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April 1, 2021

Via FedEx & CD-ROM

Dr. Susan Carlson
Director, Division of Biotechnology and
GRAS Notice Review
Office of Food Additive Safety (HFS-200)
Center for Food Safety and Applied Nutrition
Food and Drug Administration
5100 Paint Branch Parkway
College Park, MD 20740-3835



Re: GRAS Notification for Ingredient Incorporated's Short-Chained Fructooligosaccharides

Dear Dr. Carlson:

We respectfully submit the attached GRAS Notification on behalf of our client, Ingredient Incorporated, for Short-Chained Fructooligosaccharides ("scFOS"). scFOS is intended for use as a bulking agent and a general-purpose food ingredient in food categories that have previously been considered in past GRAS Notifications for scFOS, with one higher use level for the bars category, one expanded use category and use level for dairy beverages, and two new use categories in meal replacement shakes and dairy analog beverages. More detailed information regarding product identification, intended use levels, the manufacturing process, and safety of the ingredient is set forth in the attached GRAS Notification.

Ingredient has determined that its scFOS is GRAS for its intended uses based on scientific procedures in accordance with 21 C.F.R. § 170.30(b) and in conformance with the guidance issued by the Food and Drug Administration (FDA) under 21 C.F.R. § 170.36, 81 Fed. Reg. 54960 (Aug. 17, 2016). Therefore, the use of the scFOS as described in this GRAS Notification is exempt from the requirement of premarket approval as set forth in the Federal Food, Drug, and Cosmetic Act.

The analytical data, published studies, and information that are the basis for this GRAS Notification are available for FDA review and copying at reasonable times at Keller and Heckman LLP, 1001 G Street, NW, Suite 500W, Washington, DC 20001, or will be sent to FDA upon request.

Washington, D.C.

Brussels

San Francisco

Shanghai

Paris

KELLER AND HECKMAN LLP

Dr. Susan Carlson

April 1, 2021

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We look forward to the Agency's review of this submission and would be happy to provide Agency officials with any information they may need to complete their assessment. Thank you for your attention to this matter.

Cordially yours,

A rectangular grey box redacting the signature of Evangelia C. Pelonis.

Evangelia C. Pelonis

Enclosure

GRAS Notice for Short-Chain Fructooligosaccharides

Prepared for: Office of Food Additive Safety (FHS-200)
Center for Food Safety and Applied Nutrition
Food and Drug Administration
5100 Campus Dr.
College Park, Maryland 20740

Submitted by: Keller and Heckman LLP
1001 G St., NW
Suite 500W
Washington, DC 20001

On behalf of our client:
Ingredion Incorporated
10 Finderne Ave.
Bridgewater, New Jersey 08807

Date: April 1, 2021

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Part 1. Signed statements and certification

1. Applicability of 21 C.F.R. part 170, subpart E

We submit this generally recognized as safe (GRAS) notice in accordance with 21 C.F.R. part 170, subpart E.

2. Name and address of the notifier

Company: Ingredion Incorporated
Name: Debra Levine
Address: 10 FINDERNE AVENUE, BRIDGEWATER, NEW JERSEY 08807
Phone: (908) 575-6203
Email: Debra.Levine@ingredion.com

All communications on this matter are to be sent to Counsel for Ingredion.

Evangelia C. Pelonis
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1001 G Street, NW
Suite 500W
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Tel: 202-434-4106
Fax: 202-434-4646
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3. Name of the notified substance

The common or usual name of the notified substance will be short-chain fructooligosaccharides (scFOS). It is also commonly called short-chain fructan. This substance is chemically identical to other fructan products on the market, consisting of a linear chain of β (2-1)-linked fructose residues with a glucose termination. It is sold by Ingredion under the trade name NutraFlora®. The systematic name of all fructans is $\{\alpha$ -D-glucopyranoside-(1-2)- β (2-1)-fructofuranosyl- $[(1-2)$ - β (2-1)-fructofuranosyl] $_n$. The brace around the terminal glucopyranoside is placed there to recognize that the presence of this residue is not invariable in fructans, although it is always present in scFOS. While fructans can have degrees of polymerization (DP; the number of fructose or glucose residues) ranging from 2 to more than 60, scFOS consists entirely of molecules with DP between 3 and 5, consisting of 2 to 4 fructose residues and a single terminal glucose residue. These molecules may also be regarded as consisting of a single sucrose molecule with 1-3 fructose units linked by β (2-1) linkages.

4. Applicable conditions of use of the notified substance

Ingredion intends to market scFOS as a bulking agent and a general-purpose food ingredient in food categories that have previously been considered in past GRAS Notices with one new use level for the bars category, one expanded use category and use level for dairy beverages, and two new food categories: meal replacement shakes and dairy analog beverages.

5. Basis for the GRAS determination

Keller and Heckman LLP, on behalf of Ingredion, hereby notifies the Agency of its determination that Ingredion’s scFOS is GRAS for its intended use, consistent with Section 201(s) of the Federal Food, Drug, and Cosmetic Act (FD&C Act). This GRAS conclusion is based on scientific procedures in accordance with 21 C.F.R. §170.30(a) and (b) and conforms to the guidance issued by the Food and Drug Administration (FDA) under 21 C.F.R. §170.36, 81 Fed. Reg. 54,960 (Aug. 17, 2016). The statutory basis for our conclusion of GRAS status is through scientific procedures in accordance with proposed 21 C.F.R. § 170.36. The GRAS status of scFOS is based on data generally available in the public domain.

6. Exclusion from premarket approval

The notified substance is not subject to the premarket approval requirements of the FD&C Act based on our conclusion that the notified substance is GRAS under the conditions of its intended use.

7. Availability of data and information

The information for this GRAS conclusion including analytical data, published studies, and information that are the basis for this GRAS determination are available to FDA upon request as required by 21 C.F.R. § 170.225(c)(7)(ii)(A) or (B) by contacting Keller and Heckman LLP at the below address.

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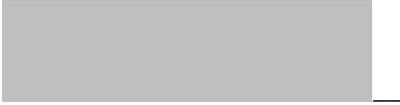
8. Applicability of FOIA Exemptions

Ingredion is not claiming any information in Parts 2 through 7 of this document as trade secret, confidential or financial information that is privileged or confidential. Thus, all information and data in this submission are not exempt from the Freedom of Information Act (FOIA), 5 U.S.C. Section 552.

9. Certification

We certify on behalf of our client, Ingredion, that this GRAS conclusion is based on representative data from Ingredion required to support the safety and GRAS status of scFOS. To the best of our knowledge, it is a complete, representative, and balanced submission that includes unfavorable information, as well as favorable information, known to us and pertinent to the evaluation of the safety and GRAS status of the use of the substance.

10. Signature and name and title of the person signing this GRAS notice:



Date: April 1, 2021

Evangelia C. Pelonis
Partner
Keller and Heckman LLP

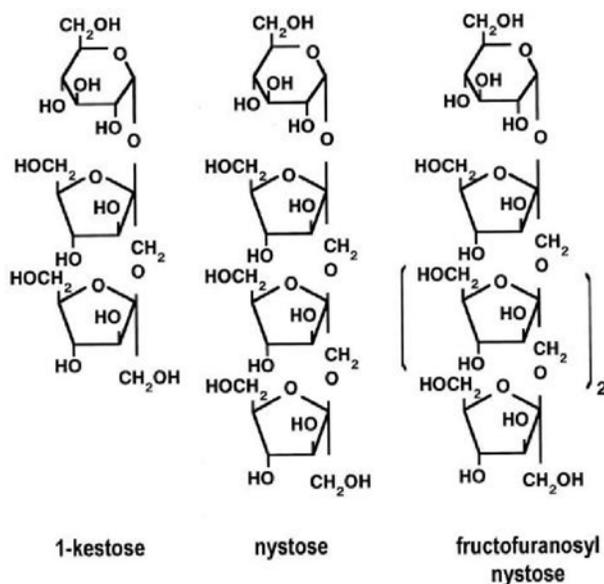
Part 2. Identity, method of manufacture, specifications, and physical or technical effect

1. Identity

The subject of the current GRAS Notice is short-chain fructooligosaccharides (scFOS) (Chemical Abstracts Registry Number (CASRN) 308066-66-2), marketed under the tradename NutraFlora®. Short-chain FOS is one member of a group of f3(2-1) oligo- and polysaccharides designated fructans. The common feature of the fructan oligosaccharides is that they comprise essentially linear chains of fructose units linked by f3(2-1) fructosyl-fructose linkages, sometimes with a single terminal glucose molecule; this terminal glucose residue is invariably present in scFOS. The systematic name of all fructans, including scFOS, is { α -D-glucopyranoside-(1-2)-}f3-D-fructofuranosyl-[(1-2)-f3-D-fructofuranosyl]_n. The brace around the terminal glucopyranoside is placed there to recognize that the presence of this residue is not invariable in fructans other than scFOS. Since the f3(2-1) linkage joining the glucose residue with the neighboring fructose residue is the same as is found in the disaccharide sucrose, the configuration may also be viewed as a sucrose molecule linked to a chain of fructose units by f3(2-1) fructosyl-fructose linkages.

NutraFlora® scFOS consists of 3 different molecules, each containing a terminal glucose residue and 2, 3, or 4 fructose residues, designated GF₂, GF₃, and GF₄, with the respective names 1-kestose, nystose, and fructofuranosylnystose. The molecular formula of NutraFlora® scFOS is the same as that of all fructans: C₆H₁₁O₅(C₆H₁₀O₅)_nOH. The formulas of its three components are: 1-kestose—C₁₈H₃₂O₁₆, nystose—C₂₄H₄₂O₂₁, and fructofuranosylnystose—C₃₀H₅₂O₂₆. The molecular weight (MW) of scFOS is 700, representing the average of the molecular weights of its 3 components (505, 666, and 828, respectively), which are present at approximately 37%, 53%, and 10%, respectively. The structural formulas of the three components are shown in Figure 1.

Figure 1. Structural Formulas of 1-Kestose, Nystose, and Fructofuranosylnystose



NutraFlora® scFOS is available in both liquid (syrup) and powder forms. A brief summary of the physical and chemical properties of both forms of the product is provided in Table 1.

Table 1. Physical and Chemical Properties of NutraFlora® scFOS

Physical/Chemical Property	Value	
	Syrup	Powder
Appearance	Slightly viscous fluid	Colorless powder
Appearance in solution	Colorless	Colorless
Taste	Slightly sweet	Slightly sweet
Odor	None	None
pH (10% solution)	5.0 – 7.5	5.0 – 7.0
Solubility in water	High	High
Solubility in ethanol	Insoluble	Insoluble
Viscosity (cP, 70% solution at 30°C)	1007 - 1759	1000

In May 2000, GTC Nutrition Company (subsequently acquired by Ingredion) submitted GRAS Notice No. 44 and received a “no objection letter” (NOL) from FDA in November 22, 2000 for scFOS’s use in various food categories at various use levels.¹ Additional correspondence regarding intended uses was submitted for GRAS Notice No. 44 and FDA responded with a NOL on June 1, 2007. Ingredion also submitted GRAS Notice No. 537 and received an NOL from FDA on February 6, 2015 for scFOS’s use in infant formula.²

2. Method of Manufacture

To produce scFOS, purchased dry or liquid sucrose is diluted with water, and the pH is adjusted. The β-fructofuranosidase enzyme (produced by *Aspergillus fijiensis*) is added at a controlled temperature. *A. fijiensis* is a synonym for *A. japonicus*, which is a member of the *niger* group. The enzyme has an optimum temperature of 60°C and pH of 5.5; it is stable within

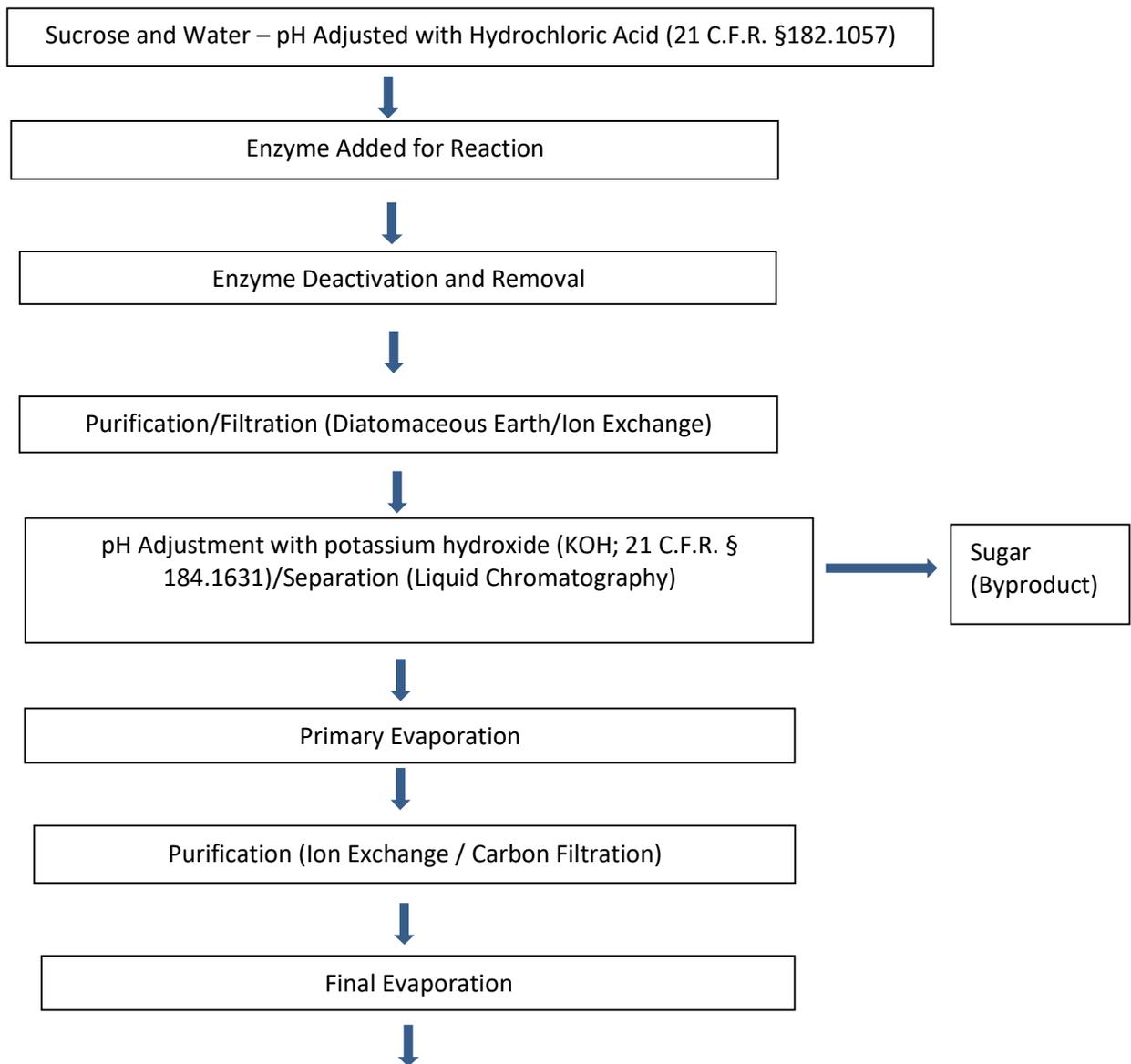
¹ See FDA, GRAS Notice (GRN) 44, available at https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices&id=44&sort=GRN_No&order=DESC&startrow=101&type=basic&search=44.

² See FDA, GRAS Notice (GRN) 537, available at https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices&id=537&sort=GRN_No&order=DESC&startrow=1&type=basic&search=537.

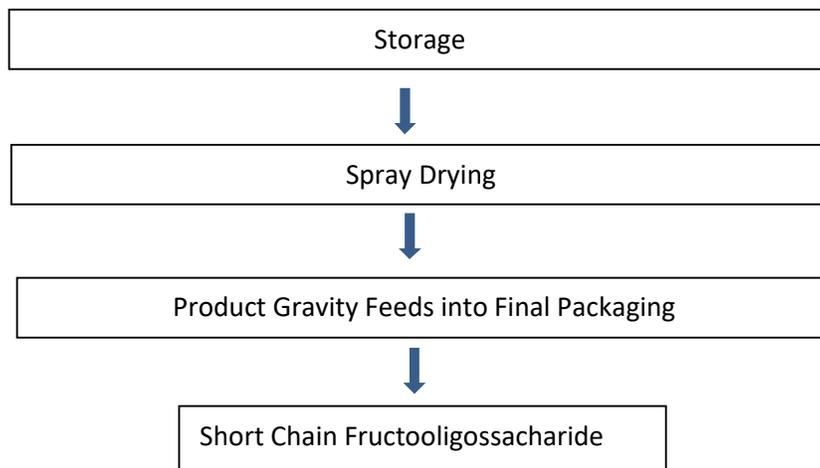
a pH range of 4 to 8.³ The enzyme acts as an invertase on sucrose molecules and a fructosyltransferase between both sucrose molecules and fructofuranosylsucrose molecules. The invertase activity cleaves sucrose into glucose and fructose units, while the fructofuranosidase activity transfers the fructose unit from sucrose to a growing fructose chain to yield 1-kestose (GF2), nystose (GF3), and fructofuranosylnystose (GF4) molecules. One glucose residue is released as each fructose unit is added to the chain.

The manufacturing process is shown in Figure 2 below.

Figure 2: Current Manufacturing Process



³ Quang, D.N., *et al.*, 2005. Purification and some properties of β -fructofuranosidase from *A. niger* IM1303386. *Process Biochem* 40:2461-2466.



As noted above, Ingredion obtained a no questions letter for GRAS Notice 44 and 537 for scFOS produced in a slightly different manner for use in related products.

1. scFOS was produced by dissolving granular sucrose in water, held at a constant temperature, followed by addition of the β -fructofuranosidase enzyme (produced by *A. fijiensis*). In the current process, scFOS may be produced with dry or liquid sucrose diluted with water, followed by pH adjustment with hydrochloric acid.⁴
2. There were steps described as “decolorization,” which were achieved with active carbon. In the current process, there are two purification steps. The first purification step is achieved with diatomaceous earth and ion exchange, and the second purification step is achieved with carbon filtration.
3. After the first active carbon and decolorization steps, the material was filtered, desalted, concentrated, treated with active carbon, and underwent chromatography before the second decolorization step. In the current process, only pH adjustment with potassium hydroxide (KOH)⁵ and separation of scFOS from the sugar byproduct occurs between the first and second purification steps.
4. In the original process, potassium hydroxide (KOH) was added during the reaction phase to maintain the pH within the desired range. In the current process, KOH is added (a) after the reaction phase, (b) after the second ion

⁴ HCL is GRAS listed for use in food as buffer and neutralizing agent under 21 C.F.R. § 182.1057.

⁵ KOH is affirmed as GRAS for processing aid use under 21 C.F.R. § 184.1631.

exchange before carbon filtration, and (c) in the sugar separation step for pH control.

5. After the second decolorization step in the original process, there was filtration (after which scFOS syrup was derived), followed by concentration and drying to produce scFOS powder. In the current process, the second purification step is followed by evaporation, storage (after which scFOS syrup may be derived), and spray drying to produce scFOS powder.

While the current manufacturing process differs slightly from the process described in past GRAS Notices, the finished product identity remains essentially identical.

3. Product Specifications and Batch Analyses

(a) Product Specifications

Ingredion has established various physical, compositional, and microbiological specifications for scFOS. The specifications, which have been selected to ensure a consistent food-grade product, are summarized in Table 2 together with the methods. All analytical methods have been validated for their intended use.

Table 2. Specifications for Food Grade scFOS

Parameter	Unit	Specification	Method ¹
Appearance		White Powder	Internal Method (Visual)
Flavor		Slightly Sweet	Internal Method (Sensory)
Odor		None	
Total scFOS	%	NLT ¹ 95.0	Internal Method (High-Performance Liquid Chromatography)
1-Kestose (GF2)	%	NLT 30.0	
Nystose (GF3)	%	NLT 45.0	
Fructofuranosylnystose (GF4)	%	NLT 5.0	
Sugars	%	NMT ² 5.0	
Protein	%	NMT 0.01	Kjedahl
Ash	%	NMT 0.05	USP
Moisture	%	NMT 5.00	Internal Method (Refractive Index)
pH		5.0-7.0	Internal Method
Lead	mg/kg	NMT 1.0	ICP MS Heavy Metals AOAC 2015.01 Mod<2232
Arsenic	mg/kg	NMT 1.0	
Standard plate count	cfu ³ /g	NMT 300	Internal Methods (based on AOAC methods)
Yeast	cfu/g	NMT 20	
Mold	cfu/g	NMT 20	
Coliforms	cfu/g	NMT 10	
<i>Escherichia coli</i>	cfu/10 g	Negative	Current USP/NF,62
Anaerobic Mesospores	cfu/g	NMT 10	Compendium of Methods for the Microbiological Examination of Foods (CMMEF), 5th ed.
Aerobic Thermophilic Spores	cfu/10 g	NMT 10	

Anaerobic thermophilic spores	Tubes Positive	NMT 10	CMMEF, 4th ed.
Aerobic mesophilic spores	cfu/g	NMT 10	CMMEF, 5th ed.
<i>Salmonella</i> spp. PCR	cfu/100 g	Negative	AOAC-RI100201
Coagulase-positive <i>Staphylococci</i>	cfu/10 g	Negative	Current USP/NF,62
<i>Enterobacteriaceae</i> MPN ⁴	cfu/30 g	Negative	ISO21528-1:2017

¹ – Internal methods have been validated: NLT: Not less than; NMT: Not more than; cfu: Colony forming unit; MPN: Most probable number.

Table 3 below provides the results of three non-consecutive lots of product demonstrating that the specifications are consistently met.

Table 3. Batch Analyses for Food Grade scFOS

Parameter	Unit	Specification ¹	7280203300	7280338308	7280288307
Appearance		White Powder	Passes	Passes	Passes
Flavor		Slightly Sweet	Passes	Passes	Passes
Odor		None	Passes	Passes	Passes
Total scFOS	%	NLT 95.0	96.1	95.8	95.8
1-Kestose (GF2)	%	NLT 30.0	37.2	36.5	37.0
Nystose (GF3)	%	NLT 45.0	47.9	48.5	47.8
Fructofuranosylnystose (GF4)	%	NLT 5.0	11.0	10.8	11.0
Sugars	%	NMT 5.0	3.9	4.2	4.22
Protein	%	NMT 0.01	0.00	0.00	0.00
Ash	%	NMT 0.05	0.00	0.00	0.00
Moisture	%	NMT 5.00	3.9	3.4	3.21
pH		5.0-7.0	6.1	6.2	6.0
Lead	mg/kg	NMT 1.0	<0.01	<0.01	<1.0
Arsenic	mg/kg	NMT 1.0	<0.01	<0.01	<0.01
Standard plate count	cfu/g	NMT 300	<10	<10	<10
Yeast	cfu/g	NMT 20	<10	<10	<10
Mold	cfu/g	NMT 20	<10	<10	<10
Coliforms	cfu/g	NMT 10	<10	<10	<10
<i>Escherichia coli</i>	cfu/10 g	Negative	Negative/10	Negative/10g	Negative/10g
Anaerobic Mesospores	cfu/g	NMT 10	<3	<3	<3
Aerobic thermophilic spores	cfu/10 g	NMT 10	<5	<5	<5

Anaerobic thermophilic spores	Tubes positive	NMT 10	0/6 tubes positive	0/6 tubes positive	0/6 tubes positive
Aerobic mesophilic spores	cfu/g	NMT 10	<1	<1	<1
<i>Salmonella</i> spp. PCR	cfu/100 g	Negative	Negative	Negative	Negative
Coagulase-positive <i>Staphylococci</i>	cfu/10 g	Negative	Negative	Negative	Negative
<i>Enterobacteriaceae</i> MPN	cfu/30 g	Negative	<0.3	<0.3	<0.3

¹ NLT: Not less than; NMT: Not more than; cfu: Colony forming unit; MPN: Most probable number.

Part 3. Dietary exposure

1. Estimate of Dietary Exposure

Ingredion intends to market scFOS as a bulking agent and a general-purpose food ingredient, as detailed below. We note that scFOS is described as a source of dietary fiber in FDA's Review of the Scientific Evidence on the Physiological Effects of Certain Non-Digestible Carbohydrates (June 2018).^{6,7} The uses addressed in this submission do not include infant formula or use in USDA-regulated meat and poultry products. Maximum daily intakes of scFOS have been calculated to be no more than approximately 20 g/day for a 90th percentile consumer.

2. Cumulative Estimated Dietary Exposure

Keller and Heckman had a consumption estimate done on behalf of Ingredion, which is attached as Appendix 1.⁸ The consumption estimate was generated based on 2015-2016 NHANES data, to address the applications in Table 4 below. While many of these applications mirror those in previous GRAS notices, there are the following differences:

- 1) a higher use level for the bars category,
- 2) one expanded category and higher use level for dairy beverages (including cultured dairy, rather than only unflavored and flavored milk), and
- 3) two new food categories: meal replacement shakes and dairy analog beverages.

The bars category was included in GRN 44 with a use level of up to 1.4-2.5% per 40 gram or 70 gram RACC for a total use level of 0.56-1.75 grams scFOS per serving. Here, we have included a use level of 15% scFOS per 40 gram bar for a total use level of 6 grams scFOS per serving. GRN 44 previously included "milk, flavored and unflavored" with a use level of 0.4% per 240 mL RACC for a total use level of approximately 1 gram per serving. Here, we have expanded the category to include 1.3% in all types of dairy beverages including cultured dairy beverages with a 240 mL serving size and 1.5-3.2% in drinkable yogurts with a standard serving of 93-207 grams for a total level of use of 3 grams per serving. The two new categories added are: (1) meal replacement shakes (milk-based and non-milk based) with a 2.5% use level, which based on a 240 mL RACC yields 6 grams per serving; (2) dairy product analogs with a 1.3% use level, which based on a 240 mL RACC yields 3 grams per serving. The rest of the

⁶ In FDA's Review of the Scientific Evidence on the Physiological Effects of Certain Non-Digestible Carbohydrates (June 2018), FDA included short chain FOS as an "inulin-type fructan" found to meet the definition of "dietary fiber." See page 18 at <https://www.fda.gov/media/113659/download>.

⁷ Mobley, A.R. *et al.* (2014). Identifying Practical Solutions to Meet America's Fiber Needs: Proceedings from the Food & Fiber Summit. *Nutrients* 6: 2540-2551.

⁸ Estimated Daily Intake of Short Chain Fructooligosaccharide by the U.S. Population from Permitted and Proposed Food Uses (2015-2016 NHANES), August 14, 2020, Appendix 1.

product categories and use levels are the same as those covered in GRN 44 and the additional correspondence to GRN 44.

The estimates should be seen as conservative from the standpoint that—where ranges were provided for a given serving size and/or level of use, the largest of the potential combinations was used. In fact, it is not likely for various foods that the upper level use level would be used in the larger serving-size product. For example, there is a category in Table 4 below for “Sauces, Gravies, and Condiments” for which the serving size is provided as “30 to 125 g.” The relevant serving size for condiments is 30 grams, whereas 125 grams is the largest serving size for any sauces under Section 101.12 of the food additive regulations for “Major main entree sauces, *e.g.*, spaghetti sauce.” The use levels of interest in the table are reported as “0.8 to 3.3” percent. Ingredient’s research indicates that it is the products with the lower serving size (*i.e.*, the condiments) that would be most likely to employ the highest scFOS use level of 3.3% (*e.g.*, $30\text{ g} \times 3.3\% = 0.99\text{ g scFOS}$), and the larger serving size items would employ the lowest scFOS use level (*e.g.*, $125\text{ g} \times 0.8\% = 1\text{ g}$). However, the consumption estimate takes the approach of multiplying the lower end of the serving size range with the lower end of the use level range (*e.g.*, $30\text{ g} \times 0.8\% = 0.24\text{ g scFOS}$) and the higher end of the use level range by the high end of the serving size range (*e.g.*, $125\text{ g} \times 3.3\% = 4.13\text{ g scFOS}$) to calculate the scFOS levels in the right-hand column (*i.e.*, in this case, 0.24 to 4.13 g). Accordingly, the estimates in the table are expected to generally overestimate actual uses, as it is not expected that the products with the larger serving sizes will employ scFOS at the highest use level described for that food category.

Table 4. Typical Use Levels of scFOS

Food Category^{a,b}	Standard Serving Size	Level of Use/Serving (percent)	Level of Use/Serving (mL or g /serving)^c
Acidophilus Milk	240 mL	0.4	0.96
Analogs and Substitutes for Meat, Poultry or Fish	15 to 85 g	1.2 to 6.7	0.18 to 5.70 g
Bars ^d	40 g	15.0	6 g
Breakfast Cereals	40 to 55 g	1.8 to 2.5	0.72 to 1.38 g
Beverages and Juices	240 mL	0.4	0.96 mL
Cakes	55 g	1.8	0.99 g
Cheese	30 to 110 g	0.9 to 3.3	0.27 to 3.63 g
Cream	15 to 30 g	3.3 to 6.7	0.50 to 2.01 g
Confectionery	40 g	2.5	1.00 g
Cookies	30 g	3.3	0.99 g
Crackers	15 to 30 g	3.3 to 6.7	0.50 to 2.01 g

Food Category^{a,b}	Standard Serving Size	Level of Use/Serving (percent)	Level of Use/Serving (mL or g /serving)^c
Dairy Beverages ^e	240 mL (all types) 93 to 207 ^f (drinkable yogurts only)	1.3 1.5 to 3.2	3 g
Dairy Product Analogs	240 mL	1.3	3 g
Dessert Toppings and Fillings	30 g	3.3	0.99 g
Hard Candy	15 g	6.7	1.01 g
Ice Cream	68 g	1.5	1.02 g
Infant Foods (0 to 12 Months) ^g	7 to 60 g	0.4 to 3.6	0.03 to 2.16 g
Jams and Jellies	20 g	5.0	1.00 g
Meal Replacement Shakes (milk-based and non-milk based) ^h	240 mL	2.5	6 g
Milk, Flavored and Unflavored ⁱ	240 mL	0.4	0.96 mL
Milk, Evaporated and Condensed	30 mL	2.6 to 3.1	0.78 to 0.93 mL
Muffins and Quick Bread	50 to 55 g	1.8 to 2.0	0.90 to 1.10 g
Sauces, Gravies, and Condiments	30 to 125 g	0.8 to 3.3	0.24 to 4.13 g
Snacks	30 g	3.3	0.99 g
Sorbet and Sherbet	85 g	1.2	1.02 g
Soup	245 g	0.4	0.98 g
Toddler Foods (12 to 24 Months)	15 to 125 g	0.8 to 6.7	0.12 to 8.38 g
Yogurt	225 mL	0.4	0.90 mL

RTD = ready-to-drink; RTE = ready-to-eat; scFOS = short-chain fructooligosaccharide

^a The food use categories, standard serving sizes and proposed use levels (%) are adapted from GRAS Notice No. 44 (GRN 44) additional correspondence (U.S. FDA, 2007).

^b Use levels may be different from the intended use in the original notice.

^c Calculated based on standard serving size and proposed % used level.

^d Bars were included at up to 2.5% as a typical use level in GRN 44; however, bars are included at a higher proposed use level of 15.0% in the current assessment.

^e The category of dairy beverages includes milk (flavored and unflavored), cultured dairy beverages like Kefir, and drinkable yogurts).

^f RACC has not been established for yogurt drinks; however, an approximate serving size was established based on products currently on the U.S. market.

^g This category excludes infant formula.

^h The category of meal replacement shakes (milk-based and non-milk based) were included under beverages and juices in GRN 44; however, they are currently included as a separate category at a proposed use level of up to 2.5%.

ⁱ Milk (flavored and unflavored) were included at up to 0.4% as a typical use level in GRN 44; however, they are currently included under the category of dairy beverages at a proposed use level of up to 1.3%.

