSIS) 1400 Independence Ave., S.W. Washington, DC 20250-3700 Telephone: (301) 504-0868 <a href="http://www.fsis.usda.gov">www.fsis.usda.gov</a></p>	<p>For an overview of the USDA labeling requirements for meat and poultry products see: <a href="http://www.fsis.usda.gov/shared/PDF/Labeling_Requirements_Guide.pdf">www.fsis.usda.gov/shared/PDF/Labeling_Requirements_Guide.pdf</a></p> <p>Other labeling information: <a href="http://www.fsis.usda.gov/wps/portal/fsis/topics/regulatory-compliance/compliance-guides-index/labeling-guidance">www.fsis.usda.gov/wps/portal/fsis/topics/regulatory-compliance/compliance-guides-index/labeling-guidance</a></p>
<p><b>U.S. Environmental Protection Agency (EPA)</b> 1200 Pennsylvania Avenue, N.W. Washington, DC 20460 (202) 564-4700 <a href="http://www.epa.gov">www.epa.gov</a></p>	<p>For labeling requirements for pesticides: <b>Refer to § 156.10 “Labeling requirements.”</b></p> <p>“Pesticide Registration – Label Review Manual” at <a href="http://www.epa.gov/pesticide-registration/label-review-manual">www.epa.gov/pesticide-registration/label-review-manual</a>.</p>

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