



# Nutrient Codes

*Use of the INFOODS Code Set  
for population of GDSN Data in the United States*

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## 1. Introduction

The Foodservice Industry is being tasked to provide the advanced data requirements to meet consumer needs. The industry has determined that use of the GS1 standards can assist them in providing the information requested in a standardized fashion, in particular nutritional information. While preparing to utilize GDSN to collect this standardized information, they requested guidance on how to populate nutrition information. This guide is in response to that request, but is not specific to the Foodservice Industry. It can be used by any industry in which nutritional information about food items needs to be shared in a standardized fashion.

### 1.1. Purpose and Scope of This Document

This guideline is based on the presumption that the reader already has a functional understanding of the Global Data Synchronization Network (GDSN) and the Food and Beverage Extension. The purpose of this guideline is to provide a recommendation on how to use the INFOODS Code Set to populate the Nutrient Type Code (nutrientTypeCode) attribute.

The Food and Beverage Extension provides nutrient information through a series of attributes. The primary attribute in the series is the Nutrient Type Code. This is a code value derived from an external code set managed by the International Network of Food Data Systems Project (INFOODS). This code set contains a list of Tagnames for food components from which information can be populated.

The main purpose for the use of the INFOODS Code Set in the Food and Beverage Extension is to identify the nutrients contained in a trade item as noted on the side panel of the package. For the most part, food products are required to provide some sort of nutritional fact panel on the packaging for the item. In the United States, this information must be provided following the guidelines set forth in the Nutrition Labeling and Education Act (NLEA). This act set forth specific regulations as to the style and content of the nutrition fact panel. It is from this panel that the Nutrient, Ingredient, and Allergen information is to be populated in the Food and Beverage Extension.

### 1.2. How to Use this Document

This guideline provides a recommendation in 3 parts as they relate to GDSN use.

1. Section 2 provides background information on the INFOODS Code Set.
2. Section 3 provides information on Nutrition Fact Panels.
3. Section 4 details population of INFOODS codes through 2 tables
  - Table 1 matches INFOODS Codes against the FDS NLEA Act requirements.



- Table 2 provides other INFOODS Codes which might also be useful.

### 1.3. Who Should Use this Document

This is a practical guide intended for those responsible for populating and receiving information using the GDSN Food and Beverage Extension's Nutrient Type Code attribute using the INFOODS Code Set.

## 2.0. INFOODS Code Set Details

INFOODS objective is to uniquely identify each food component with a Tagname. The INFOODS Code Set can be found at the link- [http://www.fao.org/infoods/Tagnames\\_en.stm](http://www.fao.org/infoods/Tagnames_en.stm). This is an evolving project as new components are found or created over time.

Some components are simple and require only one Tagname. For others it is necessary to create multiple Tagnames to correspond to one common nutrient. The rationale for the creation of multiple Tagnames is

1. The identification of the individual active components of a nutrient
2. The specification of the method used to determine a nutrient value
3. The distinction of the terms in which the values may be expressed.

For components with multiple Tagnames, the user or supplier of the information may need to make a determination as to which Tagname is best to be used for each item.

On the INFOODS website, several text files contain the full list as it has evolved. In each file is the list of the Tagnames along with several additional pieces of information to assist with defining each code. The following information is available:

- Tagname - A single, unique abbreviation
- Name of Food Component - A descriptive name or definition
- Unit - A common or default *unit of measurement* for expressing its quantity per 100 grams of edible portion of food
- Synonyms - *Synonymous names* by which the component is known (including common abbreviations that occur in standard tables)
- Comments - Other information for those food components which require further definition or clarification



- Food Tables - A listing of *selected tables* in which data on the specific component occur

**Note:** *The INFOODS Team reviewed major food composition tables from around the world. The Code Set contains the harmonized set of Tagnames and each definition includes a list of the reviewed food tables in which it was found and could be unambiguously identified. In addition, the USDA nutrient number is included for those Tagnames for which data exist in the complete USDA nutrient data base*