Table 5: Summary of the Estimated Daily Intake of scFOS from Typical and Proposed Food Uses in the U.S. by Population Group (2015-2016 NHANES Data)

Population Group	Age Group (Years)	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
Infants	0 to <1	3	7	64.2	204	4	9
Toddlers	1 to 2	10	17	99.9	369	10	17
Children	3 to 11	10	15	100	1,176	10	15
Female Teenagers	12 to 19	8	12	100	473	8	12
Male Teenagers	12 to 19	10	17	99.4	491	10	17
Female Adults	20 and up	9	15	100	2,205	9	15
Male Adults	20 and up	11	20	99.9	1,994	11	20
Total Population	All ages (ages 2 and up)	10	17	99.5	6,912	10	17
n = sample size							

Table 6: Summary of the Estimated Daily Per Kilogram Body Weight Intake of scFOS from Typical and Proposed Food Uses in the U.S. by Population Group (2015-2016 NHANES Data)

Population Group	Age Group (Years)	Per Capita Intake (g/kg bw/day)		Consumer-Only Intake (g/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
Infants	0 to <1	0.30	0.86	64.2	204	0.47	1.03
Toddlers	1 to 2	0.80	1.32	99.9	364	0.80	1.32
Children	3 to 11	0.38	0.65	100	1,171	0.38	0.65
Female Teenagers	12 to 19	0.14	0.26	100	465	0.14	0.26
Male Teenagers	12 to 19	0.15	0.26	99.4	490	0.15	0.26
Female Adults	20 and up	0.12	0.21	100	2,191	0.12	0.21
Male Adults	20 and up	0.13	0.24	99.9	1,968	0.13	0.24
Total Population	All ages (ages 2 and up)	0.17	0.35	99.5	6,853	0.18	0.35

n = sample size

Thus, based on the consumption estimate report in Appendix 1, the estimated daily intake (EDI) for scFOS for the total populations (ages 2 and up) is 10 grams per person per day (10 g/p/day) at the mean consumption level and 18 grams per person per day (18 g/p/day) at the 90th percentile consumption level. The highest rate of exposure was seen in the male adult population, which was 11 g/p/day for the mean and 20 g/p/day for the 90th percentile male adult population. In comparison, the additional correspondence to GRN 44 dated June 1, 2007 considered 20 grams per person per day at the 90th percentile in the general population. Thus, there is no increased exposure to scFOS as a result of these higher use levels and new product categories.

As discussed in GRN 44 and subsequently cited by other notices submitted for scFOS (GRNs 537, 605, 623, 717, and 797), multiple clinical studies in children and adult human subjects of scFOS have confirmed the non-toxic nature of this ingredient.⁹ The published

⁹ See FDA, GRN 44, available at, https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices&id=44&sort=GRN_No&order=DESC&startrow=101&type=basic&search=44; see GRN 605, available at, https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices&id=605&sort=GRN_No&order=DESC&startrow=1&type=basic&search=605; see GRN 623 available at, https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices&id=623&sort=GRN_No&order=DESC&startrow=1&type=basic&search=623; see GRN 717 available at,

studies describing the safety of scFOS described the acceptable intake level of intake described in the cited GRNs for infants less than one year old was 4.2 g/day, while for the general population older than one year of age the intake with no adverse effect was determined to be 20 g/day scFOS. FDA had no questions regarding these safe reference levels regarding the GRAS status of the intended uses of scFOS. The available information in the published literature reveals only mild gastrointestinal side-effects of scFOS consumption that included flatulence, bloating, abdominal discomfort, and transient diarrhea. These findings are well-described in the scientific literature, and updated searches of the recent scientific literature as of March 23, 2021 did not identify any new studies relevant to the safety of scFOS in children or adults or studies that would question or modify conclusions reached in previous GRAS notices.

https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices&id=717&sort=GRN_No&order=DESC&startrow=1&type=basic&search=717; see GRN 797 available at, https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices&id=797&sort=GRN_No&order=DESC&startrow=1&type=basic&search=797.

Part 4. Self-limiting Levels of Use

The use of scFOS is not self-limiting.

Part 5. Experience based on common use in food before 1958

The basis of this GRAS assessment is not common use in food before 1958.

Part 6. Safety Narrative: Comprehensive Discussion of the Basis of GRAS Status of ScFOS

Since GRAS Notice 537, additional GRAS Notices (*i.e.*, GRAS Notice 605 (filed by Tata Chemicals Limited for FOS), GRAS Notice 623 (filed by New Francisco Biotechnology Corporation (NFBC) for FOS), and GRAS Notice 717 (filed by Galam, Ltd. for scFOS)) have been filed regarding FOS and scFOS when used in a wide array of foods other than infant formula (*e.g.*, acidophilus milk, nutritional bars, baby food, nutritional beverages, biscuits, cakes, confectionery, cookies, crackers, flavored and unflavored milks, hard candy, ice cream and frozen yogurt, jams and jellies, muffins, ready-to-eat cereals, sorbet, soup and yogurt), and GRAS Notice 797 addressed the use of NFBC's FOS in infant formula at the same use levels as GRAS Notice 537.¹⁰ In its most recent a "no questions letter" regarding FOS, issued to NFBC on November 15, 2018 for GRAS Notice 797, FDA stated with respect to the safety of FOS:¹¹

NFBC discusses the safety of FOS and incorporates into the notice published toxicity studies cited in GRNs 000044, 000537, 000605, 000623, and 000717.¹ These published toxicity studies on FOS include acute, short-term (6-8 weeks), subchronic, chronic, carcinogenicity, developmental, and reproductive, as well as *in vitro* genotoxicity assays. NFBC states that these studies did not reveal any toxicologically relevant treatment-related adverse effects, including a 104-week study where male and female rats were fed FOS through the diet at up to 2170 mg/kg bw/d and 2664 mg/kg bw/d, respectively. NFBC states that an updated literature search was conducted through March 2018 and did not reveal any new data or information on the effects of FOS in adults or children.

^{FN1} FOS was the subject of GRNs 000044, 000537, 000605, 000623, and 0007 17 . We evaluated these notices and responded in letters dated November 22, 2000, February 6, 2015, March 17, 2016, August 1, 2016, and February 13, 2018, respectively, stating that we had no questions at that time regarding the notifiers' GRAS conclusions.

Galam Ltd. provided a comprehensive summary of available safety data concerning scFOS when used in foods for the general population in its GRAS Notice (No. 717), submitted

¹⁰ See FDA, Inventory of GRAS Notices, at <https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices> (searching for "oligosaccharides," and reviewing "substance name" for both "fructooligosaccharides" and "fructo-oligosaccharides").

¹¹ FDA, Agency Response Letter to GRAS Notice 797, available at <https://www.fda.gov/media/119454/download>.

to FDA on June 18, 2017.¹² We have summarized that safety discussion below, followed by our updated literature search results.

The available body of toxicology information indicates that scFOS has low to no toxicological effects. scFOS has been evaluated in a battery of *in vitro* genotoxicity studies, animal feeding studies, and studies in infants and adult humans. These studies are briefly summarized here and indicate no concern for oral toxicity for scFOS at any dose tested.

1. Genotoxicity

Clevenger *et al.* (1988) describes a series of *in vitro* genotoxicity studies on scFOS. In these studies, the scFOS was negative for genotoxicity in bacterial (Ames), mouse lymphoma, and unscheduled DNA synthesis assays, both with and without metabolic activation.¹³

2. Animal Studies

Carabin and Flamm (1999) summarizes results of acute and repeat dose toxicity studies showing that scFOS. In the acute studies, scFOS has a low potential for acute oral toxicity when given in single doses up to 9,000 mg/kg bw in mice and rats. In two subacute studies reported by Carabin and Flamm, feeding two different strains of Wistar rats up to 4,500 or 5,000 mg kg bw/day for 6 weeks did not produce any adverse treatment related effects. In a reproductive and developmental study, rats were fed a diet containing 20% scFOS from day 1 to day 21 of gestation. The authors report reduction in body weight of the pregnant rats and growth delays for the male pups in the test group during nursing. No other effects on the pregnancy and development of fetuses was reported.¹⁴

Boyle *et al.* fed Sprague-Dawley rats 0, 0.55, 1.65, 4.96, or 9.91 % oligofructose in feed for 13 weeks.¹⁵ The authors reported no treatment-related adverse at any dose tested, and determined the NOAEL to be the highest dose tested which equates to 4,680 mg/kg bw/day.

¹² GRAS Notice 797, submitted by New Francisco (Yunfu City) Biotechnology Corporation was closed on November 15, 2018 but addressed safety in infant populations because the intended use was limited to infant formula.

¹³ Clevenger, M.A., Turnbull, D., Inoue, H., Enomoto, M., Allen, J.A., Henderson, L.M., Jones, E. 1988. Toxicological evaluation of neosugar: Genotoxicity, carcinogenicity, and chronic toxicity. *J Am Coll Toxicol* 7:643-662

¹⁴ Carabin, I.G., Flamm, W.G. 1999. Evaluation of safety of inulin and oligofructose as dietary fiber. *Reg Toxicol Pharmacol* 30:268-282

¹⁵ Boyle, F.G., Wrenn, J.M., Marsh, B.B., Anderson, W.I., Angelosanto, F.A., McCartney, A.L., Lien, E.L. 2008. Safety evaluation of oligofructose: 13-week rat study and *in vitro* mutagenicity. *Food Chem Toxicol* 46:3132-3139

Studies in neonatal mice at 5% in the diet and 2-day old piglets at up to 10 g/L in the colostrum produced no adverse effects.¹⁶

In a published 104-week combined chronic toxicity and carcinogenicity study Fischer 344 rats were fed scFOS at up to 50,000 ppm in their feed. The study authors reported some statistically significant differences but that none were toxicologically relevant or test-article-related. The NOAEL was determined as 50,000 ppm, the highest concentration tested, equivalent to 2,170 mg/kg bw/day for males and 2,664 mg/kg bw/day for females.¹⁷

3. Human Studies

In two randomized, double-blind, placebo-controlled studies healthy infants aged 0-7 days received formula supplemented with 400 mg/100 ml scFOS to the age of 4 months, or 500 mg/100 mL scFOS from 4 to 10 months of age. Neither formula consumption nor growth differed between groups fed scFOS or placebo. No treatment related adverse events were reported in either study.¹⁸ Additional studies in infants using FOS other than scFOS further supports the safety of scFOS in infants. Three such studies fed infants a range of FOS up to 340 mg in 100 mL formula for up to 13 weeks. No differences in test groups in comparison to

¹⁶ Nakamura, Y., Nosaka, S., Suzuki, M., Nagafuchi, S., Takahashi, T., Yajima, T., Takenouchiohkubo, N., Iwase, T., Moro, I. 2004. Dietary fructooligosaccharides up-regulate immunoglobulin A response and polymeric immunoglobulin receptor expression in intestines of infant mice. *Clin Exp Immunol* 137:52-58; Barnes, J.L., Hartmann, B., Holst, J.J., Tappenden, K.A. 2012. Intestinal adaptation is stimulated by partial enteral nutrition supplemented with the prebiotic short-chain fructooligosaccharide in a neonatal intestinal failure piglet model. *J Parenter Enteral Nutr* 36:524-537; Correa-Matos, N.J., Donovan, S.M., Isaacson, R.E., Gaskins, H.R., White, B.A., Tappenden, K.A. 2003. Fermentable fiber reduces recovery time and improves intestinal function in piglets following Salmonella typhimurium infection. *J. Nutr.* 133:1845-1852

¹⁷ Clevenger, M.A., Turnbull, D., Inoue, H., Enomoto, M., Allen, J.A., Henderson, L.M., Jones, E. 1988. Toxicological evaluation of neosugar: Genotoxicity, carcinogenicity, and chronic toxicity. *J Am Coll Toxicol* 7:643-662

¹⁸ Paineau, D., Respondek, F., Menet, V., Sauvage, R., Bornet, F., Wagner, A. 2014. Effects of short-chain fructooligosaccharides on faecal bifidobacteria and specific immune response in formula-fed infants: a randomized, double-blind, placebo-controlled trial. *J Nutr Sci Vitaminol* 60(3): 167-75; Ripoll, C., Chappuis, E., Respondek, F., Wanger, A., Gottarand, F. 2015. scFOS supplemented follow-on formula in healthy infants: Impact on vaccine specific faecal secretory IGA response, faecal bifidobacteria, growth and digestive tolerance. *Bioactive Carb Dietary Fiber* 5(2): 169-178

control with regard to formula consumption or weight gain and no serious treatment related adverse events were reported.¹⁹

Studies in adults, both healthy and those who have undergone ileostomy, report that scFOS ingestions did not result in any reported adverse events, is well tolerated and that ingested scFOS reach the colon and there are fermented by resident bacteria.²⁰

4. Updated Literature Search

We conducted an updated literature search for new information on FOS in the public literature that captured information published through March 23, 2021 and found no additional studies that evaluated the safety of FOS in humans or animals. We did identify a publication from November 2018 that evaluated the use of FOS to reduce constipation in infants ages six to twenty-four months. Infants were given dietary supplements containing 6, 9, or 12 grams of FOS daily for four weeks with no significant adverse effects.²¹ Two reports of abdominal discomfort and flatulence were reported, as well as two episodes of vomiting after treatment. We further identified several studies which evaluated the effects of scFOS on gut microbiota

¹⁹ Xia, Q., Williams, T., Hustead, D., Price, P., Morrison, M., Yu, Z. 2012. Quantitative analysis of intestinal bacterial populations from term infants fed formula supplemented with fructooligosaccharides. *J Pediatr Gastroenterol Nutr* 55:314-320; Brunser, O., Figueroa, G., Gotteland, M., Haschke-Becher, E., Magliola, C., Rochat, F., Cruchet, S., Palframan, R., Gibson, G., Chauffard, F., Haschke, F. 2006. Effects of probiotic or prebiotic supplemented milk formulas on fecal microbiota composition of infants. *Asia Pac J Clin Nutr* 15:368-376; Bettler, J., Euler, A.R. 2006. An evaluation of the growth of term infants fed formula supplemented with fructooligosaccharide. *Int J Probiot Prebiot* 1: 19-26

²⁰ Bach Knudsen, K.E., and Hessov, I. 1995. Recovery of inulin from Jerusalem artichoke (*Helianthus tuberosus* L.) in the small intestine of man. *Br J Nutr* 74: 101-113; Ellegard, L., Andersson, H., Bosaeus, I. 1997. Inulin and oligofructose do not influence the absorption of cholesterol or the excretion of cholesterol, Ca, Mg, Zn, Fe, or bile acids but increases energy excretion in ileostomy subjects. *Eur J Clin Nutr* 51: 1-5; Rumessen, J.J., Gudmand-Hoyer, E. 1998. Fructans of chicory: Intestinal transport and fermentation of different chain lengths and relation to fructose and sorbitol malabsorption. *Am J Clin Nutr* 68:357-364; van Dokkum, W., Wezendonk, B., Srikumar, T.S., van den Heuvel, E.G.H.M. 1999. Effect of nondigestible oligosaccharides on large-bowel functions, blood lipid concentrations and glucose absorption in young healthy male subjects. *Eur J Clin Nutr* 53:1-7

²¹ Souza, D.D.S. *et al.* (2018). Randomized, Double-Blind, Placebo-Controlled Parallel Clinical Trial Assessing the Effect of Fructooligosaccharides in Infants with Constipation. *Nutrients* 10(11), at <https://www.ncbi.nlm.nih.gov/pubmed/30388751>.

in pigs²², dogs²³, and cats²⁴. We reviewed these studies and concluded that, while they do not provide further support for scFOS's safety, neither do they detract from or raise questions regarding the GRAS status of scFOS for its intended use.

5. Allergenicity

As noted above, Ingredion's scFOS contains not more than 0.01% protein. There is no indication that scFOS poses a risk of allergenicity. There are no reports of allergic reaction in the public literature. Because scFOS products are oligosaccharides and contain essentially no protein, they present an insignificant risk of potential allergenic effects.

6. Summary

The safety of scFOS has been well-established. Consistent with GRAS Notices 44, 537, 605, 623, 717, and 797, the existing acute, short-term, subchronic, chronic, carcinogenicity, developmental, reproductive, and *in vitro* genotoxicity test data showing no adverse effects from the use of scFOS in food support the safety of scFOS for the intended uses that are considered in this GRAS Notice.

²² Yan H. *et al.* (2020) Short-chain fructo-oligosaccharides alleviates oxidized oil-induced intestinal dysfunction in piglets associated with the modulation of gut microbiota. *J Funct Foods*. 64: 103661; Le Bourgot C. *et al.* (2019) Perinatal short-chain fructooligosaccharides program intestinal microbiota and improve enteroinsular axis function and inflammatory status in high-fat diet-fed adult pigs. *FASEB J*. 33: 301-13.

²³ Apper E., Privet L., Taminiau B., Le Bourgot C., and Svilar L. (2020) Relationships between gut microbiota, metabolome, body weight, and glucose homeostasis of obese dogs fed with diets differing in prebiotic and protein content. *Microorganisms*. 8:513.

²⁴ Hall J.A., Jewell D. E., and Ephraim E. (2020) Changes in the fecal metabolome are associated with feeding fiber not health status in cats with chronic kidney disease. *Metabolites*. 10(7): 281; Hall J.A., Jewell D.E., and Ephraim E. (2020) Chronic kidney disease in cats alters response of the plasma metabolome and fecal microbiome to dietary fiber. *PLOS One*. 15(7): e0235480.

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FDA, GRAS Notice (GRN 605), available at, https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=GRASNotices&id=605&sort=GRN_No&order=DESC&startrow=1&type=basic&search=605.

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APPENDIX I

ESTIMATED DAILY INTAKE OF SHORT-CHAIN FRUCTOOLIGOSACCHARIDE BY THE U.S. POPULATION FROM PERMITTED AND PROPOSED FOOD USES (2015-2016 NHANES)

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DATE:
14 August 2020

Estimated Daily Intake of Short-Chain Fructooligosaccharide by the U.S. Population from Permitted and Proposed Food Uses (2015-2016 NHANES)

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Estimated Daily Intake of Short-Chain Fructooligosaccharide by the U.S. Population from Permitted and Proposed Food Uses (2015-2016 NHANES)

1.0 INTRODUCTION

Short-chain Fructooligosaccharide (scFOS) is proposed for use in the United States (U.S.) as an ingredient in a variety of conventional foods and beverages. scFOS is currently permitted for use in the U.S. as a bulking agent in a variety of foods and beverages according to GRAS Notice (GRN) 44 (GTC Nutrition Company, 2000). Keller and Heckman LLP intends to expand the list of food uses to include dairy product analogs as well as increase the use level for certain food uses (bars, dairy beverages, meal replacement shakes) (see further details in Table 3-1). In this report, 2 assessments were conducted:

- An intake assessment based on permitted food uses of scFOS as outlined in GRN 44; and
- An intake assessment to evaluate both permitted and proposed food uses of scFOS.

Estimates for the intake of scFOS were based on the proposed food uses and use levels for scFOS in conjunction with food consumption data included in the U.S. National Center for Health Statistics' National Health and Nutrition Examination Surveys (NHANES) 2015-2016. Calculations for the mean and 90th percentile *per capita* and consumer-only intakes were performed for all proposed food uses of scFOS, and the percentage of consumers were determined. Similar calculations were used to estimate the intake of scFOS resulting from each individual proposed food use, including the calculations of percent consumers. In both cases, the per person and per kilogram body weight intakes were reported for the following population groups:

- Infants, aged up to 1 year;
- Toddlers, 1 to 2 years;
- Children, ages 3 to 11;
- Female teenagers, ages 12 to 19;
- Male teenagers, ages 12 to 19;
- Female adults, ages 20 and older;
- Male adults, ages 20 and older; and
- Total population (ages 2 and older, and both gender groups combined).

2.0 FOOD CONSUMPTION SURVEY DATA

2.1 Survey Description

NHANES for the years 2015-2016 are available for public use (CDC, 2020a,b; USDA, 2019). NHANES are conducted as continuous, annual surveys, and they are released in 2-year cycles. During each year of the ongoing NHANES program, individuals from the U.S. are sampled from up to 30 different study locations in a complex multi-stage probability design intended to ensure the data are a nationally representative sample of the U.S. population.

NHANES 2015-2016 dietary survey data were collected from individuals and households *via* 24-hour dietary recalls administered on 2 non-consecutive days (Day 1 and Day 2) throughout all 4 seasons of the year. Day 1 data were collected in-person, and Day 2 data were collected by telephone in the following 3 to 10 days, on different days of the week, to achieve the desired degree of statistical independence. The data were collected by first selecting primary sampling units (PSUs), which were counties throughout the U.S., of which 30 PSUs are visited per year. Smaller contiguous counties were combined to attain a minimum population size. These PSUs were segmented, and households were chosen within each segment. One or more participants within a household were interviewed. For NHANES 2015-2016, 15,327 individuals were selected for the sample, 9,971 were interviewed (61.3%), and 9,544 were examined (58.7%).

In addition to collecting information on the types and quantities of foods being consumed, NHANES 2015-2016 collected socio-economic, physiological, and demographic information from individual participants in the survey, such as sex, age, body weight, and other variables (such as height and race-ethnicity) that may be useful in characterizing consumption. The inclusion of this information allows for further assessment of food intake based on consumption by specific population groups of interest within the total population. The primary sample design for NHANES 2015-2016 includes an oversample of non-Hispanic Asian persons, Hispanic persons, non-Hispanic black persons, older adults, and “low income whites/others”; however, sample weights were incorporated to allow estimates from these subgroups to be combined to obtain national estimates that reflect the relative proportions of these groups in the population as a whole (CDC, 2020a,b; USDA, 2019).

2.2 Statistical Methods

For the intake assessment, consumption data from individual dietary records, detailing food items ingested by each survey participant, were collated by computer and used to generate estimates for the intake of scFOS by the U.S. population¹. Estimates for the daily intake of scFOS represent projected 2-day averages for each individual from Day 1 and Day 2 of NHANES 2015-2016 (*i.e.*, a value was established for each person). From these average amounts, a distribution was established from which the mean and percentile intake estimates for the cohort of interest were determined, which incorporated survey weights in order to provide representative intakes for the entire U.S. population. “*Per capita*” intake refers to the estimated intake of scFOS averaged over all individuals surveyed, regardless of whether they consumed food products in which scFOS is proposed for use, and therefore includes individuals with “zero” intakes (*i.e.*, including individuals who reported no intake of food products containing scFOS during the 2 survey days). “Consumer-only” intake refers to the estimated intake of scFOS by only those individuals who reported consuming food products of interest on either Day 1 or Day 2 of the survey.

Mean and 90th percentile intake estimates based on sample sizes of less than 30 and 80, respectively, may not be considered statistically reliable due to the limited sampling size (CDC, 2013). As such, the reliability of estimates for the intake of scFOS based on consumption estimates derived from individual population groups of a limited sample size should be interpreted with caution. These values are marked with an asterisk in the relevant data tables.

¹ Statistical analysis and data management were conducted in DaDiet Software (Dazult Ltd., 2018). DaDiet Software is a web-based software tool that allows accurate estimate of exposure to nutrients and to substances added to foods, including contaminants, food additives and novel ingredients. The main input components are concentration (use level) data and food consumption data. Data sets are combined in the software to provide accurate and efficient exposure assessments.

3.0 FOOD USAGE DATA

The proposed food uses and use levels for scFOS employed in the current intake analysis are summarized in Table 3-1. Food codes representative of each proposed food use were chosen from the NHANES 2015-2016 (CDC, 2020b). Food codes were grouped in food use categories according to Title 21, Section §170.3 of the Code of Federal Regulations (U.S. FDA, 2019). If necessary, product-specific adjustment factors were developed for composite foods/mixtures based on data provided in the Food and Nutrient Database for Dietary Studies (USDA ARS, 2019) or the Food Commodity Intake Database (U.S. EPA & USDA, 2020). All food codes included in the current intake assessment are listed in Appendix C.

Table 3-1 Summary of the Individual Typical and Proposed Food Uses and Use Levels for scFOS in the U.S.

Food Category ^{a,b}	Standard Serving Size (mL or g)	Typical Use Level of scFOS	
		(%)	(mL or g/serving) ^c
Typical Food Uses and Use Levels			
Acidophilus Milk	240 mL	0.4	0.96
Bars ^d	40 to 70 g	1.4 to 2.5	0.56 to 1.75 g
Breakfast Cereals	40 to 55 g	1.8 to 2.5	0.72 to 1.38 g
Beverages and Juices	240 mL	0.4	0.96 mL
Cakes	55 g	1.8	0.99 g
Cheese	30 to 110 g	0.9 to 3.3	0.27 to 3.63 g
Cream	15 to 30 g	3.3 to 6.7	0.50 to 2.01 g
Confectionery	40 g	2.5	1.00 g
Cookies	30 g	3.3	0.99 g
Crackers	15 to 30 g	3.3 to 6.7	0.50 to 2.01 g
Dessert Toppings and Fillings	30 g	3.3	0.99 g
Hard Candy	15 g	6.7	1.01 g
Ice Cream	68 g	1.5	1.02 g
Infant Foods (0 to 12 Months) ^e	7 to 60 g	0.4 to 3.6	0.03 to 2.16 g
Jams and Jellies	20 g	5.0	1.00 g
Analogs and Substitutes for Meat, Poultry or Fish	15 to 85 g	1.2 to 6.7	0.18 to 5.70 g
Milk, Flavored and Unflavored ^f	240 mL	0.4	0.96 mL
Milk, Evaporated and Condensed	30 mL	2.6 to 3.1	0.78 to 0.93 mL
Muffins and Quick Bread	50 to 55 g	1.8 to 2.0	0.90 to 1.10 g
Sauces, Gravies, and Condiments	30 to 125 g	0.8 to 3.3	0.24 to 4.13 g
Snacks	30 g	3.3	0.99 g
Sorbet and Sherbet	85 g	1.2	1.02 g
Soup	245 g	0.4	0.98 g
Toddler Foods (12 to 24 Months)	15 to 125 g	0.8 to 6.7	0.12 to 8.38 g
Yogurt	225 mL	0.4	0.90 mL

Table 3-1 Summary of the Individual Typical and Proposed Food Uses and Use Levels for scFOS in the U.S.

Food Category ^{a,b}	Standard Serving Size (mL or g)	Typical Use Level of scFOS	
		(%)	(mL or g/serving) ^c
Proposed Food Uses and Use Levels			
Bars ^d	40 g	15.0	6 g
Meal Replacement Shakes (milk-based and non-milk-based) ^e	240 mL	2.5	6 g
Dairy Beverages ^h	240 mL (all types)	1.3	3 g
	93 to 207 ⁱ (drinkable yogurts only)	1.5 to 3.2	
Dairy Product Analogs	240 mL	1.3	3 g

scFOS = short-chain Fructooligosaccharide; U.S. = United States.

^a The food use categories, standard serving sizes, and proposed use levels (%) are adapted from GRAS Notice (GRN) 44 (GTC Nutrition Company, 2000) and additional correspondence (U.S. FDA, 2007).

^b Use levels may be different from the intended use in the original notice.

^c Calculated based on standard serving size and proposed % used level.

^d Bars were included at up to 2.5% as a typical use level in GRN 44; however, bars are included at a higher proposed use level of 15.0% in the current assessment.

^e This category excludes infant formula. In addition, since there was a range of Reference Amounts Customarily Consumed per Eating Occasion (RACCs) for infant foods, the use level for cereals was used at 3.6% and the other baby foods at 0.4%.

^f Milk (flavored and unflavored) was included at up to 0.4% as a typical use level in GRN 44; however, both flavored and unflavored milk are currently included under the category of dairy beverages at a proposed use level of up to 1.3%.

^g Meal replacement shakes (milk-based and non-milk-based) were included under beverages and juices in GRN 44; however, they are currently included as a separate category at a proposed use level of up to 2.5%.

^h The dairy beverages category includes milk (flavored and unflavored), cultured dairy beverages like Kefir, and drinkable yogurts.

ⁱ A RACC has not been established for yogurt drinks; however, an approximate serving size was established based on products currently on the U.S. market.

4.0 FOOD SURVEY RESULTS

Two assessments were conducted:

- The first assessment examined anticipated intake of scFOS from all permitted food uses of scFOS based on GRN 44 (GTC Nutrition Company, 2000) (see Section 4.1); and
- The second assessment evaluated the intake of scFOS from all permitted and proposed food uses (see Section 4.2).

Results of these assessments are presented in Sections 4.1 and 4.2, respectively. Estimates for the total daily intakes of scFOS from permitted food uses are provided in Tables 4.1-1 (g/person/day) and 4.1-2 (g/kg body weight/day). Estimates for the total daily intakes of scFOS from permitted and proposed food uses are provided in Tables 4.2-1 (g/person/day) and 4.2-2 (g/kg body weight/day). Estimates for the daily intake of scFOS from individual permitted and proposed food uses in the U.S. are summarized in Tables A-1 to A-8 and B-1 to B-8 of Appendices A and B, respectively. Tables A-1 to A-8 provide estimates for the daily intake of scFOS on an absolute basis (g/person/day), whereas Tables B-1 to B-8 provide estimates for the daily intake of scFOS on a per kilogram body weight basis (g/kg body weight/day).

4.1 Estimated Daily Intake of scFOS from All Permitted Food Uses in the U.S.

Table 4.1-1 summarizes the estimated total intake of scFOS (g/person/day) from all permitted food uses in the U.S. population group. Table 4.1-2 presents this data on a per kilogram body weight basis (g/kg body weight/day). The percentage of consumers was high among all age groups evaluated in the current intake assessment; more than 64.2% of the population groups consisted of consumers of food products in which scFOS is currently proposed for use (Table 4.1-1). Children, female teenagers, and female adults had the greatest proportion of consumers at 100%. The consumer-only estimates are more relevant to risk assessments as they represent exposures in the target population; consequently, only the consumer-only intake results are discussed in detail herein.

Among the total population (ages 2 and up), the mean and 90th percentile consumer-only intakes of scFOS were determined to be 8 and 13 g/person/day, respectively. Of the individual population groups, male adults were determined to have the greatest mean and 90th percentile consumer-only intakes of scFOS on an absolute basis, at 9 and 17 g/person/day, respectively, while infants had the lowest mean and 90th percentile consumer-only intakes of 4 and 8 g/person/day, respectively (Table 4.1-1).

Table 4.1-1 Summary of the Estimated Daily Intake of scFOS from Permitted Food Uses in the U.S. by Population Group (2015-2016 NHANES Data)

Population Group	Age Group (Years)	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
Infants	0 to <1	2	7	64.2	204	4	8
Toddlers	1 to 2	6	10	99.9	369	6	10
Children	3 to 11	7	10	100	1,176	7	10
Female Teenagers	12 to 19	6	10	100	473	6	10
Male Teenagers	12 to 19	7	12	99.1	490	7	12
Female Adults	20 and up	7	12	100	2,205	7	12
Male Adults	20 and up	9	17	99.9	1,994	9	17
Total Population	2 and up	8	13	99.9	6,522	8	13

n = sample size; NHANES = National Health and Nutrition Examination Survey; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

On a body weight basis, the total population (ages 2 and up) mean and 90th percentile consumer-only intakes of scFOS were determined to be 0.12 and 0.24 g/kg body weight/day, respectively. Among the individual population groups, toddlers were identified as having the highest mean consumer-only intakes, of 0.48 g/kg body weight/day, while infants were identified as having the highest 90th percentile intakes of 0.99 g/kg body weight/day. Female adults had the lowest mean and 90th percentile consumer-only intakes of 0.09 and 0.16 g/kg body weight/day, respectively (Table 4.1-2).

Table 4.1-2 Summary of the Estimated Daily Per Kilogram Body Weight Intake of scFOS from Permitted Food Uses in the U.S. by Population Group (2015-2016 NHANES Data)

Population Group	Age Group (Years)	Per Capita Intake (g/kg bw/day)		Consumer-Only Intake (g/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
Infants	0 to <1	0.28	0.83	64.2	204	0.44	0.99
Toddlers	1 to 2	0.48	0.79	99.9	364	0.48	0.79
Children	3 to 11	0.26	0.45	100	1,171	0.26	0.45
Female Teenagers	12 to 19	0.10	0.19	100	465	0.10	0.19
Male Teenagers	12 to 19	0.11	0.19	99.1	489	0.11	0.19
Female Adults	20 and up	0.09	0.16	100	2,191	0.09	0.16
Male Adults	20 and up	0.10	0.20	99.9	1,968	0.10	0.20
Total Population	2 and up	0.12	0.24	99.9	6,464	0.12	0.24

bw = body weight; n = sample size; NHANES = National Health and Nutrition Examination Survey; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

In the present report, the assessment of scFOS intakes from permitted uses was matched with the food uses and use levels indicated in GRN 44 (GTC Nutrition Company, 2000) and the subsequent amendments to the food uses and use levels. However, it should be noted that different databases were utilized in each assessment, whereby the GRN 44 assessment was based on consumption data from the Continuing Survey of Food Intake by Individuals (CSFII 1994-1996) compared to the NHANES 2015-2016 consumption data used in the current assessment. Therefore, intake estimates are likely to differ between the 2 assessments due to differences in methodologies used as well as recency of the data (whereby the CSFII 1994-1996 database is a decade older). Furthermore, in GRN 44 and the amendments to the food uses and use levels, limited detail of the intake assessments were provided.

4.2 Estimated Daily Intake of scFOS from Permitted and Proposed Food Uses in the U.S.

Among the total population (ages 2 and up), the mean and 90th percentile consumer-only intakes of scFOS from permitted and proposed food uses were determined to be 10 and 18 g/person/day, respectively. Of the individual population groups, male adults were determined to have the greatest mean and 90th percentile consumer-only intakes of scFOS on an absolute basis, at 11 and 20 g/person/day, respectively, while infants had the lowest mean and 90th percentile consumer-only intakes of 4 and 9 g/person/day, respectively (Table 4.2-1).

Table 4.2-1 Summary of the Estimated Daily Intake of scFOS from Permitted and Proposed Food Uses in the U.S. by Population Group (2015-2016 NHANES Data)

Population Group	Age Group (Years)	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
Infants	0 to <1	3	7	64.2	204	4	9
Toddlers	1 to 2	10	17	99.9	369	10	17
Children	3 to 11	10	15	100	1,176	10	15
Female Teenagers	12 to 19	8	12	100	473	8	12
Male Teenagers	12 to 19	10	17	99.4	491	10	17
Female Adults	20 and up	9	15	100	2,205	9	15
Male Adults	20 and up	11	20	99.9	1,994	11	20
Total Population	2 and up	10	18	99.9	6,523	10	18

n = sample size; NHANES = National Health and Nutrition Examination Survey; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

On a body weight basis, the total population (ages 2 and up) mean and 90th percentile consumer-only intakes of scFOS were determined to be 0.18 and 0.35 g/kg body weight/day, respectively. Among the individual population groups, toddlers were identified as having the highest mean and 90th percentile consumer-only intakes of any population group, of 0.80 and 1.32 g/kg body weight/day, respectively. Female adults had the lowest mean and 90th percentile consumer-only intakes of 0.12 and 0.21 g/kg body weight/day, respectively (Table 4.2-2).

Table 4.2-2 Summary of the Estimated Daily Per Kilogram Body Weight Intake of scFOS from Permitted and Proposed Food Uses in the U.S. by Population Group (2015-2016 NHANES Data)

Population Group	Age Group (Years)	Per Capita Intake (g/kg bw/day)		Consumer-Only Intake (g/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
Infants	0 to <1	0.30	0.86	64.2	204	0.47	1.03
Toddlers	1 to 2	0.80	1.32	99.9	364	0.80	1.32
Children	3 to 11	0.38	0.65	100	1,171	0.38	0.65
Female Teenagers	12 to 19	0.14	0.26	100	465	0.14	0.26
Male Teenagers	12 to 19	0.15	0.26	99.4	490	0.15	0.26
Female Adults	20 and up	0.12	0.21	100	2,191	0.12	0.21
Male Adults	20 and up	0.13	0.24	99.9	1,968	0.13	0.24
Total Population	2 and up	0.16	0.33	99.9	6,465	0.16	0.33

bw = body weight; n = sample size; NHANES = National Health and Nutrition Examination Survey; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

4.3 Estimated Daily Intake of scFOS from Individual Permitted and Proposed Food Uses in the U.S.

Estimates for the mean and 90th percentile daily intakes of scFOS from each individual food category are summarized in Tables A-1 to A-8 and B-1 to B-8 on a g/day and g/kg body weight/day basis, respectively. The total U.S. population was identified as being significant consumers of beverages and juices (73.2 to 95.3% consumers), dairy beverages (48.4 to 90.4% consumers), snacks (47.0 to 65.3% consumers), breakfast cereals (37.6 to 62.2% consumers), and cheese (40.9 to 53.4%).

In terms of contribution to total mean intake of scFOS, dairy beverages (which contributed 14.6 to 50.4% to total mean intakes) and beverages and juices (which contributed 8.2 to 32.4% to total mean intakes) were the 2 main sources of intake across all population groups. Acidophilus milk, dessert toppings and fillings, evaporated and condensed milk, and sorbet all individually contributed ≤0.3% to total mean scFOS intakes across all population groups (see Tables A-1 to A-8 and/or B-1 to B-8 for further details).

5.0 SUMMARY AND CONCLUSIONS

Consumption data and information pertaining to the individual permitted and proposed food uses of scFOS were used to estimate the *per capita* and consumer-only intakes of scFOS for specific demographic groups and for the total U.S. population. There were a number of assumptions included in the assessment which render exposure estimates that may be considered suitably conservative. For example, it has been assumed in both exposure assessments that all food products within a food category contain scFOS at the maximum specified level of use. In reality, the levels added to specific foods will vary depending on the nature of the food product and it is unlikely that scFOS will have 100% market penetration in all identified food categories.

In summary, on a consumer-only basis, the resulting mean and 90th percentile intakes of scFOS by the total U.S. population from all permitted and proposed food uses, were estimated to be 10 g/person/day (0.16 g/kg body weight/day) and 18 g/person/day (0.33 g/kg body weight/day), respectively. Among the individual population groups, the highest mean and 90th percentile consumer-only intakes of scFOS were determined to be 11 g/person/day (0.13 g/kg body weight/day) and 20 g/person/day (0.24 g/kg body weight/day), respectively, as identified among male adults. Infants had the lowest mean and 90th percentile consumer-only intakes of 4 g/person/day (0.47 g/kg body weight/day) and 9 g/person/day (1.03 g/kg body weight/day), respectively.

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Appendix A
Estimated Daily Intake of scFOS from Individual Permitted and Proposed
Food Uses by Different Population Groups within the U.S. (2015-2016
NHANES Data)

Table A-1 Estimated Daily Intake of scFOS from Individual Permitted and Proposed Food Uses by Infants, Aged Up to 1 Year within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	3	7	64.2	204	4	9
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	2.4	<1*	<1*	10.7	40	1	2*
Beverages and Juices	2.9	<1*	<1*	17.2	55	<1*	1*
Cakes	0.4	<1*	na	3.1	8	<1*	1*
Cheese	1.3	<1*	na	7.8	23	<1*	1*
Cream	0	0	0	0	0	0	0
Confectionery	<0.1	<1*	na	1.4	3	<1*	<1*
Cookies	0.4	<1*	na	4.6	16	<1*	<1*
Crackers	1.7	<1*	na	8.7	29	1*	1*
Dessert Toppings and Fillings	0	0	0	0	0	0	0
Hard Candy	0	0	0	0	0	0	0
Ice Cream	0.1	<1*	na	1.2	6	<1*	1*
Infant Foods (0 to 12 Months)	60.6	2	6	57.7	185	3	7
Jams and Jellies	0.2	<1*	na	2.1	3	<1*	<1*
Analogs and Substitutes for Meat, Poultry or Fish	0	0	0	0	0	0	0
Milk, Evaporated and Condensed	0	0	0	0	0	0	0
Muffins and Quick Bread	0.2	<1*	na	1.0	3	1*	1*
Sauces, Gravies, and Condiments	4.7	<1*	<1*	11.3	29	1*	2*
Snacks	0.7	<1*	na	5.9	15	<1*	1*
Sorbet and Sherbet	0	0	0	0	0	0	0
Soup	0.1	<1*	na	1.4	6	<1*	<1*
Toddler Foods (12 to 24 Months)	12.3	<1*	na	2.1	9	15*	28*
Yogurt	0.4	<1*	na	5.1	19	<1*	<1*
Proposed Uses							
Bars	0.3	<1*	na	0.3	2	3*	3*
Meal Replacement Shakes (milk-based and non-milk-based)	0	0	0	0	0	0	0
Dairy Beverages	10.2	<1*	na	8.1	26	3*	9*
Dairy Product Analogs	1.0	<1*	na	1.6	2	2*	2*

n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table A-2 Estimated Daily Intake of scFOS from Individual Permitted and Proposed Food Uses by Toddlers, Aged 1 to 2 Years within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	10	17	99.9	369	10	17
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.0	1	2	61.6	241	1	3
Beverages and Juices	8.2	1	2	73.2	289	1	2
Cakes	1.3	<1	<1	22.7	89	1	1
Cheese	3.4	<1	1	48.3	167	1	1
Cream	<0.1	<1*	na	1.0	2	<1*	<1*
Confectionery	1.4	<1	<1	32.3	118	<1	1
Cookies	2.6	<1	1	45.8	161	1	1
Crackers	5.7	1	2	52.5	172	1	2
Dessert Toppings and Fillings	<0.1	<1*	na	2.8	7	<1*	<1*
Hard Candy	0.4	<1*	na	7.0	28	1*	1*
Ice Cream	0.9	<1	<1*	14.2	59	1	1*
Infant Foods (0 to 12 Months)	2.0	<1	<1*	16.5	70	1	4*
Jams and Jellies	0.7	<1	<1*	21.0	66	<1	1*
Analogs and Substitutes for Meat, Poultry or Fish	0.1	<1*	na	0.8	2	1*	1*
Milk, Evaporated and Condensed	0	0	0	0	0	0	0
Muffins and Quick Bread	0.3	<1*	na	4.5	13	1*	1*
Sauces, Gravies, and Condiments	4.4	<1	2	37.6	141	1	3
Snacks	2.8	<1	1	54.9	199	<1	1
Sorbet and Sherbet	<0.1	<1*	na	0.4	2	<1*	<1*
Soup	0.6	<1	<1*	14.2	53	<1	1*
Toddler Foods (12 to 24 Months)	1.1	<1*	na	3.0	12	4*	6*
Yogurt	1.1	<1	<1	33.2	107	<1	1
Proposed Uses							
Bars	3.6	<1	1*	12.1	35	3	5*
Meal Replacement Shakes (milk-based and non-milk-based)	0.1	<1*	na	1.2	4	1*	1*
Dairy Beverages	50.4	5	10	90.4	330	5	11
Dairy Product Analogs	1.8	<1*	na	5.4	24	3*	7*

n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table A-3 Estimated Daily Intake of scFOS from Individual Permitted and Proposed Food Uses by Children Aged 3 to 11 Years within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	10	15	100	1,176	10	15
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.6	1	2	62.2	762	1	3
Beverages and Juices	12.8	1	3	87.9	1,065	1	3
Cakes	3.5	<1	1	36.2	420	1	2
Cheese	3.4	<1	1	49.3	538	1	1
Cream	0.5	<1*	na	2.3	17	2*	4*
Confectionery	2.1	<1	1	39.0	413	1	1
Cookies	4.6	<1	1	46.6	513	1	2
Crackers	4.3	<1	2	34.8	357	1	2
Dessert Toppings and Fillings	0.2	<1	na	4.4	43	<1	1*
Hard Candy	0.6	<1	<1	10.6	136	1	1
Ice Cream	3.4	<1	1	30.5	360	1	2
Infant Foods (0 to 12 Months)	0.1	<1*	na	0.9	8	1*	1*
Jams and Jellies	1.1	<1	1	19.0	182	1	1
Analogs and Substitutes for Meat, Poultry or Fish	0.3	<1*	na	2.4	16	1*	3*
Milk, Evaporated and Condensed	<0.1	<1*	na	<0.1	1	<1*	<1*
Muffins and Quick Bread	0.7	<1	na	6.7	68	1	1*
Sauces, Gravies, and Condiments	5.1	<1	2	46.9	560	1	2
Snacks	6.1	1	1	64.5	761	1	2
Sorbet and Sherbet	0.1	<1*	na	1.3	13	1*	1*
Soup	1.3	<1	<1	15.2	200	1	1
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	0.7	<1	<1	19.7	215	<1	1
Proposed Uses							
Bars	4.4	<1	2	13.0	114	3	6
Meal Replacement Shakes (milk-based and non-milk-based)	0.2	<1*	na	1.0	12	2*	4*
Dairy Beverages	36.3	3	7	84.8	1,016	4	7
Dairy Product Analogs	0.7	<1	na	4.3	44	2	3*

n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table A-4 Estimated Daily Intake of scFOS from Individual Permitted and Proposed Food Uses by Female Teenagers Aged 12 to 19 Years within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	8	12	100	473	8	12
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	6.8	1	1	43.7	205	1	3
Beverages and Juices	19.9	2	3	91.4	426	2	4
Cakes	4.4	<1	1	29.5	144	1	2
Cheese	3.6	<1	1	46.2	212	1	1
Cream	1.0	<1*	na	3.4	19	2*	4*
Confectionery	2.8	<1	1	36.2	149	1	1
Cookies	5.1	<1	1	37.7	172	1	2
Crackers	1.8	<1	1*	13.8	71	1	2*
Dessert Toppings and Fillings	0.3	<1*	na	4.4	19	1*	1*
Hard Candy	0.6	<1	na	4.9	34	1	2*
Ice Cream	3.0	<1	1	21.6	108	1	2
Infant Foods (0 to 12 Months)	0	0	0	0	0	0	0
Jams and Jellies	1.0	<1	<1*	12.1	42	1	1*
Analogs and Substitutes for Meat, Poultry or Fish	1.2	<1*	na	5.2	14	2*	5*
Milk, Evaporated and Condensed	<0.1	<1*	na	0.1	1	2*	2*
Muffins and Quick Bread	1.1	<1*	na	6.2	25	1*	2*
Sauces, Gravies, and Condiments	4.3	<1	1	44.5	216	1	2
Snacks	8.6	1	2	65.3	292	1	2
Sorbet and Sherbet	0.3	<1*	na	1.7	3	1*	2*
Soup	1.1	<1	<1*	13.6	53	1	1*
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	0.3	<1	na	6.9	39	<1	1*
Proposed Uses							
Bars	4.9	<1	2*	11.1	49	3	6*
Meal Replacement Shakes (milk-based and non-milk-based)	0.4	<1*	na	0.8	8	4*	5*
Dairy Beverages	26.2	2	5	64.3	305	3	6
Dairy Product Analogs	1.3	<1*	na	4.9	16	2*	3*

n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table A-5 Estimated Daily Intake of scFOS from Individual Permitted and Proposed Food Uses by Male Teenagers Aged 12 to 19 Years within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	10	17	99.4	491	10	17
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.2	1	2	50.0	240	1	3
Beverages and Juices	20.8	2	4	90.1	440	2	5
Cakes	3.3	<1	1	26.9	128	1	2
Cheese	3.0	<1	1	40.9	193	1	1
Cream	0.1	<1*	na	1.9	4	1*	1*
Confectionery	1.8	<1	1	30.3	133	1	2
Cookies	4.7	<1	1	38.0	169	1	2
Crackers	2.0	<1	1*	13.0	61	1	3*
Dessert Toppings and Fillings	<0.1	<1*	na	1.5	6	<1*	<1*
Hard Candy	0.4	<1	na	5.4	31	1	1*
Ice Cream	3.0	<1	1	18.7	90	2	3
Infant Foods (0 to 12 Months)	0	0	0	0	0	0	0
Jams and Jellies	1.2	<1	1*	12.8	62	1	3*
Analogs and Substitutes for Meat, Poultry or Fish	<0.1	<1*	na	0.3	4	1*	1*
Milk, Evaporated and Condensed	0	0	0	0	0	0	0
Muffins and Quick Bread	0.8	<1*	na	5.2	19	2*	2*
Sauces, Gravies, and Condiments	4.5	<1	1	49.4	229	1	2
Snacks	7.1	1	2	59.3	288	1	2
Sorbet and Sherbet	0.1	<1*	na	1.1	1	1*	1*
Soup	1.4	<1	1*	12.0	68	1	2*
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	0.3	<1*	na	5.3	28	<1*	1*
Proposed Uses		<1					
Bars	3.3	<1	na	8.2	41	4	7*
Meal Replacement Shakes (milk-based and non-milk-based)	2.1	<1*	na	2.7	16	7*	16*
Dairy Beverages	31.7	3	8	73.0	358	4	9
Dairy Product Analogs	1.0	<1*	na	3.4	14	3*	4*

n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table A-6 Estimated Daily Intake of scFOS from Individual Permitted and Proposed Food Uses by Female Adults Aged 20 Years and Older within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	9	15	100	2,205	9	15
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.8	1	2	38.2	843	2	4
Beverages and Juices	28.0	2	5	92.0	2,044	3	5
Cakes	3.4	<1	1	28.7	653	1	2
Cheese	4.8	<1	1	50.2	996	1	2
Cream	2.4	<1	<1	11.3	192	2	4
Confectionery	1.7	<1	1	31.3	658	<1	1
Cookies	3.8	<1	1	31.4	653	1	2
Crackers	3.4	<1	1	25.2	521	1	2
Dessert Toppings and Fillings	0.1	<1	na	1.9	34	<1	1*
Hard Candy	0.3	<1	na	4.6	107	1	1
Ice Cream	3.1	<1	1	22.6	454	1	2
Infant Foods (0 to 12 Months)	<0.1	<1*	na	<0.1	3	1*	1*
Jams and Jellies	0.7	<1	<1	10.8	222	1	1
Analogs and Substitutes for Meat, Poultry or Fish	1.3	<1	na	2.7	47	4	19*
Milk, Evaporated and Condensed	0.1	<1	na	1.2	40	1	2*
Muffins and Quick Bread	0.9	<1	na	6.7	130	1	2
Sauces, Gravies, and Condiments	4.2	<1	1	45.7	966	1	2
Snacks	4.2	<1	1	48.7	974	1	2
Sorbet and Sherbet	<0.1	<1*	na	0.5	12	1*	1*
Soup	1.8	<1	1	18.0	378	1	2
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	1.0	<1	<1	19.2	335	<1	1
Proposed Uses							
Bars	6.2	1	2	11.5	200	5	8
Meal Replacement Shakes (milk-based and non-milk-based)	4.0	<1	na	6.3	117	6	9
Dairy Beverages	15.3	1	4	48.4	1,089	3	6
Dairy Product Analogs	1.4	<1	na	7.4	141	2	4

n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table A-7 Estimated Daily Intake of scFOS from Individual Permitted and Proposed Food Uses by Male Adults Aged 20 Years and Older within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	11	20	99.9	1,994	11	20
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.9	1	3	37.6	720	2	6
Beverages and Juices	32.4	4	7	95.3	1,865	4	7
Cakes	2.8	<1	1	27.4	545	1	2
Cheese	4.9	1	1	53.4	864	1	2
Cream	2.2	<1	<1	10.3	173	2	6
Confectionery	1.3	<1	1	26.0	480	1	1
Cookies	3.0	<1	1	29.3	587	1	2
Crackers	2.2	<1	1	18.8	345	1	3
Dessert Toppings and Fillings	0.1	<1*	na	1.2	27	1*	2*
Hard Candy	0.4	<1	na	4.5	77	1	2*
Ice Cream	2.7	<1	1	21.0	413	1	3
Infant Foods (0 to 12 Months)	<0.1	<1*	na	0.3	1	1*	1*
Jams and Jellies	0.8	<1	<1	13.1	227	1	1
Analogs and Substitutes for Meat, Poultry or Fish	1.4	<1	na	3.0	38	5	14*
Milk, Evaporated and Condensed	<0.1	<1*	na	0.5	18	1*	2*
Muffins and Quick Bread	0.5	<1	na	3.7	60	2	3*
Sauces, Gravies, and Condiments	4.6	1	2	51.2	953	1	2
Snacks	4.5	<1	1	47.0	819	1	2
Sorbet and Sherbet	<0.1	<1*	na	0.2	8	2*	4*
Soup	1.5	<1	1	14.5	324	1	2
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	0.6	<1	<1	11.7	174	1	1
Proposed Uses							
Bars	5.9	1	3	13.2	164	5	10
Meal Replacement Shakes (milk-based and non-milk-based)	4.3	<1	na	6.0	92	8	15
Dairy Beverages	14.6	2	5	49.8	982	3	6
Dairy Product Analogs	1.2	<1	na	5.1	86	3	5

n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table A-8 Estimated Daily Intake of scFOS from Individual Permitted and Proposed Food Uses by the U.S. Population Aged 2 Years and Older (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/day)		Consumer-Only Intake (g/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	10	18	99.9	6,523	10	18
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.7	1	2	42.1	2,902	2	4
Beverages and Juices	27.1	3	6	92.4	5,996	3	6
Cakes	3.2	<1	1	29.0	1,944	1	2
Cheese	4.5	<1	1	50.6	2,899	1	2
Cream	1.9	<1	na	8.8	407	2	5
Confectionery	1.6	<1	1	30.6	1,904	1	1
Cookies	3.6	<1	1	33.3	2,165	1	2
Crackers	2.9	<1	1	23.1	1,443	1	2
Dessert Toppings and Fillings	0.1	<1	na	2.1	135	1	1
Hard Candy	0.4	<1	na	5.4	402	1	2
Ice Cream	3.0	<1	1	22.6	1,461	1	3
Infant Foods (0 to 12 Months)	<0.1	<1*	na	0.3	23	1*	1*
Jams and Jellies	0.8	<1	<1	13.0	773	1	1
Analogs and Substitutes for Meat, Poultry or Fish	1.1	<1	na	2.8	120	4	14
Milk, Evaporated and Condensed	0.1	<1	na	0.7	60	1	2*
Muffins and Quick Bread	0.7	<1	na	5.5	309	1	3
Sauces, Gravies, and Condiments	4.5	<1	1	47.9	3,002	1	2
Snacks	4.9	<1	1	51.6	3,250	1	2
Sorbet and Sherbet	0.1	<1	na	0.6	38	1	2*
Soup	1.5	<1	1	15.8	1,049	1	2
Toddler Foods (12 to 24 Months)	<0.1	<1*	na	<0.1	3	5*	6*
Yogurt	0.7	<1	<1	15.3	841	<1	1
Proposed Uses							
Bars	5.6	1	2	12.1	584	4	8
Meal Replacement Shakes (milk-based and non-milk-based)	3.4	<1	na	5.0	246	7	12
Dairy Beverages	19.3	2	6	56.0	3,916	3	7
Dairy Product Analogs	1.2	<1	na	5.8	312	2	4

n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Appendix B
Estimated Daily Per Kilogram Body Weight Intake of scFOS from
Individual Permitted and Proposed Food Uses by Different Population
Groups within the U.S. (2015-2016 NHANES Data)

Table B-1 Estimated Daily Per Kilogram Body Weight Intake of scFOS from Individual Permitted and Proposed Food Uses by Infants, Aged Up to 1 Year within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/kg bw/day)		Consumer-Only Intake (g/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	0.30	0.86	64.2	204	0.47	1.03
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	2.3	0.01	<0.01*	10.7	40	0.06	0.20*
Beverages and Juices	2.8	0.01	0.03*	17.2	55	0.05	0.10*
Cakes	0.4	<0.01*	na	3.1	8	0.04*	0.07*
Cheese	1.2	<0.01*	na	7.8	23	0.05*	0.09*
Cream	0	0	0	0	0	0	0
Confectionery	<0.1	<0.01*	na	1.4	3	<0.01*	0.01*
Cookies	0.3	<0.01*	na	4.6	16	0.02*	0.04*
Crackers	1.6	<0.01*	na	8.7	29	0.05*	0.09*
Dessert Toppings and Fillings	0	0	0	0	0	0	0
Hard Candy	0	0	0	0	0	0	0
Ice Cream	0.1	<0.01*	na	1.2	6	0.04*	0.07*
Infant Foods (0 to 12 Months)	63.4	0.19	0.64	57.7	185	0.33	0.83
Jams and Jellies	0.2	<0.01*	na	2.1	3	0.03*	0.03*
Analogs and Substitutes for Meat, Poultry or Fish	0	0	0	0	0	0	0
Milk, Evaporated and Condensed	0	0	0	0	0	0	0
Muffins and Quick Bread	0.2	<0.01*	na	1.0	3	0.06*	0.07*
Sauces, Gravies, and Condiments	4.9	0.01*	0.01*	11.3	29	0.13*	0.30*
Snacks	0.8	<0.01*	na	5.9	15	0.04*	0.10*
Sorbet and Sherbet	0	0	0	0	0	0	0
Soup	0.1	<0.01*	na	1.4	6	0.01*	0.02*
Toddler Foods (12 to 24 Months)	11.2	0.03*	na	2.1	9	1.62*	3.06*
Yogurt	0.4	<0.01*	na	5.1	19	0.02*	0.04*
Proposed Uses							
Bars	0.2	<0.01*	na	0.3	2	0.20*	0.23*
Meal Replacement Shakes (milk-based and non-milk-based)	0	0	0	0	0	0	0
Dairy Beverages	9.0	0.03*	na	8.1	26	0.34*	0.87*
Dairy Product Analogs	1.1	<0.01*	na	1.6	2	0.21*	0.23*

bw = body weight; n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table B-2 Estimated Daily Per Kilogram Body Weight Intake of scFOS from Individual Permitted and Proposed Food Uses by Toddlers, Aged 1 to 2 Years within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (g/kg bw/day)		Consumer-Only Intake (g/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	0.80	1.32	99.9	364	0.80	1.32
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.2	0.06	0.19	61.2	236	0.09	0.22
Beverages and Juices	8.0	0.06	0.15	73.1	285	0.09	0.17
Cakes	1.3	0.01	0.04	22.0	85	0.05	0.08
Cheese	3.3	0.03	0.07	47.8	163	0.06	0.09
Cream	<0.1	<0.01*	na	1.0	2	0.02*	0.02*
Confectionery	1.3	0.01	0.04	32.3	117	0.03	0.07
Cookies	2.6	0.02	0.06	46.0	160	0.05	0.09
Crackers	5.5	0.04	0.12	52.6	169	0.08	0.20
Dessert Toppings and Fillings	<0.1	<0.01*	na	2.8	7	0.01*	0.02*
Hard Candy	0.4	<0.01*	na	7.0	27	0.04*	0.08*
Ice Cream	0.8	0.01	0.03*	14.3	59	0.04	0.09*
Infant Foods (0 to 12 Months)	2.3	0.02	0.03*	16.7	70	0.11	0.38*
Jams and Jellies	0.7	0.01	0.02*	21.2	66	0.03	0.07*
Analogs and Substitutes for Meat, Poultry or Fish	0.1	<0.01*	na	0.8	2	0.08*	0.08*
Milk, Evaporated and Condensed	0	0	0	0	0	0	0
Muffins and Quick Bread	0.3	<0.01*	na	4.6	13	0.06*	0.09*
Sauces, Gravies, and Condiments	4.4	0.04	0.13	37.4	138	0.09	0.22
Snacks	2.6	0.02	0.06	55.1	198	0.04	0.07
Sorbet and Sherbet	<0.1	<0.01*	na	0.4	2	0.03*	0.03*
Soup	0.6	<0.01	0.02*	14.0	52	0.03	0.05*
Toddler Foods (12 to 24 Months)	1.2	0.01*	na	3.0	12	0.33*	0.41*
Yogurt	1.1	0.01	0.03	33.3	105	0.03	0.05
Proposed Uses							
Bars	3.7	0.03	0.08*	12.2	35	0.24	0.40*
Meal Replacement Shakes (milk-based and non-milk-based)	0.1	<0.01*	na	1.2	4	0.06*	0.08*
Dairy Beverages	50.6	0.41	0.87	90.3	325	0.45	0.90
Dairy Product Analogs	1.9	0.02*	na	5.4	24	0.28*	0.59*

bw = body weight; n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table B-3 Estimated Daily Per Kilogram Body Weight Intake of scFOS from Individual Permitted and Proposed Food Uses by Children Aged 3 to 11 Years within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (mg/kg bw/day)		Consumer-Only Intake (mg/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	0.38	0.65	100	1,171	0.38	0.65
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.6	0.03	0.07	62.1	758	0.05	0.11
Beverages and Juices	12.2	0.05	0.10	88.2	1,063	0.05	0.10
Cakes	3.4	0.01	0.04	36.2	418	0.04	0.07
Cheese	3.5	0.01	0.04	49.5	538	0.03	0.06
Cream	0.3	<0.01*	na	2.3	17	0.06*	0.10*
Confectionery	2.1	0.01	0.02	39.2	413	0.02	0.04
Cookies	4.6	0.02	0.05	46.9	513	0.04	0.07
Crackers	4.5	0.02	0.06	34.9	357	0.05	0.10
Dessert Toppings and Fillings	0.2	<0.01	na	4.4	43	0.01	0.04*
Hard Candy	0.6	<0.01	<0.01	10.7	136	0.02	0.04
Ice Cream	3.1	0.01	0.04	30.6	360	0.04	0.08
Infant Foods (0 to 12 Months)	0.1	<0.01*	na	0.9	8	0.03*	0.09*
Jams and Jellies	1.1	<0.01	0.02	19.0	181	0.02	0.04
Analogs and Substitutes for Meat, Poultry or Fish	0.4	<0.01*	na	2.4	16	0.06*	0.13*
Milk, Evaporated and Condensed	<0.1	<0.01*	na	<0.1	1	0.01*	0.01*
Muffins and Quick Bread	0.7	<0.01	na	6.6	67	0.04	0.08*
Sauces, Gravies, and Condiments	4.8	0.02	0.07	46.9	557	0.04	0.10
Snacks	5.8	0.02	0.06	64.6	759	0.03	0.06
Sorbet and Sherbet	0.1	<0.01*	na	1.3	13	0.03*	0.05*
Soup	1.2	<0.01	0.02	15.2	199	0.03	0.06
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	0.8	<0.01	0.01	19.7	214	0.02	0.03
Proposed Uses							
Bars	4.1	0.02	0.07	13.1	114	0.12	0.18
Meal Replacement Shakes (milk-based and non-milk-based)	0.3	<0.01*	na	1.0	12	0.10*	0.18*
Dairy Beverages	37.5	0.14	0.32	84.8	1,013	0.17	0.34
Dairy Product Analogs	0.8	<0.01	na	4.3	44	0.07	0.15*