- Notes, Keywords, and Examples - Additional information, identified as *notes, keywords, and examples*, which appears with a few entries

### 2.1. Determining Which INFOODS Tagname to Utilize

The GDSN relies on INFOODS to provide a code set from which information can be shared about a product. This approach of utilizing an external code set affords the community the confidence that the list is managed, updated, and maintained by experts in the field. While the INFOODS Code Set does an excellent job providing a Tagname for foods components, its scientific approach and complexity may create an issue in the determination of which code to utilize for GDSN.

For some Tagnames, the code to use is a simple choice as there is only one code available. However, as mentioned previously, many of the codes have multiple values, and this is where the complexity begins. The user or data supplier might need to reach out to scientific staff members or food experts, from whom the NLEA Panel information was derived, to ask for assistance in choosing the correct Tagname for each nutrient. At best this can be difficult and challenging resulting in the need for a simple approach to accomplish this task.

Where there are options for multiple Tagnames there is a corresponding “generic” Tagname provided for each of the food components. Typically the food component has a “generic” Tagname with its name containing a phrase stating that the method of determination is “unknown” or “not specified”. This “generic” Tagname allows the user or supplier of data the ability to utilize the system even when they do not know how the nutrient information is determined.

### 3.0. Nutrition Facts Panel

The primary use of the INFOODS Tagnames in the GDSN is to communicate nutrient values as expressed in the nutrient fact panels on the side of the packaging. In the US Target Market, many food or nutrition products are required to provide nutrition facts according to the US Food and Drug Administration’s (FDA) Nutrition Labeling and Education Act (NLEA) Requirements (8/94-2/95). There are several different formats governed by the US Food and Drug Administration, several examples are shown in figure 1.



Figure 1: Sample NLEA Panel formats provided by the FDA

Nutrition Facts		Amount Per Serving	% Daily Value*	Amount Per Serving	% Daily Value*
Serving Size 2 slices (56g) Servings Per Container 10		<b>Total Fat</b> 1.5g	<b>2%</b>	<b>Total Carbohydrate</b> 25g	<b>9%</b>
<b>Calories</b> 140 Calories from Fat 10		<b>Saturated Fat</b> 0.5g	<b>3%</b>	<b>Dietary Fiber</b> 2g	<b>8%</b>
		<b>Trans Fat</b> 0.5g		Sugars 1g	
		<b>Cholesterol</b> 0mg	<b>0%</b>	<b>Protein</b> 4mg	
		<b>Sodium</b> 280mg	<b>12%</b>		
		Vitamin A 0%	Vitamin C 0%	Calcium 6%	Iron 6%
		Thiamin 15%	Riboflavin 8%	Niacin 10%	

\*Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300g	300g
Sodium	Less than	2,400g	2,400g
Total carbohydrates	Less than	300g	375g
Dietary Fiber		25g	30g

Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4

Nutrition Facts		
Serving Size 1 Cup (35g) Servings Per Container 10		
Amount Per Serving		Cereal with 1/2 Cup Skim Milk
<b>Calories</b>	130	170
Calories from Fat	0	0
<b>% Daily Value**</b>		
<b>Total Fat</b> 0g*	<b>0%</b>	<b>0%</b>
Saturated Fat 0g	<b>0%</b>	<b>0%</b>
Trans Fat 0g	<b>0%</b>	<b>0%</b>
<b>Cholesterol</b> 0mg	<b>0%</b>	<b>0%</b>
<b>Sodium</b> 200mg	<b>8%</b>	<b>11%</b>
<b>Total Carbohydrate</b> 30mg	<b>10%</b>	<b>12%</b>
Dietary Fiber 4g	<b>16%</b>	<b>16%</b>
Sugars 18g		
<b>Protein</b> 3g		
Vitamin A	25%	25%
Vitamin C	25%	25%
Calcium	0	15%
Iron	10%	10%

\*Amount in Cereal. One half cup skim milk contributes an additional 40 calories, 65mg sodium, 6g total carbohydrates (6g sugars), and 4g protein.

\*\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300g	300g
Sodium	Less than	2,400g	2,400g
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4

Nutrition Facts	Wheat Squares Sweetened	Corn Flakes Non-Sweetened	Mixed Grain Flakes Sweetened
Serving Size 1 box	(35g)	(19g)	(27g)
Servings Per Container	1	1	1
<b>Amount Per Serving</b>			
<b>Calories</b>			
Calories from Fat	130	70	100
	0	0	0
	<b>% Daily Value*</b>	<b>% Daily Value*</b>	<b>% Daily Value*</b>
<b>Total Fat</b>	0g <b>0%</b>	0g <b>0%</b>	0g <b>0%</b>
Saturated Fat	0g <b>0%</b>	0g <b>0%</b>	0g <b>0%</b>
Trans Fat	0g	0g	0g
<b>Cholesterol</b>	0mg <b>0%</b>	0mg <b>0%</b>	0mg <b>0%</b>
<b>Sodium</b>	0mg <b>0%</b>	200mg <b>8%</b>	120mg <b>5%</b>
<b>Potassium</b>	125mg <b>4%</b>	25mg <b>1%</b>	30mg <b>1%</b>
<b>Total Carbohydrate</b>	29g <b>10%</b>	17g <b>6%</b>	24g <b>8%</b>
Dietary Fiber	3g <b>12%</b>	1g <b>4%</b>	1g <b>4%</b>
Sugars	8g	6g	13g
<b>Protein</b>	4g	1g	1g
	Vitamin A 0%	10%	10%
	Vitamin C 0%	15%	90%
	Calcium 0%	0%	0%
	Iron 10%	6%	20%
	Thiamin 10%	15%	20%
	Riboflavin 30%	15%	20%
	Niacin 30%	15%	20%
	Vitamin B <sub>6</sub> 30%	15%	20%

\*Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300g	300g
Sodium	Less than	2,400g	2,400g
Potassium	Less than	3,500g	3,500g
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g



## **4.0. Recommendations on Use**

The following section provides recommendations on population of nutrient values and on the INFOODS codes which should be used to populate data matching the FDA NLEA requirements.

### **4.1. Recommendations on GDSN Population of values**

The nutrient information contained on the NLEA Panel can be populated through the use of the GDSN Food and Beverage extension and the INFOODS Code Set. For each nutrient, the data supplier provides specific values as presented on the side of the product's packaging. There are two attributes which are used to populate those values: the percentage of recommended daily values and a quantity. Suppliers of data can populate either or both of these values. It is recommended that at a minimum the value(s) which are provided on the package should be populated. For those values populated as "N/A", meaning that that value is optional and not present on the label, the nutrient should not be populated in the GDSN.

### **4.2. Recommendation on Determining Which INFOODS Tagname to Utilize**

The following recommendation offers a solution which makes the choice of the proper Tagname simpler and easier. The recommendation will provide both sides of the trading partner relationship with an understanding of which Tagnames are most relevant for the US Target Market. While a comparison list of matches can be derived between current values in both the INFOODS and NLEA lists, it should be noted that there may be other food components which may need to be communicated which are not in the comparison matching list. For those food components, it will be necessary to use other Tagnames chosen from the full Code Set. To aid the community, a set of tables have been compiled to further clarify the INFOODS Code Set.

Step 1: Table 1 provides a comparison matching list between the US FDA NLEA and the INFOODS Code Set. This table is used to populate required attributes.

Step 2: Table 2 provides a list of additional code values from the code set which can be used by trading partners. These values are recommended and utilize the "generic" Tagnames as much as possible for food components with multiple values. These include nutrients that are used on some packaging over and above what is required by NLEA. These values are recommended and utilize the "generic" Tagnames as much as possible for food components with multiple values.