bw = body weight; n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table B-4 Estimated Daily Per Kilogram Body Weight Intake of scFOS from Individual Permitted and Proposed Food Uses by Female Teenagers Aged 12 to 19 Years within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (mg/kg bw/day)		Consumer-Only Intake (mg/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	0.14	0.26	100	465	0.14	0.26
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	6.8	0.01	0.02	43.5	201	0.02	0.05
Beverages and Juices	19.3	0.03	0.05	91.3	418	0.03	0.06
Cakes	4.3	0.01	0.02	29.4	142	0.02	0.03
Cheese	3.4	<0.01	0.01	46.1	209	0.01	0.02
Cream	1.1	<0.01*	na	3.4	19	0.04*	0.08*
Confectionery	3.0	<0.01	0.01	36.3	147	0.01	0.03
Cookies	5.2	0.01	0.02	38.1	170	0.02	0.04
Crackers	1.7	<0.01	0.01*	13.6	68	0.02	0.03*
Dessert Toppings and Fillings	0.3	<0.01*	na	4.5	19	0.01*	0.02*
Hard Candy	0.6	<0.01	na	5.0	34	0.02	0.04*
Ice Cream	3.0	<0.01	0.02	21.4	106	0.02	0.04
Infant Foods (0 to 12 Months)	0	0	0	0	0	0	0
Jams and Jellies	1.0	<0.01	<0.01*	12.3	42	0.01	0.02*
Analogs and Substitutes for Meat, Poultry or Fish	0.9	<0.01*	na	5.3	14	0.02*	0.06*
Milk, Evaporated and Condensed	<0.1	<0.01*	na	0.1	1	0.02*	0.02*
Muffins and Quick Bread	1.0	<0.01*	na	5.9	24	0.02*	0.03*
Sauces, Gravies, and Condiments	4.4	0.01	0.02	44.4	211	0.01	0.04
Snacks	8.9	0.01	0.03	65.2	286	0.02	0.04
Sorbet and Sherbet	0.3	<0.01*	na	1.7	3	0.02*	0.03*
Soup	1.1	<0.01	0.01*	13.7	51	0.01	0.02*
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	0.4	<0.01	na	7.0	39	0.01	0.01*
Proposed Uses							
Bars	5.0	0.01	0.02*	11.3	49	0.06	0.10*
Meal Replacement Shakes (milk-based and non-milk-based)	0.4	<0.01*	na	0.8	8	0.06*	0.08*
Dairy Beverages	26.6	0.04	0.09	64.3	301	0.06	0.11
Dairy Product Analogs	1.3	<0.01*	na	5.0	16	0.03*	0.04*

bw = body weight; n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table B-5 Estimated Daily Per Kilogram Body Weight Intake of scFOS from Individual Permitted and Proposed Food Uses by Male Teenagers Aged 12 to 19 Years within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (mg/kg bw/day)		Consumer-Only Intake (mg/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	0.15	0.26	99.4	490	0.15	0.26
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.3	0.01	0.03	49.8	239	0.02	0.04
Beverages and Juices	19.7	0.03	0.06	90.4	440	0.03	0.06
Cakes	3.5	0.01	0.02	27.0	128	0.02	0.04
Cheese	2.9	<0.01	0.01	41.0	193	0.01	0.02
Cream	0.1	<0.01*	na	1.9	4	0.01*	0.02*
Confectionery	1.7	<0.01	0.01	30.1	132	0.01	0.02
Cookies	4.8	0.01	0.02	38.1	169	0.02	0.04
Crackers	2.0	<0.01	0.01*	13.1	61	0.02	0.04*
Dessert Toppings and Fillings	<0.1	<0.01*	na	1.5	6	<0.01*	0.01*
Hard Candy	0.4	<0.01	na	5.4	31	0.01	0.02*
Ice Cream	3.1	<0.01	0.02	18.7	90	0.02	0.05
Infant Foods (0 to 12 Months)	0	0	0	0	0	0	0
Jams and Jellies	1.3	<0.01	0.01*	12.8	62	0.02	0.05*
Analogs and Substitutes for Meat, Poultry or Fish	<0.01	<0.01*	na	0.3	4	0.01*	0.04*
Milk, Evaporated and Condensed	0	0	0	0	0	0	0
Muffins and Quick Bread	0.9	<0.01*	na	5.2	19	0.03*	0.03*
Sauces, Gravies, and Condiments	4.4	0.01	0.02	49.5	229	0.01	0.04
Snacks	7.1	0.01	0.03	59.2	287	0.02	0.04
Sorbet and Sherbet	0.2	<0.01*	na	1.1	1	0.02*	0.02*
Soup	1.5	<0.01	0.01*	12.1	68	0.02	0.04*
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	0.2	<0.01*	na	5.4	28	0.01*	0.01*
Proposed Uses							
Bars	3.6	0.01	na	8.3	41	0.07	0.11*
Meal Replacement Shakes (milk-based and non-milk-based)	2.1	<0.01*	na	2.7	16	0.12*	0.23*
Dairy Beverages	31.5	0.05	0.13	72.9	357	0.06	0.13
Dairy Product Analogs	1.3	<0.01*	na	3.5	14	0.06*	0.09*

bw = body weight; n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table B-6 Estimated Daily Per Kilogram Body Weight Intake of scFOS from Individual Permitted and Proposed Food Uses by Female Adults Aged 20 Years and Older within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (mg/kg bw/day)		Consumer-Only Intake (mg/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	0.12	0.21	100	2,191	0.12	0.21
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.8	0.01	0.03	38.2	837	0.02	0.06
Beverages and Juices	27.4	0.03	0.06	92.0	2,032	0.04	0.07
Cakes	3.4	<0.01	0.01	28.7	649	0.01	0.03
Cheese	4.8	0.01	0.02	50.2	991	0.01	0.02
Cream	2.3	<0.01	0.01	11.4	191	0.02	0.05
Confectionery	1.7	<0.01	0.01	31.3	653	0.01	0.02
Cookies	3.8	<0.01	0.02	31.5	652	0.01	0.03
Crackers	3.3	<0.01	0.02	25.2	518	0.02	0.03
Dessert Toppings and Fillings	0.1	<0.01	na	1.9	34	0.01	0.01*
Hard Candy	0.3	<0.01	na	4.6	107	0.01	0.02
Ice Cream	3.2	<0.01	0.01	22.7	452	0.02	0.03
Infant Foods (0 to 12 Months)	<0.1	<0.01*	na	<0.1	3	0.01*	0.01*
Jams and Jellies	0.6	<0.01	<0.01	10.9	221	0.01	0.01
Analogs and Substitutes for Meat, Poultry or Fish	1.2	<0.01	na	2.6	46	0.05	0.23*
Milk, Evaporated and Condensed	0.2	<0.01	na	1.2	40	0.02	0.03*
Muffins and Quick Bread	0.9	<0.01	na	6.7	128	0.02	0.03
Sauces, Gravies, and Condiments	4.2	0.01	0.02	45.7	961	0.01	0.03
Snacks	4.2	<0.01	0.01	48.8	968	0.01	0.02
Sorbet and Sherbet	<0.1	<0.01*	na	0.5	12	0.01*	0.02*
Soup	1.9	<0.01	0.01	18.1	375	0.01	0.02
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	1.0	<0.01	0.01	19.2	335	0.01	0.01
Proposed Uses							
Bars	6.6	0.01	0.02	11.6	200	0.07	0.12
Meal Replacement Shakes (milk-based and non-milk-based)	4.2	<0.01	na	6.3	117	0.08	0.13
Dairy Beverages	15.6	0.02	0.06	48.4	1,081	0.04	0.08
Dairy Product Analogs	1.6	<0.01	na	7.5	141	0.03	0.05

bw = body weight; n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table B-7 Estimated Daily Per Kilogram Body Weight Intake of scFOS from Individual Permitted and Proposed Food Uses by Male Adults Aged 20 Years and Older within the U.S. (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (mg/kg bw/day)		Consumer-Only Intake (mg/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	0.13	0.24	99.9	1,968	0.13	0.24
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	8.0	0.01	0.04	37.5	710	0.03	0.06
Beverages and Juices	32.1	0.04	0.08	95.3	1,841	0.04	0.08
Cakes	2.9	<0.01	0.01	27.4	538	0.01	0.03
Cheese	4.9	0.01	0.02	53.4	856	0.01	0.03
Cream	2.2	<0.01	<0.01	10.4	172	0.03	0.05
Confectionery	1.3	<0.01	0.01	26.3	478	0.01	0.01
Cookies	3.1	<0.01	0.01	29.4	578	0.01	0.03
Crackers	2.2	<0.01	0.01	18.9	342	0.01	0.03
Dessert Toppings and Fillings	0.1	<0.01*	na	1.2	27	0.01*	0.02*
Hard Candy	0.4	<0.01	na	4.5	76	0.01	0.02*
Ice Cream	2.8	<0.01	0.01	20.9	409	0.02	0.03
Infant Foods (0 to 12 Months)	0	0	0	0	0	0	0
Jams and Jellies	0.8	<0.01	<0.01	13.2	224	0.01	0.01
Analogs and Substitutes for Meat, Poultry or Fish	1.5	<0.01	na	3.1	38	0.06	0.18*
Milk, Evaporated and Condensed	<0.1	<0.01*	na	0.5	18	0.01*	0.01*
Muffins and Quick Bread	0.6	<0.01	na	3.8	59	0.02	0.04*
Sauces, Gravies, and Condiments	4.5	0.01	0.02	51.2	939	0.01	0.03
Snacks	4.4	0.01	0.02	47.2	811	0.01	0.02
Sorbet and Sherbet	<0.1	<0.01*	na	0.2	8	0.02*	0.03*
Soup	1.5	<0.01	0.01	14.6	322	0.01	0.03
Toddler Foods (12 to 24 Months)	0	0	0	0	0	0	0
Yogurt	0.6	<0.01	<0.01	11.6	169	0.01	0.01
Proposed Uses							
Bars	6.3	0.01	0.03	13.4	164	0.06	0.12
Meal Replacement Shakes (milk-based and non-milk-based)	3.7	<0.01	na	5.7	87	0.08	0.15
Dairy Beverages	15.2	0.02	0.06	49.8	969	0.04	0.08
Dairy Product Analogs	1.1	<0.01	na	4.8	85	0.03	0.05

bw = body weight; n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Table B-8 Estimated Daily Per Kilogram Body Weight Intake of scFOS from Individual Permitted and Proposed Food Uses by the U.S. Population Aged 2 Years and Older (2015-2016 NHANES Data)

Food Use Category	% Contribution to Total Mean Intake	Per Capita Intake (mg/kg bw/day)		Consumer-Only Intake (mg/kg bw/day)			
		Mean	90 th Percentile	%	n	Mean	90 th Percentile
All	100	0.16	0.33	99.9	6,465	0.16	0.33
Permitted Uses							
Acidophilus Milk	0	0	0	0	0	0	0
Breakfast Cereals	7.7	0.01	0.04	42.1	2,873	0.03	0.06
Beverages and Juices	22.7	0.04	0.07	92.4	5,946	0.04	0.08
Cakes	3.2	0.01	0.02	29.0	1,926	0.02	0.04
Cheese	4.2	0.01	0.02	50.6	2,880	0.01	0.03
Cream	1.4	<0.01	na	8.8	405	0.03	0.05
Confectionery	1.8	<0.01	0.01	30.7	1,893	0.01	0.02
Cookies	3.9	0.01	0.02	33.4	2,152	0.02	0.04
Crackers	3.4	0.01	0.02	23.2	1,431	0.02	0.05
Dessert Toppings and Fillings	0.1	<0.01	na	2.1	135	0.01	0.02
Hard Candy	0.4	<0.01	na	5.4	400	0.01	0.03
Ice Cream	2.9	<0.01	0.02	22.6	1,453	0.02	0.04
Infant Foods (0 to 12 Months)	0.1	<0.01*	na	0.2	22	0.05*	0.10*
Jams and Jellies	0.9	<0.01	<0.01	13.1	768	0.01	0.02
Analogs and Substitutes for Meat, Poultry or Fish	0.9	<0.01	na	2.7	119	0.05	0.18
Milk, Evaporated and Condensed	0.1	<0.01	na	0.7	60	0.01	0.03*
Muffins and Quick Bread	0.7	<0.01	na	5.4	304	0.02	0.04
Sauces, Gravies, and Condiments	4.5	0.01	0.02	47.9	2,973	0.02	0.04
Snacks	5.0	0.01	0.02	51.7	3,226	0.02	0.03
Sorbet and Sherbet	0.1	<0.01	na	0.6	38	0.02	0.03*
Soup	1.5	<0.01	0.01	15.8	1,040	0.02	0.03
Toddler Foods (12 to 24 Months)	<0.1	<0.01*	na	<0.1	3	0.39*	0.42*
Yogurt	0.8	<0.01	<0.01	15.3	834	0.01	0.01
Proposed Uses							
Bars	5.4	0.01	0.03	12.2	584	0.07	0.14
Meal Replacement Shakes (milk-based and non-milk-based)	2.5	<0.01	na	4.9	241	0.08	0.14
Dairy Beverages	24.9	0.04	0.11	56.1	3,883	0.07	0.16
Dairy Product Analogs	1.2	<0.01	na	5.7	311	0.03	0.06

bw = body weight; n = sample size; na = not available; NHANES = National Health and Nutrition Examination Surveys; scFOS = short-chain Fructooligosaccharide; U.S. = United States.

* Indicates an intake estimate that may not be statistically reliable, as the sample size does not meet the minimum reporting requirements (mean n<30; 90th percentile n<80).

Appendix C
Representative Food Codes for Permitted and Proposed Food Uses of
scFOS in the U.S. (2015-2016 NHANES Data)

Representative Food Codes for Permitted and Proposed Food Uses of scFOS in the U.S. (2015-2016 NHANES Data)

Acidophilus Milk

[scFOS] = 0.4 g/100 g

- 11112120 Milk, acidophilus, low fat (1%)
- 11112130 Milk, acidophilus, reduced fat (2%)

Breakfast Cereals

[scFOS] = 2.5 g/100 g

- 56200300 Cereal, cooked, NFS
- 56200990 Grits, NS as to regular, quick, or instant, NS as to fat added in cooking
- 56201000 Grits, NS as to regular, quick, or instant, fat not added in cooking
- 56201040 Grits, NS as to regular, quick, or instant, fat added in cooking
- 56201050 Grits, regular or quick, made with water, NS as to fat added in cooking
- 56201051 Grits, regular or quick, made with water, fat not added in cooking
- 56201052 Grits, regular or quick, made with water, fat added in cooking
- 56201055 Grits, regular or quick, made with milk, NS as to fat added in cooking
- 56201056 Grits, regular or quick, made with milk, fat not added in cooking
- 56201057 Grits, regular or quick, made with milk, fat added in cooking
- 56201065 Grits, regular or quick, made with non-dairy milk, NS as to fat added in cooking
- 56201066 Grits, regular or quick, made with non-dairy milk, fat not added in cooking
- 56201067 Grits, regular or quick, made with non-dairy milk, fat added in cooking
- 56201090 Grits, with cheese, NS as to fat added in cooking
- 56201091 Grits, with cheese, fat not added in cooking
- 56201092 Grits, with cheese, fat added in cooking
- 56201210 Grits, instant, made with water, fat not added in cooking
- 56201220 Grits, instant, made with water, fat added in cooking
- 56201230 Grits, instant, made with water, NS as to fat added in cooking
- 56201340 Grits, instant, made with milk, fat added in cooking
- 56201342 Grits, instant, made with milk, fat not added in cooking
- 56201344 Grits, instant, made with milk, NS as to fat added in cooking
- 56201350 Grits, instant, made with non-dairy milk, NS as to fat added in cooking
- 56201355 Grits, instant, made with non-dairy milk, fat not added in cooking
- 56201360 Grits, instant, made with non-dairy milk, fat added in cooking
- 56201515 Cornmeal mush, NS as to fat added in cooking
- 56201516 Cornmeal mush, fat not added in cooking
- 56201517 Cornmeal mush, fat added in cooking
- 56201540 Cornmeal, Puerto Rican Style
- 56201550 Cornmeal dumpling
- 56201600 Masa harina, cooked
- 56202900 Oatmeal, from fast food, plain

56202905 Oatmeal, from fast food, maple flavored
56202910 Oatmeal, from fast food, fruit flavored
56202920 Oatmeal, from fast food, other flavors
56202960 Oatmeal, NS as to regular, quick, or instant, NS as to fat added in cooking
56203000 Oatmeal, NS as to regular, quick, or instant, fat not added in cooking
56203040 Oatmeal, NS as to regular, quick, or instant, fat added in cooking
56203055 Oatmeal, regular or quick, made with water, NS as to fat added in cooking
56203056 Oatmeal, regular or quick, made with water, fat not added in cooking
56203057 Oatmeal, regular or quick, made with water, fat added in cooking
56203065 Oatmeal, regular or quick, made with milk, NS as to fat added in cooking
56203066 Oatmeal, regular or quick, made with milk, fat not added in cooking
56203067 Oatmeal, regular or quick, made with milk, fat added in cooking
56203075 Oatmeal, regular or quick, made with non-dairy milk, NS as to fat added in cooking
56203076 Oatmeal, regular or quick, made with non-dairy milk, fat not added in cooking
56203077 Oatmeal, regular or quick, made with non-dairy milk, fat added in cooking
56203085 Oatmeal, instant, plain, made with water, NS as to fat added in cooking
56203086 Oatmeal, instant, plain, made with water, fat not added in cooking
56203087 Oatmeal, instant, plain, made with water, fat added in cooking
56203095 Oatmeal, instant, plain, made with milk, NS as to fat added in cooking
56203096 Oatmeal, instant, plain, made with milk, fat not added in cooking
56203097 Oatmeal, instant, plain, made with milk, fat added in cooking
56203105 Oatmeal, instant, plain, made with non-dairy milk, NS as to fat added in cooking
56203106 Oatmeal, instant, plain, made with non-dairy milk, fat not added in cooking
56203107 Oatmeal, instant, plain, made with non-dairy milk, fat added in cooking
56203125 Oatmeal, instant, maple flavored, NS as to fat added in cooking
56203130 Oatmeal, instant, maple flavored, fat not added in cooking
56203135 Oatmeal, instant, maple flavored, fat added in cooking
56203150 Oatmeal, instant, fruit flavored, NS as to fat added in cooking
56203155 Oatmeal, instant, fruit flavored, fat not added in cooking
56203160 Oatmeal, instant, fruit flavored, fat added in cooking
56203170 Oatmeal, instant, other flavors, NS as to fat added in cooking
56203175 Oatmeal, instant, other flavors, fat not added in cooking
56203180 Oatmeal, instant, other flavors, fat added in cooking
56203500 Oatmeal, reduced sugar, plain, NS as to fat added in cooking
56203510 Oatmeal, reduced sugar, plain, fat not added in cooking
56203520 Oatmeal, reduced sugar, plain, fat added in cooking
56203540 Oatmeal, made with milk and sugar, Puerto Rican style
56203550 Oatmeal, reduced sugar, flavored, NS as to fat added in cooking
56203555 Oatmeal, reduced sugar, flavored, fat not added in cooking
56203560 Oatmeal, reduced sugar, flavored, fat added in cooking
56203600 Oatmeal, multigrain, NS as to fat added in cooking
56203610 Oatmeal, multigrain, fat not added in cooking
56203620 Oatmeal, multigrain, fat added in cooking

56205050 Rice, cream of, cooked, fat not added in cooking
56205080 Rice, creamed, made with milk and sugar, Puerto Rican style
56205090 Rice, cream of, cooked, fat added in cooking
56205092 Rice, cream of, cooked, NS as to fat added in cooking
56205094 Rice, cream of, cooked, made with milk
56206990 Cream of wheat, NS as to regular, quick, or instant, NS as to fat added in cooking
56207000 Cream of wheat, NS as to regular, quick, or instant, fat not added in cooking
56207005 Cream of wheat, NS as to regular, quick, or instant, fat added in cooking
56207015 Cream of wheat, regular or quick, made with water, NS as to fat added in cooking
56207016 Cream of wheat, regular or quick, made with water, fat not added in cooking
56207017 Cream of wheat, regular or quick, made with water, fat added in cooking
56207021 Cream of wheat, regular or quick, made with milk, NS as to fat added in cooking
56207022 Cream of wheat, regular or quick, made with milk, fat not added in cooking
56207023 Cream of wheat, regular or quick, made with milk, fat added in cooking
56207025 Cream of wheat, regular or quick, made with non-dairy milk, NS as to fat added in cooking
56207026 Cream of wheat, regular or quick, made with non-dairy milk, fat not added in cooking
56207027 Cream of wheat, regular or quick, made with non-dairy milk, fat added in cooking
56207030 Cream of wheat, instant, made with water, fat not added in cooking
56207050 Wheat, cream of, cooked, made with milk and sugar, Puerto Rican style
56207060 Cream of wheat, instant, made with water, fat added in cooking
56207070 Cream of wheat, instant, made with water, NS as to fat added in cooking
56207094 Cream of wheat, instant, made with milk, fat added in cooking
56207095 Cream of wheat, instant, made with milk, fat not added in cooking
56207096 Cream of wheat, instant, made with milk, NS as to fat added in cooking
56207101 Cream of wheat, instant, made with non-dairy milk, NS as to fat added in cooking
56207102 Cream of wheat, instant, made with non-dairy milk, fat not added in cooking
56207103 Cream of wheat, instant, made with non-dairy milk, fat added in cooking
56207190 Whole wheat cereal, cooked, NS as to fat added in cooking
56207200 Whole wheat cereal, cooked, fat not added in cooking
56207210 Whole wheat cereal, cooked, fat added in cooking
56207370 Wheat cereal, chocolate flavored, cooked
56208500 Oat bran cereal, cooked, fat not added in cooking
56208510 Oat bran cereal, cooked, fat added in cooking
56208520 Oat bran cereal, cooked, NS as to fat added in cooking
56209000 Cream of rye
57000100 Cereal, oat, NFS
57100100 Cereal, ready-to-eat, NFS
57101000 Cereal (Kellogg's All-Bran)
57102000 Cereal (Alpen)
57103000 Cereal (Post Alpha-Bits)
57103100 Cereal (General Mills Cheerios Apple Cinnamon)
57104000 Cereal (Kellogg's Apple Jacks)
57106050 Cereal (Post Great Grains Banana Nut Crunch)

57106060 Cereal (General Mills Cheerios Banana Nut)
57106100 Cereal (General Mills Basic 4)
57106250 Cereal (General Mills Kix Berry Berry)
57106260 Cereal (General Mills Cheerios Berry Burst)
57106530 Cereal (Post Selects Blueberry Morning)
57107000 Cereal (General Mills Boo Berry)
57110000 Cereal (Kellogg's All-Bran Bran Buds)
57117000 Cereal (Quaker Cap'n Crunch)
57117500 Cereal (Quaker Christmas Crunch)
57119000 Cereal (Quaker Cap'n Crunch's Crunchberries)
57120000 Cereal (Quaker Cap'n Crunch's Peanut Butter Crunch)
57123000 Cereal (General Mills Cheerios)
57124030 Cereal (General Mills Chex Chocolate)
57124050 Cereal (General Mills Chex Cinnamon)
57124100 Cereal (General Mills Cheerios Chocolate)
57124200 Cereal, chocolate flavored, frosted, puffed corn
57124300 Cereal (General Mills Lucky Charms Chocolate)
57124900 Cereal (Kellogg's Cinnabon)
57125000 Cereal (General Mills Cinnamon Toast Crunch)
57125010 Cereal (General Mills 25% Less Sugar Cinnamon Toast Crunch)
57125900 Cereal (General Mills Honey Nut Clusters)
57126000 Cereal (Kellogg's Cocoa Krispies)
57127000 Cereal (Post Cocoa Pebbles)
57128000 Cereal (General Mills Cocoa Puffs)
57128005 Cereal (General Mills 25% Less Sugar Cocoa Puffs)
57130000 Cereal (General Mills Cookie Crisp)
57131000 Cereal (Quaker Corn Bran Crunch)
57132000 Cereal (General Mills Chex Corn)
57134000 Cereal, corn flakes
57135000 Cereal (Kellogg's Corn Flakes)
57137000 Cereal, corn puffs
57139000 Cereal (General Mills Count Chocula)
57143000 Cereal (Kellogg's Cracklin' Oat Bran)
57143500 Cereal (Post Great Grains, Cranberry Almond Crunch)
57148000 Cereal (Kellogg's Crispix)
57148500 Cereal, crispy brown rice
57151000 Cereal, crispy rice
57201900 Cereal (General Mills Dora The Explorer)
57206000 Cereal (Famila)
57206700 Cereal (General Mills Fiber One)
57206705 Cereal (General Mills Fiber One Caramel Delight)
57206710 Cereal (General Mills Fiber One Honey Clusters)
57206715 Cereal (General Mills Fiber One Raisin Bran Clusters)

57206800 Cereal (Healt Valley Fiber 7 Flakes)
57207000 Cereal, bran flakes
57208000 Cereal (Kellogg's All-Bran Complete Wheat Flakes)
57209000 Cereal (Post Bran Flakes)
57211000 Cereal (General Mills Frankenberry)
57213000 Cereal (Kellogg's Froot Loops)
57213010 Cereal (Kellogg's Froot Loops Marshmallow)
57213850 Cereal (General Mills Cheerios Frosted)
57214000 Cereal (Kellogg's Frosted Mini-Wheats)
57216000 Cereal, frosted rice
57218000 Cereal (Kellogg's Frosted Krispies)
57219000 Cereal, fruit and fiber
57221000 Cereal, fiber and fruit
57221700 Cereal, fruit rings
57221800 Cereal, fruit whirls
57221810 Cereal (General Mills Cheerios Fruity)
57223000 Cereal (Post Fruity Pebbles)
57224000 Cereal (General Mills Golden Grahams)
57227000 Cereal, granola
57229000 Cereal (Kellogg's Low Fat Granola)
57229500 Cereal (Kellogg's Low Fat Granola with Raisins)
57230000 Cereal (Post Grape-Nuts)
57231000 Cereal (Post Grape-Nuts Flakes)
57231200 Cereal (Post Great Grains Raisins, Dates, and Pecans)
57231250 Cereal (Post Great Grains Double Pecan Whole Grain Cereal)
57237100 Cereal (Post Honey Bunches of Oats Honey Roasted)
57237200 Cereal (Post Honey Bunches of Oats with Vanilla Bunches)
57237300 Cereal (Post Honey Bunches of Oats with Almonds)
57237310 Cereal (Post Honey Bunches of Oats wth Pecan Bunches)
57237900 Cereal (Post Honey Bunches of Oats Just Bunches)
57238000 Cereal (Post Honeycomb)
57239100 Cereal (Kellogg's Honey Crunch Corn Flakes)
57240100 Cereal (General Mills Chex Honey Nut)
57241000 Cereal (General Mills Cheerios Honey Nut)
57241200 Cereal (Post Shredded Wheat Honey Nut)
57243000 Cereal (Kellogg's Honey Smacks)
57301500 Cereal (Kashi 7 Whole Grain Puffs)
57301505 Cereal (Kashi Autumn Wheat)
57301510 Cereal (Kashi GOLEAN)
57301511 Cereal (Kashi GOLEAN Crunch)
57301512 Cereal (Kashi GOLEAN Crunch Honey Almond Flax)
57301520 Cereal (Kashi Good Friends)
57301530 Cereal (Kashi Heart to Heart Honey Toasted Oat)

57301535 Cereal (Kashi Heart to Heart Oat Flakes and Blueberry Clusters)
57301540 Cereal (Kashi Honey Sunshine Squares)
57302100 Cereal (Quaker King Vitaman)
57303100 Cereal (General Mills Kix)
57303105 Cereal (General Mills Honey Kix)
57303200 Cereal (Kellogg's Krave)
57304100 Cereal (Quaker Life)
57305100 Cereal (General Mills Lucky Charms)
57305150 Cereal, frosted oat cereal with marshmallows
57305160 Cereal (Malt-O-Meal Blueberry Muffin Tops)
57305165 Cereal (Malt-O-Meal Cinnamon Toasters)
57305170 Cereal (Malt-O-Meal Coco-Roos)
57305174 Cereal (Malt-O-Meal Colossal Crunch)
57305175 Cereal (Malt-O-Meal Cocoa Dyno-Bites)
57305180 Cereal (Malt-O-Meal Corn Bursts)
57305200 Cereal (Malt-O-Meal Crispy Rice)
57305210 Cereal (Malt-O-Meal Frosted Flakes)
57305215 Cereal (Malt-O-Meal Frosted Mini Spooners)
57305300 Cereal (Malt-O-Meal Fruity Dyno-Bites)
57305400 Cereal (Malt-O-Meal Honey Graham Squares)
57305500 Cereal (Malt-O-Meal Honey Nut Toasty O's)
57305600 Cereal (Malt-O-Meal Marshmallow Mateys)
57306130 Cereal (Malt-O-Meal Raisin Bran)
57306500 Cereal (Malt-O-Meal Golden Puffs)
57306700 Cereal (Malt-O-Meal Toasted Oat Cereal)
57306800 Cereal (Malt-O-Meal Tootie Fruities)
57307010 Cereal (Post Maple Pecan Crunch)
57307500 Cereal, millet, puffed
57308190 Cereal, muesli
57308400 Cereal (General Mills Cheerios Multigrain)
57309100 Cereal (Nature Valley Granola)
57316200 Cereal, nutty nuggets
57316300 Cereal (Health Valley Oat Bran Flakes)
57316380 Cereal (General Mills Cheerios Oat Cluster Crunch)
57316385 Cereal (General Mills Cheerios Protein)
57316450 Cereal (General Mills Oatmeal Crisp with Almonds)
57316500 Cereal (General Mills Oatmeal Crisp with Raisins)
57316710 Cereal (Quaker Honey Graham Oh's)
57320500 Cereal (Quaker Granola with Oats, Honey, and Raisins)
57321900 Cereal (Nature's Path Organic Flax Plus)
57323000 Cereal (Quaker Sweet Crunch)
57325000 Cereal (Kellogg's Product 19)
57326000 Cereal (Barbara's Puffins)

57327450 Cereal (Quaker Toasted Oat Bran)
57327500 Cereal (Quaker Oatmeal Squares)
57328000 Cereal (Quaker Quisp)
57329000 Cereal, raisin bran
57330000 Cereal (Kellogg's Raisin Bran)
57330010 Cereal (Kellogg's Raisin Bran Crunch)
57331000 Cereal (Post Raisin Bran)
57332050 Cereal (General Mills Total Raisin Bran)
57332100 Cereal (General Mills Raisin Nut Bran)
57335550 Cereal (General Mills Reese's Puffs)
57336000 Cereal (General Mills Chex Rice)
57337000 Cereal, rice flakes
57339000 Cereal (Kellogg's Rice Krispies)
57339500 Cereal (Kellogg's Rice Krispies Treats Cereal)
57340000 Cereal, puffed rice
57341000 Cereal (Post Shredded Wheat'n Bran)
57341200 Cereal (Kellogg's Smart Start Strong)
57344000 Cereal (Kellogg's Special K)
57344001 Cereal (Kellogg's Special K Blueberry)
57344005 Cereal (Kellogg's Special K Chocolatey Delight)
57344007 Cereal (Kellogg's Special K Low Fat Granola)
57344010 Cereal (Kellogg's Special K Red Berries)
57344015 Cereal (Kellogg's Special K Fruit & Yogurt)
57344020 Cereal (Kellogg's Special K Vanilla Almond)
57344025 Cereal (Kellogg's Special K Cinnamon Pecan)
57347000 Cereal (Kellogg's Corn Pops)
57348000 Cereal, frosted corn flakes
57349000 Cereal (Kellogg's Frosted Flakes)
57349020 Cereal (Kellogg's Frosted Flakes, Reduced Sugar)
57355000 Cereal (Post Golden Crisp)
57401100 Cereal, toasted oat
57406100 Cereal (General Mills Total)
57407100 Cereal (General Mills Trix)
57407110 Cereal (General Mills 25% Less Sugar Trix)
57408100 Cereal (Uncle Sam)
57409100 Cereal (Post Waffle Crisp)
57410000 Cereal (Weetabix Whole Grain)
57411000 Cereal (General Mills Chex Wheat)
57412000 Wheat germ, plain
57413000 Wheat germ, with sugar and honey
57416000 Cereal, puffed wheat, plain
57416010 Cereal, puffed wheat, sweetened
57417000 Cereal (Post Shredded Wheat)

57418000 Cereal (General Mills Wheaties)
57419000 Cereal (General Mills Cheerios Yogurt Burst)
58174000 Upma, Indian breakfast dish
75217490 Hominy, cooked, NS as to fat added in cooking
75217500 Hominy, cooked, fat not added in cooking
75217520 Hominy, cooked, fat added in cooking

Beverages and Juices

[scFOS] = 0.4 g/100 g

11553100 Fruit smoothie, NFS
61201020 Grapefruit juice, 100%, NS as to form
61201220 Grapefruit juice, 100%, canned, bottled or in a carton
61201225 Grapefruit juice, 100%, with calcium added
61201620 Grapefruit juice, 100%, frozen, reconstituted
61204000 Lemon juice, 100%, NS as to form
61204200 Lemon juice, 100%, canned or bottled
61207000 Lime juice, 100%, NS as to form
61207200 Lime juice, 100%, canned or bottled
61210000 Orange juice, 100%, NFS
61210220 Orange juice, 100%, canned, bottled or in a carton
61210250 Orange juice, 100%, with calcium added, canned, bottled or in a carton
61210620 Orange juice, 100%, frozen, reconstituted
61210820 Orange juice, 100%, with calcium added, frozen, reconstituted
61213220 Tangerine juice, 100%
61213800 Fruit juice blend, citrus, 100% juice
61213900 Fruit juice blend, citrus, 100% juice, with calcium added
64100100 Fruit juice, NFS
64100110 Fruit juice blend, 100% juice
64100200 Cranberry juice blend, 100% juice
64100220 Cranberry juice blend, 100% juice, with calcium added
64101010 Apple cider
64104010 Apple juice, 100%
64104030 Apple juice, 100%, with calcium added
64104600 Blackberry juice, 100%
64105400 Cranberry juice, 100%, not a blend
64116020 Grape juice, 100%
64116060 Grape juice, 100%, with calcium added
64120010 Papaya juice, 100%
64121000 Passion fruit juice, 100%
64124020 Pineapple juice, 100%
64126000 Pomegranate juice, 100%
64132010 Prune juice, 100%
64132500 Strawberry juice, 100%

64133100 Watermelon juice, 100%
64134015 Fruit smoothie, with whole fruit, no dairy
64134020 Fruit smoothie, with whole fruit, no dairy, added protein
64134030 Fruit smoothie juice drink, no dairy
64134100 Fruit smoothie, light
64134200 Fruit smoothie, bottled
64200100 Fruit nectar, NFS
64201010 Apricot nectar
64201500 Banana nectar
64202010 Cantaloupe nectar
64203020 Guava nectar
64204010 Mango nectar
64205010 Peach nectar
64210010 Papaya nectar
64213010 Passion fruit nectar
64215010 Pear nectar
64221010 Soursop, nectar
73105010 Carrot juice, 100%
74301100 Tomato juice, 100%
74301150 Tomato juice, 100%, low sodium
74302000 Tomato juice cocktail
74303000 Tomato and vegetable juice, 100%
74303100 Tomato and vegetable juice, 100%, low sodium
75132000 Mixed vegetable juice
75132100 Celery juice
75200700 Aloe vera juice drink
78101000 Vegetable and fruit juice, 100% juice, with high vitamin C
78101100 Fruit and vegetable smoothie
78101110 Fruit and vegetable smoothie, added protein
78101120 Fruit and vegetable smoothie, bottled
92100000 Coffee, NS as to type
92100500 Coffee, NS as to brewed or instant
92101000 Coffee, brewed
92101500 Coffee, brewed, blend of regular and decaffeinated
92101600 Coffee, Turkish
92101610 Coffee, espresso
92101630 Coffee, espresso, decaffeinated
92101700 Coffee, brewed, flavored
92101800 Coffee, Cuban
92101810 Coffee, macchiato
92101820 Coffee, macchiato, sweetened
92101850 Coffee, cafe con leche
92101851 Coffee, cafe con leche, decaffeinated

92101900 Coffee, Latte
92101901 Coffee, Latte, nonfat
92101903 Coffee, Latte, with non-dairy milk
92101904 Coffee, Latte, flavored
92101905 Coffee, Latte, nonfat, flavored
92101906 Coffee, Latte, with non-dairy milk, flavored
92101910 Coffee, Latte, decaffeinated
92101911 Coffee, Latte, decaffeinated, nonfat
92101913 Coffee, Latte, decaffeinated, with non-dairy milk
92101917 Coffee, Latte, decaffeinated, flavored
92101918 Coffee, Latte, decaffeinated, nonfat, flavored
92101919 Coffee, Latte, decaffeinated, with non-dairy milk, flavored
92101920 Frozen coffee drink
92101921 Frozen coffee drink, nonfat
92101923 Frozen coffee drink, with non-dairy milk
92101925 Frozen coffee drink, with whipped cream
92101926 Frozen coffee drink, nonfat, with whipped cream
92101928 Frozen coffee drink, with non-dairy milk and whipped cream
92101930 Frozen coffee drink, decaffeinated
92101931 Frozen coffee drink, decaffeinated, nonfat
92101933 Frozen coffee drink, decaffeinated, with non-dairy milk
92101935 Frozen coffee drink, decaffeinated, with whipped cream
92101936 Frozen coffee drink, decaffeinated, nonfat, with whipped cream
92101938 Frozen coffee drink, decaffeinated, with non-dairy milk and whipped cream
92101950 Coffee, Cafe Mocha
92101955 Coffee, Cafe Mocha, nonfat
92101960 Coffee, Cafe Mocha, with non-dairy milk
92101965 Coffee, Cafe Mocha, decaffeinated
92101970 Coffee, Cafe Mocha, decaffeinated, nonfat
92101975 Coffee, Cafe Mocha, decaffeinated, with non-dairy milk
92102000 Frozen mocha coffee drink
92102010 Frozen mocha coffee drink, nonfat
92102020 Frozen mocha coffee drink, with non-dairy milk
92102030 Frozen mocha coffee drink, with whipped cream
92102040 Frozen mocha coffee drink, nonfat, with whipped cream
92102050 Frozen mocha coffee drink, with non-dairy milk and whipped cream
92102060 Frozen mocha coffee drink, decaffeinated
92102070 Frozen mocha coffee drink, decaffeinated, nonfat
92102080 Frozen mocha coffee drink, decaffeinated, with non-dairy milk
92102090 Frozen mocha coffee drink, decaffeinated, with whipped cream
92102100 Frozen mocha coffee drink, decaffeinated, nonfat, with whipped cream
92102110 Frozen mocha coffee drink, decaffeinated, with non-dairy milk and whipped cream
92102400 Iced Coffee, brewed

92102401 Iced Coffee, brewed, decaffeinated
 92102450 Iced Coffee, pre-lightened and pre-sweetened
 92102500 Coffee, Iced Latte
 92102501 Coffee, Iced Latte, nonfat
 92102502 Coffee, Iced Latte, with non-dairy milk
 92102503 Coffee, Iced Latte, flavored
 92102504 Coffee, Iced Latte, nonfat, flavored
 92102505 Coffee, Iced Latte, with non-dairy milk, flavored
 92102510 Coffee, Iced Latte, decaffeinated
 92102511 Coffee, Iced Latte, decaffeinated, nonfat
 92102512 Coffee, Iced Latte, decaffeinated, with non-dairy milk
 92102513 Coffee, Iced Latte, decaffeinated, flavored
 92102514 Coffee, Iced Latte, decaffeinated, nonfat, flavored
 92102515 Coffee, Iced Latte, decaffeinated, with non-dairy milk, flavored
 92102600 Coffee, Iced Cafe Mocha
 92102601 Coffee, Iced Cafe Mocha, nonfat
 92102602 Coffee, Iced Cafe Mocha, with non-dairy milk
 92102610 Coffee, Iced Cafe Mocha, decaffeinated
 92102611 Coffee, Iced Cafe Mocha, decaffeinated, nonfat
 92102612 Coffee, Iced Cafe Mocha, decaffeinated, with non-dairy milk
 92103000 Coffee, instant, reconstituted
 92104000 Coffee, instant, 50% less caffeine, reconstituted
 92111000 Coffee, NS as to brewed or instant, decaffeinated
 92111010 Coffee, brewed, decaffeinated
 92114000 Coffee, instant, decaffeinated, reconstituted
 92121000 Coffee, instant, pre-lightened and pre-sweetened with sugar, reconstituted
 92121001 Coffee, instant, decaffeinated, pre-lightened and pre-sweetened with sugar, reconstituted
 92121010 Coffee, instant, pre-sweetened with sugar, reconstituted
 92121020 Coffee, mocha, instant, pre-lightened and pre-sweetened with sugar, reconstituted
 92121030 Coffee, mocha, instant, pre-lightened and pre-sweetened with low calorie sweetener, reconstituted
 92121040 Coffee, instant, pre-lightened and pre-sweetened with low calorie sweetener, reconstituted
 92121041 Coffee, instant, decaffeinated, pre-lightened and pre-sweetened with low calorie sweetener, reconstituted
 92121050 Coffee, mocha, instant, decaffeinated, pre-lightened and pre-sweetened with low calorie sweetener, reconstituted
 92130000 Coffee, pre-lightened and pre-sweetened with sugar
 92130001 Coffee, decaffeinated, pre-lightened and pre-sweetened with sugar
 92130005 Coffee, pre-lightened and pre-sweetened with low calorie sweetener
 92130006 Coffee, decaffeinated, pre-lightened and pre-sweetened with low calorie sweetener
 92130010 Coffee, pre-lightened
 92130011 Coffee, decaffeinated, pre-lightened
 92130020 Coffee, pre-sweetened with sugar
 92130021 Coffee, decaffeinated, pre-sweetened with sugar

92130030 Coffee, pre-sweetened with low calorie sweetener
92130031 Coffee, decaffeinated, pre-sweetened with low calorie sweetener
92152000 Coffee and chicory, brewed
92152010 Coffee and chicory, brewed, decaffeinated
92161000 Coffee, Cappuccino
92161001 Coffee, Cappuccino, nonfat
92161002 Coffee, Cappuccino, with non-dairy milk
92162000 Coffee, Cappuccino, decaffeinated
92162001 Coffee, Cappuccino, decaffeinated, nonfat
92162002 Coffee, Cappuccino, decaffeinated, with non-dairy milk
92171000 Coffee, bottled/canned
92171010 Coffee, bottled/canned, light
92305010 Tea, iced, instant, black, unsweetened
92305040 Tea, iced, instant, black, pre-sweetened with sugar
92305050 Tea, iced, instant, black, decaffeinated, pre-sweetened with sugar
92305090 Tea, iced, instant, black, pre-sweetened with low calorie sweetener
92305110 Tea, iced, instant, black, decaffeinated, pre-sweetened with low calorie sweetener
92305180 Tea, iced, instant, black, decaffeinated, unsweetened
92305900 Tea, iced, instant, green, unsweetened
92305910 Tea, iced, instant, green, pre-sweetened with sugar
92305920 Tea, iced, instant, green, pre-sweetened with low calorie sweetener
92307500 Iced Tea / Lemonade juice drink
92307510 Iced Tea / Lemonade juice drink, light
92307520 Iced Tea / Lemonade juice drink, diet
92309000 Tea, iced, bottled, black
92309010 Tea, iced, bottled, black, decaffeinated
92309020 Tea, iced, bottled, black, diet
92309030 Tea, iced, bottled, black, decaffeinated, diet
92309040 Tea, iced, bottled, black, unsweetened
92309050 Tea, iced, bottled, black, decaffeinated, unsweetened
92309500 Tea, iced, bottled, green
92309510 Tea, iced, bottled, green, diet
92309520 Tea, iced, bottled, green, unsweetened
92400000 Soft drink, NFS
92400100 Soft drink, NFS, diet
92410110 Carbonated water, sweetened
92410210 Carbonated water, unsweetened
92410250 Carbonated water, sweetened, with low-calorie or no-calorie sweetener
92410310 Soft drink, cola
92410315 Soft drink, cola, reduced sugar
92410320 Soft drink, cola, diet
92410340 Soft drink, cola, decaffeinated
92410350 Soft drink, cola, decaffeinated, diet

92410360 Soft drink, pepper type
92410370 Soft drink, pepper type, diet
92410390 Soft drink, pepper type, decaffeinated
92410400 Soft drink, pepper type, decaffeinated, diet
92410410 Soft drink, cream soda
92410420 Soft drink, cream soda, diet
92410510 Soft drink, fruit flavored, caffeine free
92410520 Soft drink, fruit flavored, diet, caffeine free
92410550 Soft drink, fruit flavored, caffeine containing
92410560 Soft drink, fruit flavored, caffeine containing, diet
92410610 Soft drink, ginger ale
92410620 Soft drink, ginger ale, diet
92410710 Soft drink, root beer
92410720 Soft drink, root beer, diet
92410810 Soft drink, chocolate flavored
92410820 Soft drink, chocolate flavored, diet
92411510 Soft drink, cola, fruit or vanilla flavored
92411520 Soft drink, cola, chocolate flavored
92411610 Soft drink, cola, fruit or vanilla flavored, diet
92411620 Soft drink, cola, chocolate flavored, diet
92432000 Fruit juice drink, citrus, carbonated
92433000 Fruit juice drink, noncitrus, carbonated
92510610 Fruit juice drink
92510650 Tamarind drink
92510720 Fruit punch, made with fruit juice and soda
92510730 Fruit punch, made with soda, fruit juice, and sherbet or ice cream
92510955 Lemonade, fruit juice drink
92510960 Lemonade, fruit flavored drink
92511015 Fruit flavored drink
92511250 Fruit juice beverage, 40-50% juice, citrus
92512050 Frozen daiquiri mix, from frozen concentrate, reconstituted
92512090 Pina Colada, nonalcoholic
92512110 Margarita mix, nonalcoholic
92513000 Fruit flavored smoothie drink, frozen, no dairy
92513010 Fruit flavored smoothie drink, frozen, light, no dairy
92530410 Fruit flavored drink, with high vitamin C
92530510 Cranberry juice drink, with high vitamin C
92530610 Fruit juice drink, with high vitamin C
92530950 Vegetable and fruit juice drink, with high vitamin C
92531030 Fruit juice drink (Sunny D)
92541010 Fruit flavored drink, powdered, reconstituted
92542000 Fruit flavored drink, with high vitamin C, powdered, reconstituted
92550030 Fruit juice drink, with high vitamin C, light

92550035 Fruit juice drink, light
92550040 Fruit juice drink, diet
92550110 Cranberry juice drink, with high vitamin C, light
92550200 Grape juice drink, light
92550350 Orange juice beverage, 40-50% juice, light
92550360 Apple juice beverage, 40-50% juice, light
92550370 Lemonade, fruit juice drink, light
92550380 Pomegranate juice beverage, 40-50% juice, light
92550400 Vegetable and fruit juice drink, with high vitamin C, diet
92550405 Vegetable and fruit juice drink, with high vitamin C, light
92550610 Fruit flavored drink, with high vitamin C, diet
92550620 Fruit flavored drink, diet
92552000 Fruit flavored drink, with high vitamin C, powdered, reconstituted, diet
92552010 Fruit flavored drink, powdered, reconstituted, diet
92552020 Fruit juice drink, reduced sugar (Sunny D)
92552030 Fruit juice drink (Capri Sun)
92582100 Fruit juice drink, with high vitamin C, plus added calcium
92582110 Fruit juice drink, added calcium (Sunny D)
92610020 Horchata beverage, made with water
92611010 Oatmeal beverage with water
92612010 Sugar cane beverage
92613010 Cornmeal beverage
94100200 Water, bottled, sweetened, with low calorie sweetener
94100300 Water, bottled, flavored (Capri Sun Roarin' Waters)
94210100 Water, bottled, flavored (Propel Water)
94210200 Water, bottled, flavored (Glaceau Vitamin Water)
94210300 Water, bottled, flavored (SoBe Life Water)
94220215 Water, bottled, flavored, sugar free (Glaceau Vitamin Water)
94220310 Water, bottled, flavored, sugar free (SoBe)
95310200 Energy drink (Full Throttle)
95310400 Energy drink (Monster)
95310500 Energy drink (Mountain Dew AMP)
95310550 Energy drink (No Fear)
95310555 Energy drink (No Fear Motherload)
95310560 Energy drink (NOS)
95310600 Energy drink (Red Bull)
95310700 Energy drink (Rockstar)
95310750 Energy drink (SoBe Energize Energy Juice Drink)
95310800 Energy drink (Vault)
95311000 Energy Drink
95312400 Energy drink, low calorie (Monster)
95312500 Energy drink, sugar free (Mountain Dew AMP)
95312550 Energy drink, sugar free (No Fear)

- 95312555 Energy drink, sugar-free (NOS)
- 95312560 Energy drink (Ocean Spray Cran-Energy Juice Drink)
- 95312600 Energy drink, sugar-free (Red Bull)
- 95312700 Energy drink, sugar free (Rockstar)
- 95312800 Energy drink, sugar free (Vault)
- 95312900 Energy drink (XS)
- 95312905 Energy drink (XS Gold Plus)
- 95313200 Energy drink, sugar free
- 95320200 Sports drink (Gatorade G)
- 95320500 Sports drink (Powerade)
- 95321000 Sports drink, NFS
- 95322200 Sports drink, low calorie (Gatorade G2)
- 95322500 Sports drink, low calorie (Powerade Zero)
- 95323000 Sports drink, low calorie
- 95330100 Fluid replacement, electrolyte solution
- 95330500 Fluid replacement, 5% glucose in water
- 95342000 Fruit juice, acai blend

Adjusted for not being reconstituted, 1 cup of concentrate to 3 cups of water
 [scFOS] = 1.6 g/100 g

- 61210720 Orange juice, 100%, frozen, not reconstituted
- 92511000 Lemonade, frozen concentrate, not reconstituted
- 92512040 Frozen daiquiri mix, frozen concentrate, not reconstituted

Adjusted for not being reconstituted, 26 g of powder to 240 mL of water
 [scFOS] = 4.09 g/100 g

- 92900100 Fruit flavored drink, with high vitamin C, powdered, not reconstituted
- 92900110 Fruit flavored drink, powdered, not reconstituted
- 92900200 Fruit flavored drink, powdered, not reconstituted, diet

Adjusted for not being reconstituted, 22 g of powder to 218 mL of water
 [scFOS] = 4.36 g/100 g

- 92192000 Coffee, mocha, instant, pre-lightened and pre-sweetened with sugar, not reconstituted
- 92192030 Coffee, mocha, instant, pre-lightened and pre-sweetened with low calorie sweetener, not reconstituted
- 92192040 Coffee, mocha, instant, decaffeinated, pre-lightened and pre-sweetend with low calorie sweetener, not reconstituted

Adjusted for not being reconstituted, 16 g of powder to 240 mL of water
 [scFOS] = 6.4 g/100 g

- 92307000 Tea, iced, instant, black, unsweetened, dry
- 92307400 Tea, iced, instant, black, pre-sweetened, dry

Adjusted for not being reconstituted, 32 g of powder to 500 mL of water
[scFOS] = 6.65 g/100 g

92900300 Sports drink, dry concentrate, not reconstituted

Adjusted for not being reconstituted, 3 g of powder to 360 mL of water
[scFOS] = 48.4 g/100 g

- 92191100 Coffee, instant, not reconstituted
- 92191105 Coffee, instant, 50% less caffeine, not reconstituted
- 92191200 Coffee, instant, decaffeinated, not reconstituted
- 92191400 Coffee, instant, pre-sweetened with sugar, not reconstituted
- 92193000 Coffee, instant, pre-lightened and pre-sweetened with sugar, not reconstituted
- 92193005 Coffee, instant, decaffeinated, pre-lightened and pre-sweetened with sugar, not reconstituted
- 92193020 Coffee, instant, pre-lightened and pre-sweetened with low calorie sweetener, not reconstituted
- 92193025 Coffee, instant, decaffeinated, pre-lightened and pre-sweetened with low calorie sweetener, not reconstituted

Cakes

[scFOS] = 1.8 g/100 g

- 14630200 Cheese souffle
- 41210000 Bean cake
- 51160000 Roll, sweet, no frosting
- 51160100 Roll, sweet, cinnamon bun, no frosting
- 51160110 Roll, sweet, cinnamon bun, frosted
- 51161020 Roll, sweet, with fruit, frosted
- 51161030 Roll, sweet, with fruit, frosted, diet
- 51161050 Roll, sweet, frosted
- 51161250 Pan Dulce, no topping
- 51165000 Coffee cake, yeast type
- 51166000 Croissant
- 51166100 Croissant, cheese
- 51166200 Croissant, chocolate
- 51166500 Croissant, fruit
- 51167000 Brioche
- 52105100 Scone
- 52105200 Scone, with fruit
- 53100100 Cake or cupcake, NS as to type
- 53101100 Cake, angel food, without icing or filling
- 53101200 Cake, angel food, with icing or filling
- 53101250 Cake, angel food, with fruit and icing or filling
- 53102100 Cake or cupcake, applesauce, without icing or filling
- 53102200 Cake or cupcake, applesauce, with icing or filling

53102600 Cake or cupcake, banana, without icing or filling
53102700 Cake or cupcake, banana, with icing or filling
53102800 Cake or cupcake, Black Forest
53103000 Cake, Boston cream pie
53104100 Cake or cupcake, carrot, without icing or filling
53104260 Cake or cupcake, carrot, with icing or filling
53104300 Cake, carrot, diet
53104400 Cake or cupcake, coconut, with icing or filling
53104500 Cheesecake
53104550 Cheesecake with fruit
53104600 Cheesecake, chocolate
53105270 Cake or cupcake, chocolate, devil's food or fudge, with icing or filling
53105275 Cake or cupcake, chocolate, devil's food or fudge, without icing or filling
53105300 Cake or cupcake, German chocolate, with icing or filling
53105500 Cake, chocolate, with icing, diet
53106500 Cake, cream, without icing or topping
53108200 Snack cake, chocolate, with icing or filling
53108220 Snack cake, chocolate, with icing or filling, reduced fat and calories
53109200 Snack cake, not chocolate, with icing or filling
53109220 Snack cake, not chocolate, with icing or filling, reduced fat and calories
53109300 Cake, Dobos Torte
53110000 Cake, fruit cake, light or dark, holiday type cake
53111000 Cake or cupcake, gingerbread
53112000 Cake, ice cream and cake roll, chocolate
53112100 Cake, ice cream and cake roll, not chocolate
53113000 Cake, jelly roll
53114000 Cake or cupcake, lemon, without icing or filling
53114100 Cake or cupcake, lemon, with icing or filling
53115100 Cake or cupcake, marble, without icing or filling
53115200 Cake or cupcake, marble, with icing or filling
53115310 Cake or cupcake, nut, without icing or filling
53115320 Cake or cupcake, nut, with icing or filling
53115410 Cake or cupcake, oatmeal
53115450 Cake or cupcake, peanut butter
53116000 Cake, pound, without icing or filling
53116020 Cake, pound, with icing or filling
53116270 Cake, pound, chocolate
53116350 Cake, pound, Puerto Rican style
53116390 Cake, pound, reduced fat, cholesterol free
53116500 Cake or cupcake, pumpkin, without icing or filling
53116510 Cake or cupcake, pumpkin, with icing or filling
53116550 Cake or cupcake, raisin-nut
53116570 Cake, Ravani

53116600 Cake, rice flour, without icing or filling
53116650 Cake, Quezadilla, El Salvadorian style
53117100 Cake or cupcake, spice, without icing or filling
53117200 Cake or cupcake, spice, with icing or filling
53118100 Cake, sponge, without icing or filling
53118200 Cake, sponge, with icing or filling
53118300 Cake, sponge, chocolate
53118410 Rum cake, without icing
53118500 Cake, torte
53118550 Cake, tres leche
53119000 Cake, pineapple, upside down
53120270 Cake or cupcake, white, with icing or filling
53120275 Cake or cupcake, white, without icing or filling
53121270 Cake or cupcake, yellow, with icing or filling
53121275 Cake or cupcake, yellow, without icing or filling
53122070 Cake, shortcake, biscuit type, with whipped cream and fruit
53122080 Cake, shortcake, biscuit type, with fruit
53123070 Cake, shortcake, sponge type, with whipped cream and fruit
53123080 Cake, shortcake, sponge type, with fruit
53123500 Cake, shortcake, with whipped topping and fruit, diet
53124110 Cake or cupcake, zucchini
53400200 Blintz, cheese-filled
53400300 Blintz, fruit-filled
53410100 Cobbler, apple
53410200 Cobbler, apricot
53410300 Cobbler, berry
53410500 Cobbler, cherry
53410800 Cobbler, peach
53410850 Cobbler, pear
53410860 Cobbler, pineapple
53410880 Cobbler, plum
53410900 Cobbler, rhubarb
53415100 Crisp, apple, apple dessert
53415120 Fritter, apple
53415200 Fritter, banana
53415220 Fritter, berry
53415300 Crisp, blueberry
53415400 Crisp, cherry
53415500 Crisp, peach
53415600 Crisp, rhubarb
53420000 Cream puff, eclair, custard or cream filled, NS as to icing
53420100 Cream puff, eclair, custard or cream filled, not iced
53420200 Cream puff, eclair, custard or cream filled, iced

53420210 Cream puff, eclair, custard or cream filled, iced, reduced fat
53420250 Cream puff, no filling or icing
53420300 Air filled fritter or fried puff, without syrup, Puerto Rican style
53420310 Wheat flour fritter, without syrup
53420400 Sopaipilla, without syrup or honey
53420410 Sopaipilla with syrup or honey
53430000 Crepe, NS as to filling
53430100 Crepe, chocolate filled
53430200 Crepe, fruit filled
53430700 Tamale, sweet
53430750 Tamale, sweet, with fruit
53440000 Strudel, apple
53440300 Strudel, berry
53440500 Strudel, cherry
53440600 Strudel, cheese
53440700 Strudel, peach
53440750 Strudel, pineapple
53440800 Strudel, cheese and fruit
53441110 Baklava
53441210 Basbousa
53450000 Turnover or dumpling, apple
53450300 Turnover or dumpling, berry
53450500 Turnover or dumpling, cherry
53450800 Turnover or dumpling, lemon
53451000 Turnover or dumpling, peach
53451500 Turnover, guava
53451750 Turnover, pumpkin
53452100 Pastry, fruit-filled
53452120 Pastry, made with bean or lotus seed paste filling, baked
53452130 Pastry, made with bean paste and salted egg yolk filling, baked
53452150 Pastry, Chinese, made with rice flour
53452170 Pastry, cookie type, fried
53452200 Pastry, Italian, with cheese
53452400 Pastry, puff
53452420 Pastry, puff, custard or cream filled, iced or not iced
53452450 Cheese pastry puffs
53452500 Pastry, mainly flour and water, fried
53453150 Empanada, Mexican turnover, fruit-filled
53453170 Empanada, Mexican turnover, pumpkin
53500100 Breakfast pastry, NFS
53510000 Danish pastry, plain or spice
53510100 Danish pastry, with fruit
53511000 Danish pastry, with cheese

53520000 Doughnut, NS as to cake or yeast
53520110 Doughnut, cake type
53520120 Doughnut, chocolate, cake type
53520140 Doughnut, cake type, chocolate covered
53520150 Doughnut, cake type, chocolate covered, dipped in peanuts
53520160 Doughnut, chocolate, cake type, with chocolate icing
53520200 Churros
53520500 Doughnut, Asian
53520600 Cruller, NFS
53520700 French cruller
53521100 Doughnut, chocolate, raised or yeast, with chocolate icing
53521110 Doughnut, raised or yeast
53521120 Doughnut, chocolate, raised or yeast
53521130 Doughnut, raised or yeast, chocolate covered
53521140 Doughnut, jelly
53521210 Doughnut, custard-filled
53521220 Doughnut, chocolate cream-filled
53521230 Doughnut, custard-filled, with icing
53530000 Breakfast tart
53530010 Breakfast tart, lowfat
53610100 Coffee cake, crumb or quick-bread type
53610170 Coffee cake, crumb or quick-bread type, with fruit
53610200 Coffee cake, crumb or quick-bread type, cheese-filled
55610200 Dumpling, fried, Puerto Rican style
55610300 Dumpling, plain
55701000 Cake made with glutinous rice
55702000 Cake or pancake made with rice flour and/or dried beans
55703000 Cake made with glutinous rice and dried beans
55801000 Funnel cake with sugar
55801010 Funnel cake with sugar and fruit
58123110 Sweet bread dough, filled with meat, steamed
58123120 Sweet bread dough, filled with bean paste, meatless, steamed
58127200 Croissant sandwich, filled with broccoli and cheese
58127210 Croissant sandwich, filled with ham and cheese
58127220 Croissant sandwich, filled with chicken, broccoli, and cheese sauce
58127270 Croissant sandwich with sausage and egg
58127290 Croissant sandwich with bacon and egg
58127310 Croissant sandwich with ham, egg, and cheese
58127330 Croissant sandwich with sausage, egg, and cheese
58127350 Croissant sandwich with bacon, egg, and cheese
63403150 Lime souffle
72125240 Spinach souffle

73305020 Squash, winter, souffle
75418060 Squash, summer, souffle

Cheese

[scFOS] = 3.3 g/100 g

14010000 Cheese, NFS
14101010 Cheese, Blue or Roquefort
14102010 Cheese, Brick
14103010 Cheese, Camembert
14103020 Cheese, Brie
14104100 Cheese, Cheddar
14104110 Cheese, Cheddar, reduced fat
14104115 Cheese, Cheddar, nonfat or fat free
14104200 Cheese, Colby
14104250 Cheese, Colby Jack
14104400 Cheese, Feta
14104600 Cheese, Fontina
14104700 Cheese, goat
14105010 Cheese, Gouda or Edam
14105200 Cheese, Gruyere
14106010 Cheese, Limburger
14106200 Cheese, Monterey
14106500 Cheese, Monterey, reduced fat
14107010 Cheese, Mozzarella, NFS
14107020 Cheese, Mozzarella, whole milk
14107030 Cheese, Mozzarella, part skim
14107040 Cheese, Mozzarella, reduced sodium
14107060 Cheese, Mozzarella, nonfat or fat free
14107200 Cheese, Muenster
14107250 Cheese, Muenster, reduced fat
14108010 Cheese, Parmesan, dry grated
14108015 Cheese, Parmesan, dry grated, reduced fat
14108020 Cheese, Parmesan, hard
14108060 Cheese, Parmesan, dry grated, fat free
14108200 Cheese, Port du Salut
14108400 Cheese, Provolone
14108420 Cheese, provolone, reduced fat
14109010 Cheese, Swiss
14109020 Cheese, Swiss, reduced sodium
14109030 Cheese, Swiss, reduced fat
14109040 Cheese, Swiss, nonfat or fat free
14110010 Cheese, Cheddar, reduced sodium
14120010 Cheese, Mexican blend

14120020 Cheese, Mexican blend, reduced fat
14131000 Queso Anejo, aged Mexican cheese
14131500 Queso Asadero
14132000 Queso Chihuahua
14133000 Queso Fresco
14134000 Queso cotija
14200100 Cheese, cottage, NFS
14201010 Cheese, cottage, creamed, large or small curd
14201200 Cottage cheese, farmer's
14201500 Cheese, Ricotta
14202010 Cheese, cottage, with fruit
14202020 Cheese, cottage, with vegetables
14203010 Cheese, cottage, dry curd
14203020 Cheese, cottage, salted, dry curd
14203510 Puerto Rican white cheese
14204010 Cheese, cottage, low fat
14204020 Cheese, cottage, lowfat, with fruit
14204030 Cheese, cottage, lowfat, with vegetables
14206010 Cheese, cottage, lowfat, low sodium
14207010 Cheese, cottage, lowfat, lactose reduced
14410100 Cheese, American and Swiss blends
14410110 Cheese, American
14410120 Cheese, American, reduced fat
14410130 Cheese, American, nonfat or fat free
14410210 Cheese, American, reduced sodium
14410500 Cheese, processed cheese food
14410600 Cheese, processed, with vegetables

Cream

[scFOS] = 6.7 g/100 g

12100100 Cream, NS as to light, heavy, or half and half
12110100 Cream, light
12120100 Cream, half and half
12120106 Cream, half and half, flavored
12120110 Cream, half and half, fat free
12130100 Cream, heavy
12140000 Cream, whipped