Data Recipients should be prepared to receive any of these codes. Use of these tables will make understanding and utilizing the information simpler. Where the data recipient wants or needs specific Tagnames, not the generic ones, and the supplier is unable to do so, the trading partners need to reach consensus on a path forward.

Within the INFOODS Code Set, there is a recommended unit of measure (UoM) for each food component. The units were determined based on a global framework. However, not all of these recommended UoMs are applicable in all target markets. For example, the code set recommends the use of “kilo-joules” when describing the number of calories. For some target markets, it is more applicable to use the UoM “calorie” instead. It is therefore recommended for target market US that the UoM populated in the GDSN be the UoM that is stated on the product’s packaging whether or not it matches the INFOODS recommended UoM.



**Table 1: Comparison Matching List between FDA NLEA and INFOODS Code Set**

The following describes the format to be used in the comparison table.

INFOODS Tagname	US FDA NLEA			
	Nutrients	Mandatory (M) or Voluntary (V)	Printing Requirements	
The recommended Tagname for this US FDA NLEA Nutrient	The nutrient which should or might be present on the NLEA Panel	Is the nutrient required to be on the packaging according to the NLEA?	Is the nutrient required to be represented in <b>BOLD</b> typeface?	Is the nutrient required to be indented in relation to other nutrients on the NLEA Panel?

The following table is a comparison list of values between the US FDA NLEA and the INFOODS Code Set. The values are listed in order as they would appear on the NLEA Panel on the products packaging.

INFOODS Tagname	US FDA NLEA			
	Nutrients	Mandatory (M) or Voluntary (V)	Printing Requirements	
ENER-	Calories (Total Calories or Calories Total 101.9(C)(1)	M	BOLD	
ENERPF	Calories from Fat 101.9(C)(1)(ii)	M		INDENT (In standard vertical display should follow "Calories" on same line.)
( Tagname Pending)	Calories from Sat Fat 101.9(C)(1)(iii)	V		INDENT
FATNLEA	Total Fat (Fat Total) 101.9(C)(2)	M	BOLD	
FATRAN	Transfatty Acids	Unknown *	Unknown *	
FASAT	Saturated Fat (Saturated) 101.1(C)(2)(I)	M		INDENT
FAPU	Polyunsaturated Fat(Polyunsaturated) 101.9(C)(2)(iii)	V		INDENT
FAMS	Monounsaturated Fat (Monounsaturated) 101.9(C)(2)(ii)	V		INDENT
CHOL-	Cholesterol 101.9(o)(3)	M	BOLD	
NA	Sodium(101.9(c)4)	M	BOLD	
K	Potassium 101.9(c)(5)	V	BOLD	



INFOODS Tagname	US FDA NLEA			
	Nutrients	Mandatory (M) or Voluntary (V)	Printing Requirements	
CHO-	Carbohydrate Total (Total (Carbohydrate) 101.9(c)(6))	M	BOLD	
FIBTSW	Dietary Fiber 101.9(c)(6)(i)	M		INDENT
FIBSOL	Soluble Fiber 101.9(c)(6)(i)(B)	V		INDENT
FININS	Insoluble Fiber	Unknown *	Unknown *	Unknown *
SUGAR-	Sugars 101.9(c)(6)(ii)	M		INDENT
POLYL	Sugar Alcohol (May state specific sugar alcohol if only one) 101.9(C)(6)(iii)	V		INDENT
Use Full INFOODS Code Set to determine relevant values based on carb being reported	Other Carbohydrates 101.9(c)(6)(iv)	V		INDENT
PRO-	Protein 101.9(c)(7)	M	BOLD	
VITA-	Vitamin A	M		
VITC-	Vitamin C	M		
CA	Calcium	M		
FE	Iron	M		
Use Full INFOODS Code Set to determine relevant values based on vitamin being reported	Any other Vitamin or mineral listed in 101.9(C)(8)(iv) (in order given)	V		No indent (can list horizontally or in columns)
CARTB	% of Vitamin A as beta carotene 101.9(c)(8)(iv)	V		INDENT (or In parenthesis)
VITD-	Vitamin D	V		No indent (can list horizontally or in columns)
VITE-	Vitamin E	V		No indent (can list horizontally or in columns)
THIA	Thiamin (Vitamin B <sub>1</sub> )(* )	V		No indent (can list horizontally or in columns)
RIBF	Riboflavin (Vitamin B <sub>2</sub> )(* )	V		No indent (can list horizontally or in columns)
NIA	Niacin Vitamin B <sub>6</sub>	V		No indent (can list horizontally or in columns)
FOL-	Folate (Folacin)(* )	V		No indent (can list horizontally or in columns)