Confectionery

[scFOS] = 2.5 g/100 g

91305010 Icing, chocolate
91305020 Icing, white
91700010 Candy, NFS
91700500 M&M's Almond Chocolate Candies
91701010 Almonds, chocolate covered
91701020 Almonds, sugar-coated
91701030 Almonds, yogurt-covered
91702010 Butterscotch morsels
91703010 Caramel, chocolate-flavored roll
91703020 Caramel, flavor other than chocolate
91703030 Caramel, with nuts
91703040 Caramel candy, chocolate covered
91703050 Caramel with nuts and cereal, chocolate covered
91703060 Caramel with nuts, chocolate covered
91703070 Rolo
91703080 Caramel, all flavors, sugar free
91703150 Toblerone, milk chocolate with honey and almond nougat
91703200 TWIX Caramel Cookie Bars
91703250 TWIX Chocolate Fudge Cookie Bars
91703300 TWIX Peanut Butter Cookie Bars
91703400 Whatchamacallit
91703500 Nuts, carob-coated
91703600 Espresso coffee beans, chocolate-covered
91705010 Milk chocolate candy, plain
91705020 Milk chocolate candy, with cereal
91705030 Kit Kat
91705040 Chocolate, milk, with nuts, not almond or peanuts
91705050 Milk chocolate candy, with fruit and nuts
91705060 Milk chocolate candy, with almonds
91705070 Chocolate, milk, with peanuts
91705090 Chocolate candy with fondant and caramel
91705200 Chocolate, semi-sweet morsel
91705300 Chocolate, sweet or dark
91705310 Chocolate, sweet or dark, with almonds
91705400 Chocolate, white
91705410 Chocolate, white, with almonds
91705420 Chocolate, white, with cereal
91705430 Kit Kat White
91705500 Mexican chocolate, tablet
91706000 Coconut candy, chocolate covered
91706100 Coconut candy, no chocolate covering

91706400 Coconut candy, Puerto Rican style
91707000 Fondant
91707010 Fondant, chocolate covered
91708000 Fruit peel, candied
91708010 Date candy
91708020 Soft fruit confections
91708030 Fruit leather and fruit snacks candy
91708040 Fun Fruits Creme Supremes
91708070 Tamarind candy
91708100 Fruit snacks candy, with high vitamin C
91708150 Yogurt covered fruit snacks candy, with added vitamin C
91708160 Yogurt covered fruit snacks candy rolls, with high vitamin C
91709000 Gumdrops, chocolate covered
91713010 Fudge, chocolate, chocolate-coated
91713020 Fudge, chocolate, chocolate-coated, with nuts
91713030 Fudge, chocolate
91713040 Fudge, chocolate, with nuts
91713050 Fudge, peanut butter
91713060 Fudge, peanut butter, with nuts
91713070 Fudge, vanilla
91713080 Fudge, vanilla, with nuts
91713090 Fudge, divinity
91713100 Fudge, brown sugar, peneche
91715000 Fudge, caramel and nut, chocolate-coated candy
91715100 SNICKERS Bar
91715200 Baby Ruth
91715300 100 GRAND Bar
91716010 Halvah, plain
91716110 Halvah, chocolate covered
91718100 Butterfinger
91718110 Butterfinger Crisp
91718200 Chocolate-flavored sprinkles
91721000 Licorice
91723000 Marshmallow
91723010 Marshmallow, chocolate covered
91723020 Marshmallow, candy-coated
91723050 Marshmallow, coconut-coated
91726000 Nougat, plain
91726110 Nougat, with caramel, chocolate covered
91726130 MILKY WAY Bar
91726140 MILKY WAY MIDNIGHT Bar
91726150 MARS Almond Bar
91726410 Nougat, chocolate covered

91726420 3 MUSKETEERS Bar
91726425 3 Musketeers Truffle Crisp Bar
91727010 Nuts, chocolate covered, not almonds or peanuts
91728000 Nut roll, fudge or nougat, caramel and nuts
91728500 Sugared pecans, sugar and egg white coating
91731000 Peanuts, chocolate covered
91731010 M&M's Peanut Chocolate Candies
91731060 M&M's Peanut Butter Chocolate Candies
91731100 Peanuts, sugar-coated
91731150 Peanuts, yogurt covered
91732000 Peanut bar
91732100 Planters Peanut Bar
91733000 Peanut brittle
91733200 Peanut Bar, chocolate covered candy
91734000 Peanut butter, chocolate covered
91734100 Reese's Peanut Butter Cup
91734200 Reese's Pieces
91734300 Reese's Sticks
91734400 Reese's Fast Break
91734450 Reese's Crispy Crunchy Bar
91734500 Peanut butter morsels
91735000 Pralines
91736000 Pineapple candy, Puerto Rican style
91739010 Raisins, chocolate covered
91739600 Raisins, yogurt covered
91742010 Sesame Crunch, Sahadi
91745010 Gumdrops
91745100 Skittles
91746010 Sugar-coated chocolate discs
91746100 M&M's Milk Chocolate Candies
91746120 Sixlets
91746150 Easter egg, candy coated chocolate
91746200 M&M's Pretzel Chocolate Candies
91750000 Taffy
91760000 Toffee, plain
91760100 Toffee, chocolate covered
91760200 Toffee, chocolate-coated, with nuts
91760500 Truffles
91760700 Wax candy, liquid filled
91770000 Dietetic or low calorie candy, NFS
91770010 Dietetic or low calorie gumdrops
91770030 Dietetic or low calorie candy, chocolate covered
91770050 Dietetic or low calorie mints

91800100 Chewing gum, NFS
91801000 Chewing gum, regular
91802000 Chewing gum, sugar free

Cookies

[scFOS] = 3.3 g/100 g

53201000 Cookie, NFS
53202000 Cookie, almond
53203000 Cookie, applesauce
53203500 Cookie, biscotti
53204000 Cookie, brownie, NS as to icing
53204010 Cookie, brownie, without icing
53204100 Cookie, brownie, with icing or filling
53204840 Cookie, brownie, reduced fat, NS as to icing
53204860 Cookie, brownie, fat free, NS as to icing
53205250 Cookie, butterscotch, brownie
53205260 Cookie, bar, with chocolate
53206000 Cookie, chocolate chip
53206020 Cookie, chocolate chip, made from home recipe or purchased at a bakery
53206030 Cookie, chocolate chip, reduced fat
53206100 Cookie, chocolate chip sandwich
53206500 Cookie, chocolate, made with rice cereal
53206550 Cookie, chocolate, made with oatmeal and coconut, no bake
53207000 Cookie, chocolate or fudge
53207020 Cookie, chocolate or fudge, reduced fat
53207050 Cookie, chocolate, with chocolate filling or coating, fat free
53208000 Cookie, marshmallow, chocolate-covered
53208200 Cookie, marshmallow pie, chocolate covered
53209005 Cookie, chocolate, with icing or coating
53209010 Cookie, sugar wafer, chocolate-covered
53209015 Cookie, chocolate sandwich
53209020 Cookie, chocolate sandwich, reduced fat
53209100 Cookie, chocolate, sandwich, with extra filling
53209500 Cookie, chocolate and vanilla sandwich
53210000 Cookie, chocolate wafer
53210900 Cookie, graham cracker with chocolate and marshmallow
53211000 Cookie bar, with chocolate, nuts, and graham crackers
53215500 Cookie, coconut
53220000 Cookie, fruit-filled bar
53220010 Cookie, fruit-filled bar, fat free
53220030 Cookie, fig bar
53220040 Cookie, fig bar, fat free
53222010 Cookie, fortune

53222020 Cookie, cone shell, ice cream type, wafer or cake
53223000 Cookie, gingersnaps
53223100 Cookie, granola
53224000 Cookie, ladyfinger
53224250 Cookie, lemon bar
53225000 Cookie, macaroon
53226000 Cookie, marshmallow, with coconut
53226500 Cookie, marshmallow, with rice cereal, no bake
53226550 Cookie, marshmallow, with rice cereal and chocolate chips
53226600 Cookie, marshmallow and peanut butter, with oat cereal, no bake
53228000 Cookie, meringue
53230000 Cookie, molasses
53231000 Cookie, Lebkuchen
53231400 Cookie, multigrain, high fiber
53233000 Cookie, oatmeal
53233010 Cookie, oatmeal, with raisins
53233040 Cookie, oatmeal, reduced fat, NS as to raisins
53233050 Cookie, oatmeal sandwich, with creme filling
53233060 Cookie, oatmeal, with chocolate chips
53233080 Cookie, oatmeal sandwich, with peanut butter and jelly filling
53233100 Cookie, oatmeal, with chocolate and peanut butter, no bake
53234000 Cookie, peanut butter
53234100 Cookie, peanut butter, with chocolate
53234250 Cookie, peanut butter with rice cereal, no bake
53235000 Cookie, peanut butter sandwich
53235500 Cookie, with peanut butter filling, chocolate-coated
53235600 Cookie, Pfeffernusse
53236000 Cookie, Pizzelle
53236100 Cookie, pumpkin
53237000 Cookie, raisin
53237010 Cookie, raisin sandwich, cream-filled
53237500 Cookie, rum ball, no bake
53238000 Cookie, sandwich-type, not chocolate or vanilla
53239000 Cookie, shortbread
53239010 Cookie, shortbread, reduced fat
53239050 Cookie, shortbread, with icing or filling
53239100 Pocky
53240000 Cookie, animal
53240010 Cookie, animal, with frosting or icing
53241500 Cookie, butter or sugar
53241510 Marie biscuit
53241600 Cookie, butter or sugar, with fruit and/or nuts
53242000 Cookie, sugar wafer

53242500 Cookie, toffee bar
 53243000 Cookie, vanilla sandwich
 53243010 Cookie, vanilla sandwich, extra filling
 53243050 Cookie, vanilla sandwich, reduced fat
 53244010 Cookie, butter or sugar, with chocolate icing or filling
 53244020 Cookie, butter or sugar, with icing or filling other than chocolate
 53246000 Cookie, tea, Japanese
 53247000 Cookie, vanilla wafer
 53247050 Cookie, vanilla wafer, reduced fat
 53247500 Cookie, vanilla with caramel, coconut, and chocolate coating
 53251100 Cookie, rugelach
 53260030 Cookie, chocolate chip, sugar free
 53260200 Cookie, oatmeal, sugar free
 53260300 Cookie, sandwich, sugar free
 53260400 Cookie, sugar or plain, sugar free
 53260500 Cookie, sugar wafer, sugar free
 53260600 Cookie, peanut butter, sugar free
 53261000 Cookie, gluten free
 53270100 Cookies, Puerto Rican style

Crackers

[scFOS] = 6.7 g/100 g

54001000 Crackers, NFS
 54102010 Graham crackers
 54102015 Graham crackers (Teddy Grahams)
 54102020 Graham crackers, chocolate covered
 54102050 Crackers, oatmeal
 54102060 Crackers, Cuban
 54102100 Graham crackers, reduced fat
 54102200 Graham crackers, sandwich, with filling
 54103000 Crackers, breakfast biscuit
 54200100 Crackers, butter, reduced sodium
 54201010 Crackers, matzo, reduced sodium
 54202020 Crackers, saltine, reduced sodium
 54204020 Crackers, wheat, reduced sodium
 54204030 Crackers, woven wheat, reduced sodium
 54301010 Crackers, butter, plain
 54301020 Crackers, butter, flavored
 54301030 Crackers, butter (Ritz)
 54301100 Crackers, butter, reduced fat
 54304000 Crackers, cheese
 54304005 Crackers, cheese (Cheez-It)
 54304020 Crackers, cheese (Goldfish)

54304100 Crackers, cheese, reduced fat
54304150 Crackers, cheese, whole grain
54305010 Crackers, crispbread
54305020 Crackers, flatbread
54307000 Crackers, matzo
54308000 Crackers, milk
54313000 Crackers, oyster
54318000 Chips, rice
54318500 Rice cake
54319000 Crackers, rice
54319005 Crackers, rice and nuts
54319020 Popcorn cake
54319500 Rice paper
54325000 Crackers, saltine
54325010 Crackers, saltine, reduced fat
54325060 Crackers, saltine, multigrain
54326000 Crackers, multigrain
54328000 Crackers, sandwich
54328100 Crackers, sandwich, peanut butter filled
54328105 Crackers, sandwich, peanut butter filled (Ritz)
54328110 Crackers, sandwich, reduced fat, peanut butter filled
54328120 Crackers, whole grain, sandwich, peanut butter filled
54328200 Crackers, sandwich, cheese filled
54328210 Crackers, sandwich, cheese filled (Ritz)
54336000 Crackers, water
54336100 Crackers, wonton
54337010 Crackers, woven wheat
54337020 Crackers, woven wheat, plain (Triscuit)
54337030 Crackers, woven wheat, flavored (Triscuit)
54337060 Crackers, woven wheat, reduced fat
54338000 Crackers, wheat
54338010 Crackers, wheat, plain (Wheat Thins)
54338020 Crackers, wheat, flavored (Wheat Thins)
54338100 Crackers, wheat, reduced fat
54339000 Crackers, corn
54340100 Crackers, gluten free, plain
54340110 Crackers, gluten free, flavored

Dessert Toppings and Fillings

[scFOS] = 3.3 g/100 g

- 61113500 Lemon pie filling
- 63113030 Cherry pie filling
- 63203700 Blueberry pie filling
- 91304010 Topping, butterscotch or caramel
- 91304020 Topping, chocolate, thick, fudge type
- 91304030 Topping, fruit
- 91304040 Topping, marshmallow
- 91304060 Topping, nuts and syrup
- 91304070 Topping, peanut butter, thick, fudge type
- 91304080 Topping, fruit, unsweetened
- 91304090 Topping, chocolate flavored hazelnut spread
- 91304250 Topping, milk chocolate with cereal
- 91304300 Topping, chocolate, hard coating
- 91351020 Topping, dietetic

Hard Candy

[scFOS] = 6.7 g/100 g

- 91718000 Honey-combed hard candy with peanut butter
- 91718050 Honey-combed hard candy with peanut butter, chocolate covered
- 91745020 Hard candy
- 91745040 Butterscotch hard candy
- 91770020 Dietetic or low calorie hard candy

Ice Cream

[scFOS] = 1.5 g/100 g

- 11459990 Yogurt, frozen, NS as to flavor, NS as to type of milk
- 11460000 Yogurt, frozen, flavors other than chocolate, NS as to type of milk
- 11460100 Yogurt, frozen, chocolate, NS as to type of milk
- 11460150 Yogurt, frozen, NS as to flavor, lowfat milk
- 11460160 Yogurt, frozen, chocolate, lowfat milk
- 11460170 Yogurt, frozen, flavors other than chocolate, lowfat milk
- 11460190 Yogurt, frozen, NS as to flavor, nonfat milk
- 11460200 Yogurt, frozen, chocolate, nonfat milk
- 11460250 Yogurt, frozen, flavors other than chocolate, with sorbet or sorbet-coated
- 11460300 Yogurt, frozen, flavors other than chocolate, nonfat milk
- 11460400 Yogurt, frozen, chocolate, nonfat milk, with low-calorie sweetener
- 11460410 Yogurt, frozen, flavors other than chocolate, nonfat milk, with low-calorie sweetener
- 11460420 Yogurt, frozen, NS as to flavor, whole milk
- 11460430 Yogurt, frozen, chocolate, whole milk
- 11460440 Yogurt, frozen, flavors other than chocolate, whole milk

11461000 Yogurt, frozen, chocolate-coated
11461200 Yogurt, frozen, sandwich
11461250 Yogurt, frozen, cone, chocolate
11461260 Yogurt, frozen, cone, flavors other than chocolate
11461270 Yogurt, frozen, cone, flavors other than chocolate, lowfat milk
11461280 Yogurt, frozen, cone, chocolate, lowfat milk
13110000 Ice cream, NFS
13110100 Ice cream, regular, flavors other than chocolate
13110110 Ice cream, regular, chocolate
13110120 Ice cream, rich, flavors other than chocolate
13110130 Ice cream, rich, chocolate
13110140 Ice cream, rich, NS as to flavor
13110200 Ice cream, soft serve, flavors other than chocolate
13110210 Ice cream, soft serve, chocolate
13110220 Ice cream, soft serve, NS as to flavor
13110310 Ice cream, no sugar added, NS as to flavor
13110320 Ice cream, no sugar added, flavors other than chocolate
13110330 Ice cream, no sugar added, chocolate
13120050 Ice cream bar or stick, not chocolate covered or cake covered
13120100 Ice cream bar or stick, chocolate covered
13120110 Ice cream bar or stick, chocolate or caramel covered, with nuts
13120120 Ice cream bar or stick, rich chocolate ice cream, thick chocolate covering
13120121 Ice cream bar or stick, rich ice cream, thick chocolate covering
13120130 Ice cream bar or stick, rich ice cream, chocolate covered, with nuts
13120140 Ice cream bar or stick, chocolate ice cream, chocolate covered
13120300 Ice cream bar, cake covered
13120310 Ice cream bar, stick or nugget, with crunch coating
13120400 Ice cream bar or stick with fruit
13120500 Ice cream sandwich
13120550 Ice cream cookie sandwich
13120700 Ice cream cone with nuts, flavors other than chocolate
13120710 Ice cream cone, chocolate covered, with nuts, flavors other than chocolate
13120720 Ice cream cone, chocolate covered or dipped, flavors other than chocolate
13120730 Ice cream cone, no topping, flavors other than chocolate
13120740 Ice cream cone, no topping, NS as to flavor
13120750 Ice cream cone with nuts, chocolate ice cream
13120760 Ice cream cone, chocolate covered or dipped, chocolate ice cream
13120770 Ice cream cone, no topping, chocolate ice cream
13120780 Ice cream cone, chocolate covered, with nuts, chocolate ice cream
13120790 Ice cream sundae cone
13120800 Ice cream soda, flavors other than chocolate
13120810 Ice cream soda, chocolate
13121000 Ice cream sundae, NS as to topping, with whipped cream

13121100 Ice cream sundae, fruit topping, with whipped cream
13121200 Ice cream sundae, prepackaged type, flavors other than chocolate
13121300 Ice cream sundae, chocolate or fudge topping, with whipped cream
13121400 Ice cream sundae, not fruit or chocolate topping, with whipped cream
13121500 Ice cream sundae, fudge topping, with cake, with whipped cream
13122100 Ice cream pie, no crust
13122500 Ice cream pie, with cookie crust, fudge topping, and whipped cream
13126000 Ice cream, fried
13127000 Dippin' Dots, flash frozen ice cream snacks, flavors other than chocolate
13127010 Dippin' Dots, flash frozen ice cream snacks, chocolate
13130100 Light ice cream, NS as to flavor
13130300 Light ice cream, flavors other than chocolate
13130310 Light ice cream, chocolate
13130320 Light ice cream, no sugar added, NS as to flavor
13130330 Light ice cream, no sugar added, flavors other than chocolate
13130340 Light ice cream, no sugar added, chocolate
13130590 Light ice cream, soft serve, NS as to flavor
13130600 Light ice cream, soft serve, flavors other than chocolate
13130610 Light ice cream, soft serve, chocolate
13130620 Light ice cream, soft serve cone, flavors other than chocolate
13130630 Light ice cream, soft serve cone, chocolate
13130640 Light ice cream, soft serve cone, NS as to flavor
13130700 Light ice cream, soft serve, blended with candy or cookies
13135000 Ice cream sandwich, made with light ice cream, flavors other than chocolate
13135010 Ice cream sandwich, made with light chocolate ice cream
13136000 Ice cream sandwich, made with light, no sugar added ice cream
13140100 Light ice cream, bar or stick, chocolate coated
13140110 Light ice cream, bar or stick, chocolate covered, with nuts
13140450 Light ice cream, cone, NFS
13140500 Light ice cream, cone, flavors other than chocolate
13140550 Light ice cream, cone, chocolate
13140570 Light ice cream, no sugar added, cone, NS as to flavor
13140575 Light ice cream, no sugar added, cone, flavors other than chocolate
13140580 Light ice cream, no sugar added, cone, chocolate
13140600 Light ice cream, sundae, soft serve, chocolate or fudge topping, with whipped cream
13140630 Light ice cream, sundae, soft serve, fruit topping, with whipped cream
13140650 Light ice cream, sundae, soft serve, not fruit or chocolate topping, with whipped cream
13140660 Light ice cream, sundae, soft serve, chocolate or fudge topping, without whipped cream
13140670 Light ice cream, sundae, soft serve, fruit topping, without whipped cream
13140680 Light ice cream, sundae, soft serve, not fruit or chocolate topping, without whipped cream
13140700 Light ice cream, creamsicle or dreamsicle
13140710 Light ice cream, creamsicle or dreamsicle, no sugar added
13140900 Light ice cream, fudgesicle

- 13142000 Milk dessert bar or stick, frozen, with coconut
- 13160150 Fat free ice cream, no sugar added, chocolate
- 13160160 Fat free ice cream, no sugar added, flavors other than chocolate
- 13160400 Fat free ice cream, flavors other than chocolate
- 13160410 Fat free ice cream, chocolate
- 13160420 Fat free ice cream, NS as to flavor
- 13161000 Milk dessert bar, frozen, made from lowfat milk
- 13161500 Milk dessert sandwich bar, frozen, made from lowfat milk
- 13161520 Milk dessert sandwich bar, frozen, with low-calorie sweetener, made from lowfat milk
- 13161600 Milk dessert bar, frozen, made from lowfat milk and low calorie sweetener
- 13161630 Light ice cream, bar or stick, with low-calorie sweetener, chocolate coated
- 13170000 Baked Alaska
- 13252200 Milk dessert or milk candy, Puerto Rican style
- 13252500 Barfi or Burfi, Indian dessert, made from milk and/or cream and/or Ricotta cheese

Infant Foods (0 to 12 Months)

[scFOS] = 0.4 to 3.6 g/100 g

- 13310000 Custard pudding, flavor other than chocolate, baby food, NS as to strained or junior
- 13311000 Custard pudding, baby food, flavor other than chocolate, strained
- 13312000 Custard pudding, baby food, flavor other than chocolate, junior
- 20000070 Meat, baby food, NS as to type, NS as to strained or junior
- 20000090 Meat sticks, baby food, NS as to type of meat
- 21701000 Beef, baby food, NS as to strained or junior
- 21701010 Beef, baby food, strained
- 21701020 Beef, baby food, junior
- 22810010 Ham, baby food, strained
- 22820000 Meat stick, baby food
- 23410010 Lamb, baby food, strained
- 23420010 Veal, baby food, strained
- 24701000 Chicken, baby food, NS as to strained or junior
- 24701010 Chicken, baby food, strained
- 24701020 Chicken, baby food, junior
- 24703000 Turkey, baby food, NS as to strained or junior
- 24703010 Turkey, baby food, strained
- 24703020 Turkey, baby food, junior
- 24705010 Chicken stick, baby food
- 24706010 Turkey stick, baby food
- 27610100 Beef and egg noodles, baby food, NS as to strained or junior
- 27610110 Beef and egg noodles, baby food, strained
- 27610120 Beef and egg noodles, baby food, junior
- 27610710 Beef with vegetables, baby food, strained
- 27640050 Chicken and rice dinner, baby food, strained
- 27640100 Chicken noodle dinner, baby food, NS as to strained or junior

27640110 Chicken noodle dinner, baby food, strained
27640120 Chicken noodle dinner, baby food, junior
27642100 Turkey, rice and vegetables, baby food, NS as to strained or junior
27642110 Turkey, rice and vegetables, baby food, strained
27642120 Turkey, rice and vegetables, baby food, junior
27644110 Chicken soup, baby food
53801000 Cereal bar with fruit filling, baby food
53803050 Cookie, fruit, baby food
53803100 Cookie, baby food
53803250 Cookie, teething, baby
53803300 Cookie, rice, baby
54350000 Crackers, baby food
54350010 Gerber Finger Foods, Puffs, baby food
54350020 Finger Foods, Puffs, baby food
54360000 Crunchy snacks, corn based, baby food
54408100 Pretzel, baby food
56210000 Cereal, nestum
57805090 Rice cereal with mixed fruits, baby food, dry, instant
57806050 Multigrain, whole grain cereal, baby food, dry, instant
57820000 Cereal, baby food, jarred, NFS
57820100 Rice cereal, baby food, jarred, NFS
57822000 Mixed cereal with applesauce and bananas, baby food, jarred
57823000 Oatmeal with applesauce and bananas, baby food, jarred
57824000 Rice cereal with applesauce and bananas, baby food, jarred
57824500 Rice cereal with mixed fruit, baby food, jarred
58503000 Macaroni, tomatoes, and beef, baby food, NS as to strained or junior
58503010 Macaroni, tomatoes, and beef, baby food, strained
58503020 Macaroni, tomatoes, and beef, baby food, junior
58508000 Macaroni and cheese, baby food, strained
58509020 Spaghetti, tomato sauce, and beef, baby food, junior
58509200 Macaroni with vegetables, baby food, strained
67100100 Fruit, baby food, NFS
67100200 Tropical fruit medley, baby food, strained
67101000 Apple-raspberry, baby food, NS as to strained or junior
67101010 Apple-raspberry, baby food, strained
67101020 Apple-raspberry, baby food, junior
67102000 Applesauce, baby food, NS as to strained or junior
67102010 Applesauce, baby food, strained
67102020 Applesauce, baby food, junior
67104000 Applesauce and apricots, baby food, NS as to strained or junior
67104010 Applesauce and apricots, baby food, strained
67104020 Applesauce and apricots, baby food, junior
67104030 Applesauce with bananas, baby food, NS as to strained or junior

67104040 Applesauce with bananas, baby food, strained
67104060 Applesauce with bananas, baby food, junior
67104070 Applesauce with cherries, baby food, strained
67104080 Applesauce with cherries, baby food, junior
67104090 Applesauce with cherries, baby food, NS as to strained or junior
67105030 Bananas, baby food, strained
67106010 Bananas with apples and pears, baby food, strained
67106030 Bananas with orange, baby food, strained
67106050 Banana with mixed berries, baby food, strained
67108000 Peaches, baby food, NS as to strained or junior
67108010 Peaches, baby food, strained
67108020 Peaches, baby food, junior
67109000 Pears, baby food, NS as to strained or junior
67109010 Pears, baby food, strained
67109020 Pears, baby food, junior
67110000 Prunes, baby food, strained
67113000 Apples and pears, baby food, NS as to strained or junior
67113010 Apples and pears, baby food, strained
67113020 Apples and pears, baby food, junior
67114000 Pears and pineapple, baby food, NS as to strained or junior
67114010 Pears and pineapple, baby food, strained
67114020 Pears and pineapple, baby food, junior
67202000 Apple juice, baby food
67202010 Apple juice, with added calcium, baby food
67203000 Apple-fruit juice blend, baby food
67203200 Apple-banana juice, baby food
67203400 Apple-cherry juice, baby food
67203500 Apple-grape juice, baby food
67203600 Apple-peach juice, baby food
67203700 Apple-prune juice, baby food
67203800 Grape juice, baby food
67204000 Mixed fruit juice, not citrus, baby food
67204100 Mixed fruit juice, not citrus, with added calcium, baby food
67205000 Orange juice, baby food
67211000 Orange-apple-banana juice, baby food
67212000 Pear juice, baby food
67230000 Apple-sweet potato juice, baby food
67230500 Orange-carrot juice, baby food
67250100 Banana juice with lowfat yogurt, baby food
67250150 Mixed fruit juice with lowfat yogurt, baby food
67260000 Fruit juice and water drink, with high vitamin C and added calcium, baby food
67304000 Plums, baby food, NS as to strained or junior
67304010 Plums, baby food, strained

67304020 Plums, baby food, junior
67304030 Plums, bananas, and rice, baby food strained
67304500 Prunes with oatmeal, baby food, strained
67307000 Apricots, baby food, NS as to strained or junior
67307010 Apricots, baby food, strained
67307020 Apricots, baby food, junior
67308000 Bananas, baby food, NS as to strained or junior
67308020 Bananas, baby food, junior
67309000 Bananas and pineapple, baby food, NS as to strained or junior
67309010 Bananas and pineapple, baby food, strained
67309020 Bananas and pineapple, baby food, junior
67309030 Bananas and strawberry, baby food, junior
67404000 Fruit dessert, baby food, NS as to strained or junior
67404010 Fruit dessert, baby food, strained
67404020 Fruit dessert, baby food, junior
67404050 Fruit Supreme dessert, baby food
67404070 Apple yogurt dessert, baby food, strained
67404110 Banana apple dessert, baby food, strained
67404300 Blueberry yogurt dessert, baby food, strained
67404500 Mixed fruit yogurt dessert, baby food, strained
67404550 Cherry cobbler, baby food, junior
67405000 Peach cobbler, baby food, NS as to strained or junior
67405010 Peach cobbler, baby food, strained
67405020 Peach cobbler, baby food, junior
67408010 Banana pudding, baby food, strained
67408500 Banana yogurt dessert, baby food, strained
67410000 Cherry vanilla pudding, baby food, strained
67412000 Dutch apple dessert, baby food, NS as to strained or junior
67412010 Dutch apple dessert, baby food, strained
67412020 Dutch apple dessert, baby food, junior
67413700 Peach yogurt dessert, baby food, strained
67414010 Pineapple dessert, baby food, strained
67414100 Mango dessert, baby food
67415000 Tutti-fruitti pudding, baby food, NS as to strained or junior
67415010 Tutti-fruitti pudding, baby food, strained
67415020 Tutti-fruitti pudding, baby food, junior
67501000 Apples and chicken, baby food, strained
67501100 Apples with ham, baby food, strained
67600100 Apples and sweet potatoes, baby food, strained
76102010 Spinach, creamed, baby food, strained
76102030 Broccoli, carrots and cheese, baby food, junior
76201000 Carrots, baby food, NS as to strained or junior
76201010 Carrots, baby food, strained

76201020 Carrots, baby food, junior
76202000 Carrots and peas, baby food, strained
76205000 Squash, baby food, NS as to strained or junior
76205010 Squash, baby food, strained
76205020 Squash, baby food, junior
76205030 Squash and corn, baby food, strained
76205060 Corn and sweet potatoes, baby food, strained
76209000 Sweet potatoes, baby food, NS as to strained or junior
76209010 Sweet potatoes, baby food, strained
76209020 Sweet potatoes, baby food, junior
76401000 Beans, green string, baby food, NS as to strained or junior
76401010 Beans, green string, baby food, strained
76401020 Beans, green string, baby food, junior
76402000 Green beans and potatoes, baby food, strained
76403010 Beets, baby food, strained
76405000 Corn, creamed, baby food, NS as to strained or junior
76405010 Corn, creamed, baby food, strained
76405020 Corn, creamed, baby food, junior
76407000 Mixed vegetables, garden vegetables, baby food, NS as to strained or junior
76407010 Mixed vegetables, garden vegetables, baby food, strained
76407020 Mixed vegetables, garden vegetables, baby food, junior
76409000 Peas, baby food, NS as to strained or junior
76409010 Peas, baby food, strained
76409020 Peas, baby food, junior
76501000 Vegetables and rice, baby food, strained
76502000 Peas and brown rice, baby food
76602000 Carrots and beef, baby food, strained
76603000 Vegetable and beef, baby food, NS as to strained or junior
76603010 Vegetable and beef, baby food, strained
76603020 Vegetable and beef, baby food, junior
76604000 Broccoli and chicken, baby food, strained
76604500 Sweet potatoes and chicken, baby food, strained
76605000 Vegetable and chicken, baby food, NS as to strained or junior
76605010 Vegetable and chicken, baby food, strained
76605020 Vegetable and chicken, baby food, junior
76611000 Vegetable and turkey, baby food, NS as to strained or junior
76611010 Vegetable and turkey, baby food, strained
76611020 Vegetable and turkey, baby food, junior

Adjusted for not being reconstituted, 15 g of powder to 110 mL of water

[scFOS] = 29.99 g/100 g

- 57801000 Barley cereal, baby food, dry, instant
- 57803000 Mixed cereal, baby food, dry, instant
- 57804000 Oatmeal cereal, baby food, dry, instant
- 57805000 Rice cereal, baby food, dry, instant
- 57805080 Rice cereal with apples, baby food, dry, instant
- 57805100 Rice cereal with bananas, baby food, dry, instant
- 57805500 Brown rice cereal, baby food, dry, instant
- 57806000 Mixed cereal with bananas, baby food, dry, instant
- 57806100 Oatmeal cereal with bananas, baby food, dry, instant
- 57807010 Whole wheat cereal with apples, baby food, dry, instant

Jams and Jellies

[scFOS] = 5 g/100 g

- 91401000 Jelly, all flavors
- 91402000 Jam, preserve, all flavors
- 91403000 Fruit butter, all flavors
- 91404000 Marmalade, all flavors
- 91405000 Jelly, sugar free, all flavors
- 91405500 Jelly, reduced sugar, all flavors
- 91406000 Jam, preserve, marmalade, sugar free, all flavors
- 91406500 Jam, preserve, marmalade, sweetened with fruit juice concentrates, all flavors
- 91406600 Jam, preserve, marmalade, reduced sugar, all flavors
- 91407100 Guava paste
- 91407120 Sweet potato paste
- 91407150 Bean paste, sweetened

Mixed foods containing jams and jellies

Adjusted for jams and jellies content of 17.9 to 50%

[scFOS] = 0.89 to 2.5 g/100 g

- 42203000 Peanut butter and jelly
- 42302010 Peanut butter and jelly sandwich, NFS
- 42302015 Peanut butter and jelly sandwich, with regular peanut butter, regular jelly, on white bread
- 42302020 Peanut butter and jelly sandwich, with regular peanut butter, regular jelly, on wheat bread
- 42302025 Peanut butter and jelly sandwich, with regular peanut butter, regular jelly, on whole wheat bread
- 42302055 Peanut butter and jelly sandwich, with reduced fat peanut butter, regular jelly, on white bread
- 42302060 Peanut butter and jelly sandwich, with reduced fat peanut butter, regular jelly, on wheat bread
- 42302065 Peanut butter and jelly sandwich, with reduced fat peanut butter, regular jelly, on whole wheat bread

- 42302105 Peanut butter and jelly sandwich, with regular peanut butter, reduced sugar jelly, on white bread
- 42302110 Peanut butter and jelly sandwich, with regular peanut butter, reduced sugar jelly, on wheat bread
- 42302115 Peanut butter and jelly sandwich, with regular peanut butter, reduced sugar jelly, on whole wheat bread
- 42302155 Peanut butter and jelly sandwich, with reduced fat peanut butter, reduced sugar jelly, on white bread
- 42302160 Peanut butter and jelly sandwich, with reduced fat peanut butter, reduced sugar jelly, on wheat bread
- 42302165 Peanut butter and jelly sandwich, with reduced fat peanut butter, reduced sugar jelly, on whole wheat bread
- 42303100 Peanut butter and jelly sandwich, frozen commercial product without crusts
- 58201000 Jelly sandwich, regular jelly, NFS
- 58201005 Jelly sandwich, regular jelly, on white bread
- 58201015 Jelly sandwich, regular jelly, on wheat bread
- 58201025 Jelly sandwich, regular jelly, on whole wheat bread
- 58201035 Jelly sandwich, reduced sugar jelly, on white bread
- 58201045 Jelly sandwich, reduced sugar jelly, on wheat bread
- 58201055 Jelly sandwich, reduced sugar jelly, on whole wheat bread

Analogs and Substitutes for Meat, Poultry or Fish

[scFOS] = 6.7 g/100 g

- 41810200 Bacon strip, meatless
- 41810250 Bacon bits
- 41810400 Breakfast link, pattie, or slice, meatless
- 41810600 Chicken, meatless, NFS
- 41810610 Chicken, meatless, breaded, fried
- 41811400 Frankfurter or hot dog, meatless
- 41811600 Luncheon slice, meatless-beef, chicken, salami or turkey
- 41811800 Meatball, meatless
- 41811890 Vegetarian burger or patty, meatless, no bun
- 41811950 Swiss steak, with gravy, meatless
- 41812400 Vegetarian pot pie
- 41812450 Vegetarian chili, made with meat substitute
- 41812500 Tofu and vegetables including carrots, broccoli, and/or dark-green leafy; no potatoes, with soy-based sauce
- 41812510 Tofu and vegetables excluding carrots, broccoli, and dark-green leafy; no potatoes, with soy-based sauce
- 41812600 Vegetarian, fillet
- 41812800 Vegetarian stew
- 41812850 Vegetarian stroganoff
- 41812900 Vegetarian meat loaf
- 41901020 Soyburger, meatless, with cheese on bun

Milk, Evaporated and Condensed

[scFOS] = 3.1 g/100 g

- 11210050 Milk, evaporated, NS as to fat content
- 11211050 Milk, evaporated, whole
- 11211400 Milk, evaporated, reduced fat (2%)
- 11212050 Milk, evaporated, fat free (skim)
- 11220000 Milk, condensed, sweetened

Muffins and Quick Bread

[scFOS] = 2 g/100 g

- 52206010 Cornbread muffin, stick, round
- 52206060 Cornbread muffin, stick, round, made from home recipe
- 52301000 Muffin, NFS
- 52302010 Muffin, fruit
- 52302020 Muffin, fruit, low fat
- 52302500 Muffin, chocolate chip
- 52302600 Muffin, chocolate
- 52303010 Muffin, whole wheat
- 52303500 Muffin, wheat
- 52304000 Muffin, whole grain
- 52304010 Muffin, wheat bran
- 52304040 Muffin, bran with fruit, lowfat
- 52304100 Muffin, oatmeal
- 52304150 Muffin, oat bran
- 52306010 Muffin, plain
- 52306300 Muffin, cheese
- 52306500 Muffin, pumpkin
- 52306550 Muffin, zucchini
- 52306700 Muffin, carrot
- 52311010 Popover
- 52401000 Bread, Boston Brown
- 52403000 Bread, nut
- 52404060 Bread, pumpkin
- 52405010 Bread, fruit
- 52407000 Bread, zucchini
- 52408000 Bread, Irish soda

Sauces, Gravies, and Condiments

[scFOS] = 3.3 g/100 g

- 13411000 White sauce, milk sauce
- 13412000 Milk gravy, quick gravy
- 14650100 Cheese sauce

14650150 Cheese sauce made with lowfat cheese
 14650160 Alfredo sauce
 27120120 Sausage gravy
 27150140 Clam sauce, white
 27150160 Shrimp with lobster sauce
 27150190 Lobster sauce
 27150200 Oyster sauce
 27150210 Fish sauce
 28500000 Gravy, poultry
 28500010 Gravy, meat or poultry, with wine
 28500020 Gravy, meat, with fruit
 28500030 Gravy, poultry, low sodium
 28500040 Gravy, beef or meat
 28500050 Gravy, gible
 28500060 Gravy, beef or meat, low sodium
 28500070 Gravy, beef or meat, home recipe
 28500080 Gravy, poultry, home recipe
 28500100 Gravy, mushroom
 28500150 Gravy, redeye
 28501010 Gravy, beef or meat, fat free
 28501110 Gravy, poultry, fat free
 28510010 Gravy or sauce, poultry-based from Puerto Rican-style chicken fricasse
 28510020 Gravy, meat-based, from Puerto-Rican style stuffed pot roast
 28510030 Gravy, meat-based, from Puerto-Rican style beef stew
 28520000 Gravy or sauce, made with soy sauce, stock or bouillon, cornstarch
 28520100 Oyster-flavored sauce
 28522000 Mole poblano sauce
 28522050 Mole verde sauce
 41205100 Black bean sauce
 41420100 Miso sauce
 41420250 Hoisin sauce
 41420300 Soy sauce
 41420350 Soy sauce, reduced sodium
 41420400 Teriyaki sauce
 41420410 Teriyaki sauce, reduced sodium
 41420450 Worcestershire sauce
 42204050 Peanut sauce
 42204100 Brown nut gravy, meatless
 55502000 Flour and water gravy
 63101110 Applesauce, stewed apples, NS as to sweetened or unsweetened; sweetened, NS as to type of sweetener
 63101120 Applesauce, stewed apples, unsweetened
 63101130 Applesauce, stewed apples, with sugar
 63101140 Applesauce, stewed apples, sweetened with low calorie sweetener

63307010 Cranberry-orange relish, uncooked
63307100 Cranberry-raspberry Sauce
63409020 Chutney
74401010 Tomato catsup
74401110 Tomato catsup, reduced sodium
74402010 Tomato chili sauce
74402100 Salsa, NFS
74402110 Salsa, pico de gallo
74402150 Salsa, red, commercially-prepared
74402250 Enchilada sauce, red
74402260 Enchilada sauce, green
74404010 Spaghetti sauce
74404020 Spaghetti sauce with added vegetables
74404050 Spaghetti sauce, reduced sodium
74404060 Spaghetti sauce, fat free
74404090 Vodka sauce with tomatoes and cream
74405010 Tomato relish
74406010 Barbecue sauce
74406100 Steak sauce, tomato-base
74406500 Cocktail sauce
75501010 Corn relish
75503020 Cucumber pickles, relish
75503090 Horseradish
75506010 Mustard
75511010 Hot pepper sauce
75515010 Vegetable relish
81301000 Garlic sauce
81301020 Lemon-butter sauce
81302010 Hollandaise sauce
81302050 Tartar sauce
81302060 Horseradish sauce
81302070 Pesto sauce
81312000 Tartar sauce, reduced fat/calorie
91304050 Hard sauce
91361010 Sweet and sour sauce
91361020 Fruit sauce
91361040 Dessert sauce
91361050 Duck sauce
91361070 Plum sauce, Asian style

Snacks

[scFOS] = 3.3 g/100 g

- 54401011 Corn nuts
- 54401021 Corn chips, plain
- 54401026 Corn chips, flavored
- 54401031 Corn chips, plain (Fritos)
- 54401035 Corn chips, flavored (Fritos)
- 54401055 Cheese flavored corn snacks
- 54401065 Cheese flavored corn snacks, reduced fat
- 54401075 Tortilla chips, plain
- 54401081 Cheese flavored corn snacks (Cheetos)
- 54401085 Tortilla chips, flavored
- 54401090 Corn chips, reduced sodium
- 54401095 Tortilla chips, popped
- 54401110 Tortilla chips, nacho cheese flavor (Doritos)
- 54401111 Tortilla chips, cool ranch flavor (Doritos)
- 54401112 Tortilla chips, other flavors (Doritos)
- 54401121 Tortilla chips, reduced fat, plain
- 54401122 Tortilla chips, reduced fat, flavored
- 54401170 Tortilla chips, low fat, unsalted
- 54402080 Tortilla chips, reduced sodium
- 54402200 Snack mix
- 54402610 Potato chips, restructured, multigrain
- 54402700 Pita chips
- 54403001 Popcorn, NFS
- 54403005 Popcorn, movie theater, with added butter
- 54403006 Popcorn, movie theater, unbuttered
- 54403010 Popcorn, air-popped, unbuttered
- 54403040 Popcorn, air-popped, with added butter or margarine
- 54403045 Popcorn, popped in oil, unbuttered
- 54403046 Popcorn, popped in oil, with added butter or margarine
- 54403051 Popcorn, microwave, NFS
- 54403052 Popcorn, microwave, plain
- 54403053 Popcorn, microwave, plain, light
- 54403054 Popcorn, microwave, low sodium
- 54403055 Popcorn, microwave, unsalted
- 54403056 Popcorn, microwave, butter flavored
- 54403057 Popcorn, microwave, butter flavored, light
- 54403058 Popcorn, microwave, cheese flavored
- 54403059 Popcorn, microwave, kettle corn
- 54403061 Popcorn, microwave, kettle corn, light
- 54403062 Popcorn, microwave, other flavored
- 54403080 Popcorn, ready-to-eat packaged, NFS

54403081 Popcorn, ready-to-eat packaged, plain
54403082 Popcorn, ready-to-eat packaged, plain, light
54403083 Popcorn, ready-to-eat packaged, low sodium
54403084 Popcorn, ready-to-eat packaged, unsalted
54403085 Popcorn, ready-to-eat packaged, butter flavored
54403086 Popcorn, ready-to-eat packaged, butter flavored, light
54403087 Popcorn, ready-to-eat packaged, cheese flavored
54403088 Popcorn, ready-to-eat packaged, cheese flavored, light
54403089 Popcorn, ready-to-eat-packaged, kettle corn
54403091 Popcorn, ready-to-eat packaged, kettle corn, light
54403092 Popcorn, ready-to-eat packaged, other flavored
54403110 Popcorn, caramel coated
54403120 Popcorn, caramel coated, with nuts
54403160 Popcorn, chocolate coated
54404000 Popcorn chips, plain
54404010 Popcorn chips, other flavors
54404020 Popcorn chips, sweet flavors
54406010 Onion flavored rings
54406200 Shrimp chips
54408000 Pretzels, NFS
54408015 Pretzels, hard, NFS
54408016 Pretzels, hard, plain, salted
54408017 Pretzels, hard, plain, lightly salted
54408030 Pretzels, hard, plain, unsalted
54408035 Pretzels, hard, flavored
54408070 Pretzels, hard, multigrain
54408081 Pretzels, hard, plain, gluten free
54408082 Pretzels, hard, flavored, gluten free
54408105 Pretzel chips, hard, plain
54408110 Pretzel chips, hard, flavored
54408115 Pretzel chips, hard, gluten free
54408190 Pretzels, hard, coated, NFS
54408200 Pretzels, hard, chocolate coated
54408210 Pretzels, hard, white chocolate coated
54408250 Pretzels, hard, yogurt coated
54408260 Pretzels, hard, coated, gluten free
54408290 Pretzels, hard, filled, NFS
54408300 Pretzels, hard, cheese filled
54408310 Pretzels, hard, peanut butter filled
54408400 Pretzels, soft, NFS
54408405 Pretzels, soft, ready-to-eat, NFS
54408410 Pretzels, soft, ready-to-eat, salted, buttered
54408411 Pretzels, soft, ready-to-eat, unsalted, buttered

54408415 Pretzels, soft, ready-to-eat, salted, no butter
54408416 Pretzels, soft, ready-to-eat, unsalted, no butter
54408420 Pretzels, soft, ready-to-eat, cinnamon sugar coated
54408422 Pretzels, soft, ready-to-eat, coated or flavored
54408430 Pretzels, soft, ready-to-eat, topped with meat
54408432 Pretzels, soft, ready-to-eat, topped with cheese
54408450 Pretzels, soft, from frozen, NFS
54408455 Pretzels, soft, from frozen, salted
54408456 Pretzels, soft, from frozen, unsalted
54408460 Pretzels, soft, from frozen, cinnamon sugar coated
54408462 Pretzels, soft, from frozen, coated or flavored
54408465 Pretzels, soft, from frozen, topped with meat
54408466 Pretzels, soft, from frozen, topped with cheese
54408470 Pretzels, soft, filled with cheese
54408475 Pretzels, soft, from school lunch
54408480 Pretzels, soft, multigrain
54408485 Pretzels, soft, gluten free
54408486 Pretzels, soft, gluten free, cinnamon sugar coated
54408487 Pretzels, soft, gluten free, coated or flavored
54420210 Multigrain chips (Sun Chips)
54420220 Snack mix, plain (Chex Mix)
54440010 Bagel chips
54440020 Cracker chips
71200010 Potato chips, NFS
71200100 Potato chips, plain
71200110 Potato chips, barbecue flavored
71200120 Potato chips, sour cream and onion flavored
71200130 Potato chips, cheese flavored
71200140 Potato chips, other flavored
71200200 Potato chips, ruffled, plain
71200210 Potato chips, ruffled, barbecue flavored
71200220 Potato chips, ruffled, sour cream and onion flavored
71200230 Potato chips, ruffled, cheese flavored
71200240 Potato chips, ruffled, other flavored
71200300 Potato chips, restructured, plain
71200310 Potato chips, restructured, flavored
71200400 Potato chips, baked, plain
71200410 Potato chips, baked, flavored
71201050 Potato chips, reduced fat
71201060 Potato chips, fat free
71201200 Potato chips, restructured, reduced fat, lightly salted
71201210 Potato chips, restructured, fat free
71202000 Potato chips, unsalted

71202100 Potato chips, reduced fat, unsalted
 71202500 Potato chips, lightly salted
 71202510 Potato chips, restructured, lightly salted
 71203010 Potato chips, popped, plain
 71203020 Potato chips, popped, flavored
 71203030 Potato chips, popped, NFS
 71205020 Potato sticks, plain
 71205030 Potato sticks, flavored
 71205040 Potato sticks, fry shaped
 71220000 Vegetable chips
 71905410 Plantain chips
 71980200 Taro chips

Sorbet and Sherbet

[scFOS] = 1.2 g/100 g

13150000 Sherbet, all flavors
 63430100 Sorbet, fruit, noncitrus flavor
 63430110 Sorbet, fruit, citrus flavor

Soup

[scFOS] = 0.4 g/100 g

14710100 Cheddar cheese soup, home recipe, canned or ready-to-serve
 14710200 Beer cheese soup, made with milk
 28310110 Beef, broth, bouillon, or consommé
 28310150 Oxtail soup
 28310320 Beef noodle soup, Puerto Rican style
 28310330 Pho
 28310420 Beef and rice soup, Puerto Rican style
 28311010 Peppercorn soup
 28311030 Menudo soup, canned, prepared with water or ready-to-serve
 28315050 Beef vegetable soup with potato, pasta, or rice, chunky style, canned, or ready-to-serve
 28315160 Italian Wedding Soup
 28317010 Beef stroganoff soup, chunky style, home recipe, canned or ready-to-serve
 28320130 Ham, rice, and potato soup, Puerto Rican style
 28320140 Ham, noodle, and vegetable soup, Puerto Rican style
 28320160 Pork vegetable soup with potato, pasta, or rice, stew type, chunky style
 28320300 Pork with vegetable excluding carrots, broccoli and/or dark-green leafy; soup, Asian Style
 28321130 Bacon soup, cream of, prepared with water
 28331110 Lamb, pasta, and vegetable soup, Puerto Rican style
 28340110 Chicken or turkey broth, bouillon, or consommé
 28340150 Mexican style chicken broth soup stock
 28340179 Beef broth, less or reduced sodium, canned or ready-to-serve
 28340180 Chicken or turkey broth, less or reduced sodium, canned or ready-to-serve

28340210 Chicken rice soup, Puerto Rican style
28340220 Chicken soup with noodles and potatoes, Puerto Rican style
28340310 Chicken or turkey gumbo soup, home recipe, canned or ready-to-serve
28340510 Chicken or turkey noodle soup, chunky style, canned or ready-to-serve
28340550 Sweet and sour soup
28340580 Chicken or turkey soup with vegetables, broccoli, carrots, celery, potatoes and onions, Asian style
28340600 Chicken or turkey vegetable soup, canned, prepared with water or ready-to-serve
28340610 Chicken or turkey vegetable soup, stew type
28340630 Chicken or turkey vegetable soup with rice, stew type, chunky style
28340640 Chicken or turkey vegetable soup with noodles, stew type, chunky style, canned or ready-to-serve
28340690 Chicken or turkey vegetable soup with potato and cheese, chunky style, canned or ready-to-serve
28340700 Bird's nest soup
28340750 Hot and sour soup
28340800 Chicken or turkey soup with vegetables and fruit, Asian Style
28345010 Chicken or turkey soup, cream of, canned, reduced sodium, NS as to made with milk or water
28345020 Chicken or turkey soup, cream of, canned, reduced sodium, made with milk
28345030 Chicken or turkey soup, cream of, canned, reduced sodium, made with water
28345110 Chicken or turkey soup, cream of, NS as to prepared with milk or water
28345120 Chicken or turkey soup, cream of, prepared with milk
28345130 Chicken or turkey soup, cream of, prepared with water
28345160 Chicken or turkey mushroom soup, cream of, prepared with milk
28345170 Duck soup
28350050 Fish chowder
28350110 Crab soup, NS as to tomato-base or cream style
28350120 Crab soup, tomato-base
28350210 Clam chowder, NS as to Manhattan or New England style
28350220 Clam chowder, Manhattan
28350310 Turtle and vegetable soup
28351110 Fish and vegetable soup, no potatoes, Mexican style
28351120 Fish soup with potatoes, Mexican style
28351160 Codfish, rice, and vegetable soup, Puerto Rican style
28351170 Codfish soup with noodles, Puerto Rican style
28355110 Clam chowder, New England, NS as to prepared with water or milk
28355120 Clam chowder, New England, prepared with milk
28355130 Clam chowder, New England, prepared with water
28355140 Clam chowder, New England, reduced sodium, canned or ready-to-serve
28355210 Crab soup, cream of, prepared with milk
28355250 Lobster bisque
28355260 Lobster gumbo
28355310 Oyster stew

28355350 Salmon soup, cream style
 28355410 Shrimp soup, cream of, NS as to prepared with milk or water
 28355420 Shrimp soup, cream of, prepared with milk
 28355430 Shrimp soup, cream of, prepared with water
 28355440 Shrimp gumbo
 28355450 Seafood soup with potatoes and vegetables including carrots, broccoli, and/or dark-green leafy
 28355460 Seafood soup with potatoes, and vegetables excluding carrots, broccoli, and dark-green leafy
 28355470 Seafood soup with vegetables including carrots, broccoli, and/or dark-green leafy; no potatoes
 28355480 Seafood soup with vegetables excluding carrots, broccoli, and dark-green leafy; no potatoes
 28360100 Meat broth, Puerto Rican style
 28360210 Spanish vegetable soup, Puerto Rican style
 32300100 Egg drop soup
 32301100 Garlic egg soup, Puerto Rican style
 41601010 Bean soup, NFS
 41601020 Bean with bacon or ham soup, canned or ready-to-serve
 41601030 Black bean soup, home recipe, canned or ready-to-serve
 41601040 Lima bean soup, home recipe, canned or ready-to-serve
 41601070 Soybean soup, miso broth
 41601080 Pinto bean soup, home recipe, canned or ready-to-serve
 41601090 Bean soup, with macaroni, home recipe, canned, or ready-to-serve
 41601100 Portuguese bean soup, home recipe, canned or ready-to-serve
 41601110 Bean and ham soup, chunky style, canned or ready-to-serve
 41601130 Bean soup, mixed beans, home recipe, canned or ready-to-serve
 41601160 Bean and ham soup, canned, reduced sodium, prepared with water or ready-to-serve
 41602010 Pea and ham soup, chunky style, canned or ready-to-serve
 41602020 Garbanzo bean or chickpea soup, home recipe, canned or ready-to-serve
 41602030 Split pea and ham soup
 41602050 Split pea soup
 41602070 Split pea soup, canned, reduced sodium, prepared with water or ready-to-serve
 41602090 Split pea and ham soup, canned, reduced sodium, prepared with water or ready-to-serve
 41603010 Lentil soup, home recipe, canned, or ready-to-serve
 58155410 Soupy rice with chicken, Puerto Rican style
 58155510 Soupy rice mixture with chicken and potatoes, Puerto Rican style
 58400000 Soup, NFS
 58400100 Noodle soup, NFS
 58400200 Rice soup, NFS
 58401010 Barley soup, home recipe, canned, or ready-to-serve
 58401200 Barley soup, sweet, with or without nuts, Asian Style
 58402010 Beef noodle soup, canned or ready-to-serve
 58402020 Beef dumpling soup, home recipe, canned or ready-to-serve

58402030 Beef rice soup, home recipe, canned or ready-to-serve
 58403010 Chicken or turkey noodle soup, canned or ready-to-serve
 58403050 Chicken or turkey noodle soup, cream of, home recipe, canned, or ready-to-serve
 58403060 Chicken or turkey noodle soup, reduced sodium, canned or ready-to-serve
 58403100 Noodle and potato soup, Puerto Rican style
 58404010 Chicken or turkey rice soup, canned, or ready-to-serve
 58404040 Chicken or turkey rice soup, reduced sodium, canned, prepared with water or ready-to-serve
 58404050 Chicken or turkey rice soup, reduced sodium, canned, prepared with milk
 58404100 Rice and potato soup, Puerto Rican style
 58404500 Matzo ball soup
 58404510 Chicken or turkey soup with dumplings and potatoes, home recipe, canned, or ready-to-serve
 58404520 Chicken or turkey soup with dumplings, home recipe, canned or ready-to-serve
 58407010 Instant soup, noodle
 58407030 Soup, mostly noodles
 58407035 Soup, mostly noodles, reduced sodium
 58407050 Instant soup, noodle with egg, shrimp or chicken
 58408010 Wonton soup
 58408500 Noodle soup with vegetables, Asian style
 58409000 Noodle soup, with fish ball, shrimp, and dark green leafy vegetable
 58421000 Sopa seca, Mexican style, NFS
 63415100 Soup, fruit
 71801000 Potato soup, NS as to made with milk or water
 71801010 Potato soup, cream of, prepared with milk
 71801020 Potato soup, prepared with water
 71801100 Potato and cheese soup
 71803010 Potato chowder
 71851010 Plantain soup, Puerto Rican style
 72302000 Broccoli soup, prepared with milk, home recipe, canned or ready-to-serve
 72302020 Broccoli soup, prepared with water, home recipe, canned, or ready-to-serve
 72302100 Broccoli cheese soup, prepared with milk, home recipe, canned, or ready-to-serve
 72306000 Watercress broth with shrimp
 72307000 Spinach soup
 72308000 Dark-green leafy vegetable soup with meat, Asian style
 72308500 Dark-green leafy vegetable soup, meatless, Asian style
 73501000 Carrot soup, cream of, prepared with milk, home recipe, canned or ready-to-serve
 73501010 Carrot with rice soup, cream of, prepared with milk, home recipe, canned or ready-to-serve
 73502000 Squash, winter type, soup, home recipe, canned, or ready-to-serve
 74601000 Tomato soup, NFS
 74601010 Tomato soup, cream of, prepared with milk
 74602010 Tomato soup, prepared with water, or ready-to-serve
 74602050 Tomato soup, instant type, prepared with water

74602200 Tomato soup, canned, reduced sodium, prepared with water, or ready-to-serve
 74602300 Tomato soup, canned, reduced sodium, prepared with milk
 74603010 Tomato beef soup, prepared with water
 74604010 Tomato beef noodle soup, prepared with water
 74604100 Tomato beef rice soup, prepared with water
 74604500 Tomato noodle soup, canned, prepared with water or ready-to-serve
 74604600 Tomato noodle soup, canned, prepared with milk
 74605010 Tomato rice soup, prepared with water
 74606010 Tomato vegetable soup, prepared with water
 74606020 Tomato vegetable soup with noodles, prepared with water
 75600150 Soup, cream of, NFS
 75601000 Asparagus soup, cream of, NS as to made with milk or water
 75601010 Asparagus soup, cream of, prepared with milk
 75601020 Asparagus soup, cream of, prepared with water
 75601100 Borscht
 75601200 Cabbage soup, home recipe, canned or ready-to-serve
 75601210 Cabbage with meat soup, home recipe, canned or ready-to-serve
 75603010 Celery soup, cream of, prepared with milk, home recipe, canned or ready-to-serve
 75603020 Celery soup, cream of, prepared with water, home recipe, canned or ready-to-serve
 75604010 Corn soup, cream of, prepared with milk
 75604020 Corn soup, cream of, prepared with water
 75604600 Gazpacho
 75605010 Leek soup, cream of, prepared with milk
 75607000 Mushroom soup, NFS
 75607010 Mushroom soup, cream of, prepared with milk
 75607020 Mushroom soup, cream of, prepared with water
 75607040 Mushroom soup, with meat broth, prepared with water
 75607050 Mushroom soup, cream of, low sodium, prepared with water
 75607060 Mushroom soup, cream of, NS as to made with milk or water
 75607080 Mushroom with chicken soup, cream of, prepared with milk
 75607090 Mushroom soup, cream of, canned, reduced sodium, NS as to made with milk or water
 75607100 Mushroom soup, cream of, canned, reduced sodium, prepared with milk
 75607140 Mushroom soup, cream of, canned, reduced sodium, prepared with water
 75608010 Onion soup, cream of, prepared with milk
 75608100 Onion soup, French
 75608200 Onion soup, made from dry mix
 75609010 Pea soup, prepared with milk
 75611010 Vegetable soup, cream of, prepared with milk
 75612010 Zucchini soup, cream of, prepared with milk
 75646010 Shav soup
 75647000 Seaweed soup
 75649010 Vegetable soup, canned, prepared with water or ready-to-serve
 75649040 Vegetable soup, reduced sodium, canned, ready to serve

75649050 Vegetable soup, made from dry mix
 75650990 Minestrone soup, reduced sodium, canned or ready-to-serve
 75651010 Minestrone soup, canned, prepared with water, or ready-to-serve
 75651020 Vegetable beef soup, canned, prepared with water, or ready-to-serve
 75651030 Vegetable beef noodle soup, prepared with water
 75651040 Vegetable noodle soup, canned, prepared with water, or ready-to-serve
 75651070 Vegetable rice soup, canned, prepared with water or ready-to-serve
 75651080 Vegetable beef soup with rice, canned, prepared with water or ready-to-serve
 75651110 Vegetable chicken rice soup, canned, prepared with water or ready-to-serve
 75651150 Vegetable noodle soup, reduced sodium, canned, prepared with water or ready-to-serve
 75652030 Vegetable beef soup, canned, prepared with milk
 75654010 Vegetarian vegetable soup, prepared with water
 75656010 Vegetable soup, Spanish style, stew type
 75656020 Vegetable soup, chunky style
 75656040 Vegetable soup, with pasta, chunky style
 75656060 Vegetable beef soup, chunky style
 75657000 Vegetable broth, bouillon

Toddler Foods (12 to 24 Months)

[scFOS] = 6.7 g/100 g

27601000 Beef stew, baby food, toddler
 27610730 Beef with vegetables, baby food, toddler
 27640810 Chicken, noodles, and vegetables, baby food, toddler
 27641000 Chicken stew, baby food, toddler
 27642130 Turkey, rice, and vegetables, baby food, toddler
 58503050 Macaroni with beef and tomato sauce, baby food, toddler
 58508300 Macaroni and cheese, baby food, toddler
 58509100 Ravioli, cheese-filled, with tomato sauce, baby food, toddler
 67100110 Fruit bar, with added vitamin C, baby food, toddler
 67100300 Apples, baby food, toddler
 67108030 Peaches, baby food, toddler
 67109030 Pears, baby food, toddler
 76201030 Carrots, baby food, toddler
 76401060 Beans, green string, baby food, toddler
 76409030 Peas, baby food, toddler
 76420000 Potatoes, baby food, toddler
 76607100 Potatoes with cheese and broccoli, baby food, toddler

Adjusted for not being reconstituted, 15 g of powder to 110 mL of water
[scFOS] = 55.81 g/100 g

57806200 Oatmeal cereal with fruit, baby food, dry, instant, toddler

Yogurt

[scFOS] = 0.4 g/100 g

11400000 Yogurt, NFS
11400010 Yogurt, Greek, NS as to type of milk or flavor
11410000 Yogurt, NS as to type of milk or flavor
11411010 Yogurt, NS as to type of milk, plain
11411100 Yogurt, whole milk, plain
11411200 Yogurt, low fat milk, plain
11411300 Yogurt, nonfat milk, plain
11411390 Yogurt, Greek, NS as to type of milk, plain
11411400 Yogurt, Greek, whole milk, plain
11411410 Yogurt, Greek, low fat milk, plain
11411420 Yogurt, Greek, nonfat milk, plain
11430000 Yogurt, NS as to type of milk, fruit
11431000 Yogurt, whole milk, fruit
11432000 Yogurt, low fat milk, fruit
11433000 Yogurt, nonfat milk, fruit
11433990 Yogurt, Greek, NS as to type of milk, fruit
11434000 Yogurt, Greek, whole milk, fruit
11434010 Yogurt, Greek, low fat milk, fruit
11434020 Yogurt, Greek, nonfat milk, fruit
11434090 Yogurt, NS as to type of milk, flavors other than fruit
11434100 Yogurt, whole milk, flavors other than fruit
11434200 Yogurt, low fat milk, flavors other than fruit
11434300 Yogurt, nonfat milk, flavors other than fruit
11435000 Yogurt, Greek, NS as to type of milk, flavors other than fruit
11435010 Yogurt, Greek, whole milk, flavors other than fruit
11435020 Yogurt, Greek, low fat milk, flavors other than fruit
11435030 Yogurt, Greek, nonfat milk, flavors other than fruit
11435100 Yogurt, Greek, with oats
11446000 Yogurt parfait, low fat, with fruit