INFOODS Tagname	US FDA NLEA			
	Nutrients	Mandatory (M) or Voluntary (V)		Printing Requirements
VITB12	Vitamin B <sub>12</sub>	V		No indent (can list horizontally or in columns)
BIOT	Biotin	V		No indent (can list horizontally or in columns)
PANTAC	Pantothenic Acid	V		No indent (can list horizontally or in columns)
P	Phosphorus	V		No indent (can list horizontally or in columns)
ID	Iodine	V		No indent (can list horizontally or in columns)
MG	Magnesium	V		No indent (can list horizontally or in columns)
ZN	Zinc	V		No indent (can list horizontally or in columns)
CU	Copper	V		No indent (can list horizontally or in columns)

*\* These nutrients are not specifically listed in the US FDA NLEA Information, but have been listed on fact panels. Therefore it was determined best to share in this comparison list.*

**Table 2: Additional INFOODS Codes Recommended for Use**

The following table contains the recommended additional list of the INFOODS Code Set for use with GDSN. This table has been sorted alphanumerically by the Basic Name of the Food Component.

Tagname	Name of Food Component	Notes, Keywords, and Examples	Unit	Comment	Synonyms	Food Tables
CAFFN	caffeine		mg			USDA 262, SFK
FD	fluoride		mcg		fluorine	USDA 313, SFK, EA, SWD
GLUTN	gluten		mg			
LACS	lactose		g			USDA 213, SFK, DAN, SWD
NACL	Salt		mg		NACL	USDA 375, SFK
STARCH-	starch, avl, expression unknown	starch, available, expression unknown	g	The sum of all polysaccharides yielding glucose after hydrolysis with suitable enzymes; includes amylose, amylopectin, glycogen, and dextrans. The expression is unknown if by weight or in monosaccharide equivalent		
WATER	water		g		moisture	USDA 255, SFK, MW, ETH, EGP, IND, NE, EA, PRC, DAN, SWD



## 5.0. References

The following references were used in the creation of this guideline.

United Nations University Press-

<http://unu.edu/unupress/unupbooks/80734e/80734E08.htm#Introduction>

The International Network of Food Data Systems- [http://www.fao.org/infoods/tagnames\\_en.stm](http://www.fao.org/infoods/tagnames_en.stm)

FDA Inspection Guides; Nutrition Labeling Summary Sheet (Attachment 25) -

<http://www.fda.gov/ICECI/Inspections/InspectionGuides/ucm114703.htm>

FDA Labeling Guide-

<http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/FoodLabelingNutrition/FoodLabelingGuide/ucm064904.htm#general>

GS1 Global Data Synchronization Network (GDSN) - <http://www.gs1.org/gdsn>

GS1 Knowledge Centre- <http://www.gs1.org/gsm/kc/gdsn>

GS1 Global Data Dictionary (GDD) - <http://gdd.gs1.org/gdd/public/default.asp>

GS1 US Foodservice Initiative- <http://www.gs1us.org/foodservice>