Mixed foods containing yogurt

Adjusted for yogurt content of 34.6%

[scFOS] = 0.14 g/100 g

83115000 Yogurt dressing

Bars

[scFOS] = 15 g/100 g

- 53710400 Cereal or granola bar (General Mills Fiber One Chewy Bar)
- 53710500 Cereal or granola bar (Kellogg's Nutri-Grain Cereal Bar)
- 53710502 Cereal or granola bar (Kellogg's Nutri-Grain Yogurt Bar)
- 53710504 Cereal or granola bar (Kellogg's Nutri-Grain Fruit and Nut Bar)
- 53710600 Milk 'n Cereal bar
- 53710700 Cereal or granola bar (Kellogg's Special K bar)
- 53710800 Cereal or granola bar (Kashi Chewy)
- 53710802 Cereal or granola bar (Kashi Crunchy)
- 53710900 Cereal or granola bar (General Mills Nature Valley Chewy Trail Mix)
- 53710902 Cereal or granola bar, with yogurt coating (General Mills Nature Valley Chewy Granola Bar)
- 53710904 Cereal or granola bar (General Mills Nature Valley Sweet and Salty Granola Bar)
- 53710906 Cereal or granola bar (General Mills Nature Valley Crunchy Granola Bar)
- 53711000 Cereal or granola bar (Quaker Chewy Granola Bar)
- 53711002 Cereal or granola bar (Quaker Chewy 90 Calorie Granola Bar)
- 53711004 Cereal or granola bar (Quaker Chewy 25% Less Sugar Granola Bar)
- 53711006 Cereal or granola bar (Quaker Chewy Dipp's Granola Bar)
- 53711100 Cereal or granola bar (Quaker Granola Bites)
- 53712000 Snack bar, oatmeal
- 53712100 Cereal or Granola bar, NFS
- 53712200 Cereal or granola bar, lowfat, NFS
- 53712210 Cereal or granola bar, nonfat
- 53713000 Cereal or granola bar, reduced sugar, NFS
- 53713100 Cereal or granola bar, peanuts , oats, sugar, wheat germ
- 53714200 Cereal or granola bar, chocolate coated, NFS
- 53714210 Cereal or granola bar, with coconut, chocolate coated
- 53714220 Cereal or granola bar with nuts, chocolate coated
- 53714230 Cereal or granola bar, oats, nuts, coated with non-chocolate coating
- 53714250 Cereal or granola bar, coated with non-chocolate coating
- 53714300 Cereal or granola bar, high fiber, coated with non-chocolate yogurt coating
- 53714400 Cereal or granola bar, with rice cereal
- 53714500 Breakfast bar, NFS
- 53714510 Breakfast bar, date, with yogurt coating
- 53714520 Breakfast bar, cereal crust with fruit filling, lowfat
- 53720100 Nutrition bar (Balance Original Bar)
- 53720200 Nutrition bar (Clif Bar)
- 53720210 Nutrition bar (Clif Kids Organic Zbar)
- 53720300 Nutrition bar (PowerBar)
- 53720400 Nutrition bar (Slim Fast Original Meal Bar)
- 53720500 Nutrition bar (Snickers Marathon Protein Bar)
- 53720600 Nutrition bar (South Beach Living Meal Bar)

- 53720610 Nutrition bar (South Beach Living High Protein Bar)
- 53720700 Nutrition bar (Tiger's Milk)
- 53720800 Nutrition bar (Zone Perfect Classic Crunch)
- 53729000 Nutrition bar or meal replacement bar, NFS

Meal Replacement Shakes (milk-based and non-milk-based)

[scFOS] = 2.5 g/100 g

- 95101000 Nutritional drink or shake, ready-to-drink (Boost)
- 95101010 Nutritional drink or shake, ready-to-drink (Boost Plus)
- 95102000 Nutritional drink or shake, ready-to-drink (Carnation Instant Breakfast)
- 95103000 Nutritional drink or shake, ready-to-drink (Ensure)
- 95103010 Nutritional drink or shake, ready-to-drink (Ensure Plus)
- 95104000 Nutritional drink or shake, ready-to-drink, sugar free (Glucerna)
- 95105000 Nutritional drink or shake, ready-to-drink (Kellogg's Special K Protein)
- 95106000 Nutritional drink or shake, ready-to-drink (Muscle Milk)
- 95106010 Nutritional drink or shake, ready-to-drink, light (Muscle Milk)
- 95110000 Nutritional drink or shake, ready-to-drink (Slim Fast)
- 95110010 Nutritional drink or shake, ready-to-drink, sugar free (Slim Fast)
- 95110020 Nutritional drink or shake, high protein, ready-to-drink (Slim Fast)
- 95120000 Nutritional drink or shake, ready-to-drink, NFS
- 95120010 Nutritional drink or shake, high protein, ready-to-drink, NFS
- 95120020 Nutritional drink or shake, high protein, light, ready-to-drink, NFS
- 95120050 Nutritional drink or shake, liquid, soy-based

Adjusted for not being reconstituted, 44 g of powder to 240 mL of water

[scFOS] = 15 g/100 g

- 95220000 Nutritional powder mix, NFS
- 95220010 Nutritional powder mix, high protein, NFS

Adjusted for not being reconstituted, 29 g powder to 200 mL of water/milk or 42 g of powder to 240 mL of water/milk

[scFOS] = 17.5 g/100 g

- 95201200 Nutritional powder mix (EAS Whey Protein Powder)
- 95201300 Nutritional powder mix (EAS Soy Protein Powder)
- 95201500 Nutritional powder mix, high protein (Herbalife)
- 95201600 Nutritional powder mix (Isopure)
- 95201700 Nutritional powder mix (Kellogg's Special K20 Protein Water)
- 95230000 Nutritional powder mix, whey based, NFS
- 95230010 Nutritional powder mix, protein, soy based, NFS
- 95230020 Nutritional powder mix, protein, light, NFS
- 95230030 Nutritional powder mix, protein, NFS

Adjusted for not being reconstituted, 35 g of powder to 240 mL of water/milk or 50 g powder to 355 mL of water/milk

[scFOS] = 20 g/100 g

- 95201000 Nutritional powder mix (Carnation Instant Breakfast)
- 95201010 Nutritional powder mix, sugar free (Carnation Instant Breakfast)
- 95202000 Nutritional powder mix (Muscle Milk)
- 95202010 Nutritional powder mix, light (Muscle Milk)

Adjusted for not being reconstituted, 26 g of powder to 240 mL of milk

[scFOS] = 25 g/100 g

- 95210000 Nutritional powder mix (Slim Fast)
- 95210010 Nutritional powder mix, sugar free (Slim Fast)
- 95210020 Nutritional powder mix, high protein (Slim Fast)

Dairy Beverages

[scFOS] = 1.3 g/100 g

- 11100000 Milk, NFS
- 11111000 Milk, whole
- 11111100 Milk, low sodium, whole
- 11111150 Milk, calcium fortified, whole
- 11111160 Milk, calcium fortified, low fat (1%)
- 11111170 Milk, calcium fortified, fat free (skim)
- 11112110 Milk, reduced fat (2%)
- 11112210 Milk, low fat (1%)
- 11113000 Milk, fat free (skim)
- 11114300 Milk, lactose free, low fat (1%)
- 11114320 Milk, lactose free, fat free (skim)
- 11114330 Milk, lactose free, reduced fat (2%)
- 11114350 Milk, lactose free, whole
- 11115000 Buttermilk, fat free (skim)
- 11115100 Buttermilk, low fat (1%)
- 11115200 Buttermilk, reduced fat (2%)
- 11115300 Buttermilk, whole
- 11115400 Kefir, NS as to fat content
- 11120000 Milk, dry, reconstituted, NS as to fat content
- 11121100 Milk, dry, reconstituted, whole
- 11121210 Milk, dry, reconstituted, low fat (1%)
- 11121300 Milk, dry, reconstituted, fat free (skim)
- 11436000 Yogurt, liquid
- 11511000 Chocolate milk, NFS
- 11511100 Chocolate milk, ready to drink, whole
- 11511200 Chocolate milk, ready to drink, reduced fat

11511300 Chocolate milk, ready to drink, fat free
11511400 Chocolate milk, ready to drink, low fat
11511550 Chocolate milk, ready to drink, reduced sugar, NS as to milk
11511600 Chocolate milk, ready to drink, low fat (Nesquik)
11511610 Chocolate milk, ready to drink, fat free (Nesquik)
11511700 Chocolate milk, ready to drink, low fat, no sugar added (Nesquik)
11512010 Hot chocolate / Cocoa, ready to drink
11512020 Hot chocolate / Cocoa, ready to drink, made with nonfat milk
11512100 Hot chocolate / Cocoa, ready to drink, with whipped cream
11512110 Hot chocolate / Cocoa, ready to drink, made with nonfat milk and whipped cream
11513000 Chocolate milk, made from dry mix, NS as to type of milk
11513100 Chocolate milk, made from dry mix with whole milk
11513150 Chocolate milk, made from dry mix with reduced fat milk
11513200 Chocolate milk, made from dry mix with low fat milk
11513300 Chocolate milk, made from dry mix with fat free milk
11513350 Chocolate milk, made from reduced sugar mix, NS as to type of milk
11513355 Chocolate milk, made from reduced sugar mix with whole milk
11513360 Chocolate milk, made from reduced sugar mix with reduced fat milk
11513365 Chocolate milk, made from reduced sugar mix with low fat milk
11513370 Chocolate milk, made from reduced sugar mix with fat free milk
11513380 Chocolate milk, made from dry mix, NS as to type of milk (Nesquik)
11513381 Chocolate milk, made from dry mix with whole milk (Nesquik)
11513382 Chocolate milk, made from dry mix with reduced fat milk (Nesquik)
11513383 Chocolate milk, made from dry mix with low fat milk (Nesquik)
11513384 Chocolate milk, made from dry mix with fat free milk (Nesquik)
11513390 Chocolate milk, made from no sugar added dry mix, NS as to type of milk (Nesquik)
11513391 Chocolate milk, made from no sugar added dry mix with whole milk (Nesquik)
11513392 Chocolate milk, made from no sugar added dry mix with reduced fat milk (Nesquik)
11513393 Chocolate milk, made from no sugar added dry mix with low fat milk (Nesquik)
11513394 Chocolate milk, made from no sugar added dry mix with fat free milk (Nesquik)
11513400 Chocolate milk, made from syrup, NS as to type of milk
11513500 Chocolate milk, made from syrup with whole milk
11513550 Chocolate milk, made from syrup with reduced fat milk
11513600 Chocolate milk, made from syrup with low fat milk
11513700 Chocolate milk, made from syrup with fat free milk
11513800 Chocolate milk, made from light syrup, NS as to type of milk
11513801 Chocolate milk, made from light syrup with whole milk
11513802 Chocolate milk, made from light syrup with reduced fat milk
11513803 Chocolate milk, made from light syrup with low fat milk
11513804 Chocolate milk, made from light syrup with fat free milk
11513850 Chocolate milk, made from sugar free syrup, NS as to type of milk
11513851 Chocolate milk, made from sugar free syrup with whole milk
11513852 Chocolate milk, made from sugar free syrup with reduced fat milk

11513853 Chocolate milk, made from sugar free syrup with low fat milk
 11513854 Chocolate milk, made from sugar free syrup with fat free milk
 11514100 Hot chocolate / Cocoa, made with dry mix and water
 11514110 Hot chocolate / Cocoa, made with dry mix and whole milk
 11514120 Hot chocolate / Cocoa, made with dry mix and reduced fat milk
 11514130 Hot chocolate / Cocoa, made with dry mix and low fat milk
 11514140 Hot chocolate / Cocoa, made with dry mix and fat free milk
 11514320 Hot chocolate / Cocoa, made with no sugar added dry mix and whole milk
 11514330 Hot chocolate / Cocoa, made with no sugar added dry mix and reduced fat milk
 11514340 Hot chocolate / Cocoa, made with no sugar added dry mix and low fat milk
 11514350 Hot chocolate / Cocoa, made with no sugar added dry mix and fat free milk
 11519040 Strawberry milk, NFS
 11519050 Strawberry milk, whole
 11519105 Strawberry milk, reduced fat
 11519200 Strawberry milk, low fat
 11519205 Strawberry milk, fat free
 11526000 Milk, malted
 11531000 Eggnog, regular
 11531500 Eggnog, lowfat / light
 11541400 Milk shake with malt
 11542100 Milk shake, fast food, chocolate
 11542200 Milk shake, fast food, flavors other than chocolate
 11543000 Milk shake, bottled, chocolate
 11543010 Milk shake, bottled, flavors other than chocolate
 11553110 Fruit smoothie, with whole fruit and dairy
 11553120 Fruit smoothie, with whole fruit and dairy, added protein
 11553130 Fruit smoothie juice drink, with dairy
 11560000 Chocolate milk drink
 92610030 Horchata beverage, made with milk
 92611100 Oatmeal beverage with milk
 92613510 Cornmeal beverage with chocolate milk

Adjusted for not being reconstituted, 25 g of powder to 240 mL of water
 [scFOS] = 13.78 g/100 g

11830100 Hot chocolate / Cocoa, dry mix, not reconstituted
 11830115 Hot chocolate / Cocoa, dry mix, no sugar added, not reconstituted
 11830150 Cocoa powder, not reconstituted
 11830160 Chocolate beverage powder, dry mix, not reconstituted
 11830165 Chocolate beverage powder, reduced sugar, dry mix, not reconstituted
 11830260 Milk, malted, dry mix, not reconstituted

Adjusted for not being reconstituted, 24 g of powder to 240 mL of water milk
[scFOS] = 14.3 g/100 g

- 11810000 Milk, dry, not reconstituted, NS as to fat content
- 11811000 Milk, dry, not reconstituted, whole
- 11812000 Milk, dry, not reconstituted, low fat (1%)
- 11813000 Milk, dry, not reconstituted, fat free (skim)

Dairy Product Analogs

[scFOS] = 1.3 g/100 g

- 11300100 Non-dairy milk, NFS
- 11320000 Soy milk
- 11320100 Soy milk, light
- 11320200 Soy milk, nonfat
- 11321000 Soy milk, chocolate
- 11321100 Soy milk, light, chocolate
- 11321200 Soy milk, nonfat, chocolate
- 11340000 Imitation milk, non-soy, sweetened
- 11350000 Almond milk, sweetened
- 11350010 Almond milk, sweetened, chocolate
- 11350020 Almond milk, unsweetened
- 11350030 Almond milk, unsweetened, chocolate
- 11360000 Rice milk
- 11370000 Coconut milk
- 11512030 Hot chocolate / Cocoa, ready to drink, made with non-dairy milk
- 11512120 Hot chocolate / Cocoa, ready to drink, made with non-dairy milk and whipped cream
- 11513310 Chocolate milk, made from dry mix with non-dairy milk
- 11513375 Chocolate milk, made from reduced sugar mix with non-dairy milk
- 11513385 Chocolate milk, made from dry mix with non-dairy milk (Nesquik)
- 11513395 Chocolate milk, made from no sugar added dry mix with non-dairy milk (Nesquik)
- 11513750 Chocolate milk, made from syrup with non-dairy milk
- 11513805 Chocolate milk, made from light syrup with non-dairy milk
- 11513855 Chocolate milk, made from sugar free syrup with non-dairy milk
- 11514150 Hot chocolate / Cocoa, made with dry mix and non-dairy milk
- 11514360 Hot chocolate / Cocoa, made with no sugar added dry mix and non-dairy milk
- 11519215 Strawberry milk, non-dairy



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October 8, 2021

Via Electronic Mail

Ellen T. Anderson
Division of Food Ingredients
Office of Food Additive Safety
Center for Food Safety and Applied
Nutrition
Food and Drug Administration

Re: Responses to FDA Questions regarding GRN 1006 (Short-Chain Fructooligosaccharides (scFOS))

Dear Ms. Anderson,

The purpose of this letter is to provide responses to FDA's September 24, 2021 questions regarding GRN 1006 for Short-Chain Fructooligosaccharides (scFOS). For clarity and convenience, we have repeated FDA's questions in bold below, followed by our responses.

1. Please provide a statement confirming that all raw materials and processing aids (e.g., ion exchange resins, etc.) used in the manufacture of scFOS are food grade and used in accordance with applicable U.S. regulations.

All raw materials and processing aids used in the manufacture of scFOS are food grade and used in accordance with applicable U.S. regulations.

2. The specifications for scFOS provided in the notice appear to only apply to the powder form of scFOS. Please provide specifications for the syrup form of scFOS.

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Specifications for Food Grade scFOS - Liquid

Parameter	Unit	Specification	Method
Appearance	-	Pale yellow syrup	Visual
Flavor	-	Standard, clean slightly sweet	Internal Method (Sensory)
Odor	-	Standard, odorless	
Total scFOS	% db	NLT 95.0	Internal Method (High-Performance Liquid Chromatography)
1-Kestose (GF2)	% db	30-42	
Nystose (GF3)	% db	45-57	
Fructofuranosylnystose (GF4)	% db	5-15	
Sugars (sucrose, glucose, fructose)	% db	NMT 5.0	
Ash	%	NMT 0.05	Internal Method (conductivity)
Dry Substance	%	70-73	Internal Method (Refractive Index)
pH (as is)	-	5.0-7.5	Internal Method
Lead	mg/kg	NMT 1.0	ICP MS Heavy Metals AOAC 2015.01 Mod<2232
Arsenic	mg/kg	NMT 1.0	
Standard plate count	cfu ³ /g	NMT 300	Internal Methods (based on AOAC methods)
Yeast	cfu/g	NMT 20	
Mold	cfu/g	NMT 20	
Coliforms	cfu/g	NMT 10	
<i>Escherichia coli</i>	cfu/10 g	Negative	Current USP/NF,62
Anaerobic Mesospores	cfu/g	NMT 10	Compendium of Methods for the Microbiological Examination of Foods (CMMEF), 5th ed.
Aerobic Thermophilic Spores	cfu/10 g	NMT 10	
Anaerobic thermophilic spores	Tubes Positive	NMT 10	CMMEF, 4th ed.
Aerobic mesophilic spores	cfu/g	NMT 10	CMMEF, 5th ed.
<i>Salmonella</i> spp. PCR	cfu/100 g	Negative	AOAC-RI100201
Coagulase-positive <i>Staphylococci</i>	cfu/10 g	Negative	Current USP/NF,62
<i>Enterobacteriaceae</i> MPN ⁴	cfu/30 g	Negative	ISO21528-1:2017

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Internal methods have been validated

¹NLT = Not less than

²NMT= Not more than

³Cfu: Colony forming unit

⁴MPN: Most probable number.

3. For the specifications provided, please indicate when the determination is on a dry matter basis.

The Carbohydrate Profile including sugars (fructose, glucose, sucrose), GF2 (1-Kestose), GF3 (Nystose), GF4 (Fructofuranosylnystose), and total Fructooligosaccharides are analyzed on a dry matter basis for both the dry and liquid forms of scFOS.

4. The specifications provided in the notice include a limit for “sugars.” Please clarify the identity of the sugars that are included for this specified limit (e.g., glucose, fructose, and sucrose).

The sugar content in both the liquid and powder scFOS products include sucrose, glucose, and fructose.

5. We note that the stability of scFOS is not discussed in the notice. Please provide a discussion of the stability of scFOS, including any studies of stability conducted with the powder and syrup forms of scFOS produced by the method described in the notice.

Stability data for dry scFOS

A 24-months shelf-life study was conducted at 25°C and 33% relative humidity to ensure the integrity of the scFOS. Testing for microbial identification and growth was also conducted to verify that parameters are maintained within specification. The integrity of the ingredient was measured using an HPLC method. Results for all parameters tested were within specification throughout the 24 months shelf-life study.

Lot #	Test	Specification	Storage Time (Months)					
			0	1	3	12	18	24
MSA-434-359	SPC/g*	SPC 300	3.0x10 ¹	4.0x10 ¹	1.0x10 ¹	2.0x10 ¹	1.0x10 ¹	2.0x10 ¹
	Coliforms	NMT 10	Negative	Negative	Negative	Negative	Negative	Negative
	scFOS (% db)**	NLT 95	97.6	97.4	97.9	97.8	97.8	97.4
	SPC/g*	SPC 300	2.0x10 ¹	2.0x10 ¹	4.0x10 ¹	0.5x10 ¹	1.0x10 ¹	3.0x10 ¹

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MS-510-069	Coliforms	NMT 10	Negative	Negative	Negative	Negative	Negative	Negative
	scFOS (% db)**	NLT 95	96.0	96.0	96.3	95.8	96.0	95.7

NLT = Not less than

NMT= Not more than

*Standard plate count

**Reported as % on a dry basis

Stability data for liquid scFOS

A shelf-life study was conducted for a period of 9 months for liquid scFOS with added buffers (citric acid monohydrate and sodium phosphate dibasic dihydrate).¹ The purpose of the study was to ensure that the product stability is maintained when stored under the recommended storage temperature of 68 - 86°F (20°C - 30°C) during its shelf life. The chemical stability of the liquid scFOS (with 70-72% dry substance) was evaluated by measuring its total scFOS content and pH using HPLC and pH meter, respectively. Microbial testing of the product was also conducted to verify that parameters are maintained within specification. As shown in the table below, the results for all parameters tested were within specification throughout the 9 months of shelf-life stability study.

Lot #	Test	Specification	Storage Time (Months)		
			0	6	9
3036251200	Total scFOS (% db)*	NLT 95.0	95.9	95.8	96.1
	pH (as is)	5.0-7.5	7.1	6.6	6.6
	TPC (cfu/g)**	NMT 300	<10	<10	<10
	Coliforms (cfu/g)	NMT 10	<1	<1	<1
3030016300	Total scFOS (% db)*	NLT 95.0	96.0	96.2	96.1
	pH (as is)	5.0-7.5	7.0	6.5	6.4
	TPC (cfu/g)**	NMT 300	40	40	15
	Coliforms (cfu/g)	NMT 10	<10	<10	<10

NLT = Not less than

NMT= Not more than

*Reported as % on a dry basis

**Total plate count

6. In the notice, Ingredient provides an updated assessment of the dietary exposure to scFOS from previously notified and proposed intended uses in foods other than use in

¹ Liquid FOS is blended with buffers to extend the shelf life to 9 months. The buffers, citric acid monohydrate and sodium phosphate dibasic dihydrate are used in accordance with 184.1033 and 182.1778, respectively.

infant formula. Given that scFOS has existing uses in infant formula, we request that, in the narrative, Ingredient address whether they considered the potential cumulative dietary exposure to scFOS in infants resulting from both the intended use in foods combined with intended uses of scFOS in infant formula that have been the subject of other GRAS notices. Furthermore, please provide a short narrative explaining why exposure stemming from infants that may consume both infant formula and conventional foods is not expected to be a safety concern.

Ingredient is aware of other GRAS notices which cover the use of scFOS in infant formula. The most recent of these to receive a “no questions” letter from the FDA is GRN 797 which calculated a 90th percentile exposure to scFOS from the intended use in infant formula of 1,035 to 1,090 mg/kg bw/day during the period of highest formula consumption (first 6 weeks of life) and decreasing as the infant grows to ~800 mg/kg bw/day from 6-12 months of life. Ingredient has conducted an exposure assessment for scFOS for the intended uses described in GRN 1006 of 1,030 mg/kg bw/day for infants (0-1 years of age) as shown in Table 6 of the GRAS notice. Caloric needs of infants \leq 1 year of age are well defined. As such any exposure to scFOS from the intended uses described in GRN 1006 in this target population will necessarily be substitutional (i.e., intake of formula with scFOS will result in a corresponding decrease to scFOS from other sources). As the maximum exposure calculated in GRN 797 is virtually the same (though slightly lower) than that calculated for GRN 1006, the overall exposure to scFOS in the target population which consumes both formula and other foods containing scFOS as described in these two GRNs would be very similar to, or slightly less than, the 90th percentile exposure of 1,035-1,090 mg/kg bw/day described in GRN 797.

7. On page 15 of the notice, the adult male subpopulation is described to have the highest estimated dietary exposure on a per person basis. We note that in Table 6 of the notice, toddlers (aged 1 to 2) are the subpopulation with the highest dietary exposure on a per body weight basis. Please provide a short narrative explaining why there is no safety concern in this potentially vulnerable subpopulation from your intended use.

In GRN 1006, the notifier calculates a mean exposure to scFOS for toddlers (1-2 years old) of 7 g/day (0.8 g/kg bw/day) and a 90th percentile exposure of 17 g/day (1.32 g/kg bw/day). As a non-digestible fiber, scFOS primarily acts as a “prebiotic” and is fermented in the digestive tract by intestinal microflora. Reported adverse events from the published literature are typically very mild and are consistent across all age groups and are typically described as mild gastrointestinal discomfort (distention, bloating, gas, etc.). Further, literature reports of human trials which fed children in this age range scFOS or other similar long and short-chain oligosaccharides indicate these exposures would be expected to be safe for the target population.

KELLER AND HECKMAN LLP

Ellen T. Anderson

October 8, 2021

Page 6

- da Silva Souza et al. 2018² randomized 36 children between 6 months and 24 months in age to either placebo or scFOS groups. Children in the treatment group received an amount of scFOS based on their bodyweight for 4 weeks. Bodyweight groups were 6.0-8.9 kg, 9.0-11.9 kg, and 12.0+ kg. These groups were given 6, 9 or 12 g/day scFOS respectively, which equates to 0.67-1 g/kg bw/day. Reported adverse events consisted of two children with mild gastrointestinal effects (abdominal distension and flatulence) and one child with vomiting, however these children continued treatment.
- Chatchatee et al. 2014³ randomized 767 children 11 to 29 months in age to control (cow's milk) or "growing up milk (GUM)" formulations with or without long-chain fructo-oligosacchariades (lcFOS), short-chain galacto-oligosaccharides (scGOS), and long-chain polyunsaturated fatty acids. The treatment group received GUM containing 1.2 g/100 mL scGOS and lcFOS at a 9:1 ratio. Children received up to 750 mL (containing 9 g/day combined scGOS and lcFOS) of these preparations for 52 weeks. The authors report a total of 2,217 adverse events including 78 serious adverse events. Only 29 adverse events were judged to be related to the treatment, none of them serious, and consisted of mild GI symptoms.

It is clear, from the totality of the evidence, that scFOS exposure to children 1-2 years of age is safe for its intended uses as described in GRN 1006.

Please let us know if you have any questions or need anything else.

Best regards,

A grey rectangular box redacting the signature of Evangelia Pelonis.

Evangelia Pelonis

² da Silva Souza *et al.* (2018) Randomized, double-blind, placebo-controlled parallel clinical trial assessing the effect of fructooligosaccharides in infants with constipation. *Nutrients*. 10:1602; doi:10.3390/nu1011602

³ Chatchae P. *et al.* (2014) Effects of growing-up milk supplemented with prebiotics and LCPUFAs on infections in young children. *JPGN* 58:428-37.

From: [Pelonis, Evangelia C.](#)
To: [Anderson, Ellen](#)
Subject: RE: [EXTERNAL] FW: GRN 001006
Date: Thursday, December 16, 2021 9:01:01 AM
Attachments: [image002.png](#)
[image003.png](#)
[image007.png](#)

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Hello Ellen,

Thanks for your email.

We have confirmed that the production strain for the β -fructofuranosidase enzyme used to manufacture scFOS as described in GRN 1006 is the same strain used in GRN 44 and GRN 537. The production strain, *Aspergillus fijiensis*, is classified under the American Type Culture Collection (ATCC) number 20611, it is not genetically engineered, and it is considered non-pathogenic and non-toxic.

Please let us know if you need anything else and we look forward to receiving FDA's response.
Happy Holidays!

Best regards,
Eve



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[dailyintakeblog.com](#)

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Law and Science®*

Evangelia C. Pelonis

Partner

direct [202.434.4106](tel:202.434.4106) pelonis@khlaw.com

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Washington, DC Brussels San Francisco Shanghai Boulder

From: Anderson, Ellen <Ellen.Anderson@fda.hhs.gov>
Sent: Wednesday, December 15, 2021 2:07 PM
To: Pelonis, Evangelia C. <pelonis@khlaw.com>
Subject: RE: [EXTERNAL] FW: GRN 001006

Hello Eve,

We are finishing up our review of GRN 001006 and have this follow-up question for the notifier:

The notifier states that the β -fructofuranosidase enzyme used to manufacture scFOS is produced by *Aspergillus fijiensis*, and that this "...enzyme acts as an invertase on sucrose molecules and a fructosyltransferase between both sucrose molecules and fructofuranosylsucrose molecules." The notifier also states that, "*A. fijiensis* is a synonym for *A. japonicus*, which is a member of the *niger* group." We note that there is no additional information about the enzyme or the production organism in the notice. The notifier further states that their scFOS is produced in a slightly different manner than the scFOS described in GRN 000044 and GRN 000537. For the administrative record, please clarify if the production strain *A. fijiensis* is the same strain described in GRNs 000044 and 000537, noting the strain's identity (i.e., the ATCC number), whether it is genetically engineered,

and whether it is non-pathogenic and non-toxicogenic.

We would appreciate a response at your earliest convenience; however, with the holidays approaching, we understand if a response is delayed.

Thank you!

Sincerely,
Ellen
Ellen Anderson
Regulatory Review Scientist

Center for Food Safety and Applied Nutrition
Office of Food Additive Safety
U.S. Food and Drug Administration
Tel: 240-402-1309
ellen.anderson@fda.hhs.gov

Pronouns: she/her/hers



From: Anderson, Ellen
Sent: Friday, October 08, 2021 1:43 PM
To: Pelonis, Evangelia C. <pelonis@khlaw.com>
Subject: RE: [EXTERNAL] FW: GRN 001006

Hello Eve,

Thank you for providing the responses to our questions. I will let you know if there are any follow-up questions after our review is complete.

Sincerely,
Ellen
Ellen Anderson
Regulatory Review Scientist

Center for Food Safety and Applied Nutrition
Office of Food Additive Safety
U.S. Food and Drug Administration
Tel: 240-402-1309
ellen.anderson@fda.hhs.gov

Pronouns: she/her/hers



From: Pelonis, Evangelia C. <pelonis@khlaw.com>
Sent: Friday, October 08, 2021 1:09 PM
To: Anderson, Ellen <Ellen.Anderson@fda.hhs.gov>
Subject: [EXTERNAL] FW: GRN 001006

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Dear Ms. Anderson,

Please find attached our responses to the additional information requested for GRN 1006.

Best,
Eve

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dailyintakeblog.com

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Evangelia C. Pelonis

Partner

direct [202.434.4106](tel:202.434.4106) pelonis@khlaw.com

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Washington, DC Brussels San Francisco Shanghai

From: Anderson, Ellen <Ellen.Anderson@fda.hhs.gov>
Sent: Friday, September 24, 2021 12:18 PM
To: Pelonis, Evangelia C. <pelonis@khlaw.com>
Subject: GRN 001006

Dear Ms. Pelonis,

Please see the attached letter regarding GRAS notice GRN 001006.

Sincerely,
Ellen
Ellen Anderson
Regulatory Review Scientist

Center for Food Safety and Applied Nutrition
Office of Food Additive Safety
U.S. Food and Drug Administration
Tel: 240-402-1309
ellen.anderson@fda.hhs.gov

Pronouns: she/her/hers



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