Indexing Dietary/Food supplements: LanguaL proposals

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1. What are Dietary/Food supplements?

The term food generally refers to substances intended for human consumption, normally with exceptions for e.g. medicines, and includes raw or processed food products and substances used in the manufacture. Dietary/food supplements are thus considered to be foods in most legislations.

Comment [JI1]: Both US and Europe regulate dietary supplements as foods.

Codex Alimentarius defines vitamin and mineral food supplements as:

> "sources in concentrated forms of those nutrients alone or in combinations, marketed in forms such as capsules, tablets, powders, solutions etc., that are designed to be taken in measured small-unit quantities but are not in a conventional food form and whose purpose is to supplement the intake of vitamins and/or minerals from the normal diet."[9]

According to Codex Alimentarius: "The name of the product shall be 'food supplement' with an indication of the category(ies) of nutrients or of the individual vitamin(s) and/or mineral(s) contained in the product as the case may be." Codex moreover stipulates that the supplements "should be labelled according to the Codex Standard for the Labelling of Prepackaged Foods (Codex-Stan 1-1985, Rev. 1-1991) as well as according to the General Guidelines on Claims (CAC/GL 1-1979)".

In the **European Union**, food supplements are framed by two kinds of regulations:

(i) The EU vertical regulation relating to food supplements, composed with the directive 2002/46/CE [10] (essentially for the definition of food supplements) and the regulation 1170/2009 (which lists the vitamins and minerals, and the chemical forms of the substances allowed in food supplements);

(ii) The EU transversal regulation relating to foodstuffs and especially the 2006/1924 regulation concerning nutrition and health claims, and the EU labeling transversal regulations, 90/496/EC and 2008/100/EC.

The EU regulation 2002/46/CE defines food supplements**:**

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[9] Codex Alimentarius (2005) CAC/GL 55: GUIDELINES FOR VITAMIN AND MINERAL FOOD SUPPLEMENTS

[10] DIRECTIVE 2002/46/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 10 June 2002 on the approximation of the laws of the Member States relating to food supplements

> "Food supplements means foodstuffs the purpose of which is to supplement the normal diet and which are concentrated sources of nutrients or other substances with a nutritional or physiological effect, alone or in combination, marketed in dose form, namely forms such as capsules, pastilles, tablets, pills and other similar forms, sachets of powder, ampoules of liquids, drop dispensing bottles, and other similar forms of liquids and powders designed to be taken in measured small unit quantities."

US legislation (DHSEA 1994/USA) defines dietary supplements as a product taken by mouth that contains a "dietary ingredient" intended to supplement the diet. The "dietary ingredients" in these products may include: vitamins, minerals, herbs or other botanicals, amino acids, and substances such as enzymes, organ tissues, glandulars, and metabolites. Dietary supplements can also be extracts or concentrates, and may be found in many forms such as tablets, capsules, softgels, gelcaps, liquids, or powders[11].

The **WIPO** (World Intellectual Property Organization) Special Union for the International Classification of Goods and Services for the Purposes of the Registration of Marks has recently published a preparatory report on the classification of dietary supplements, food additives and certain foodstuffs[12]. The report notes that the classification of dietary or nutritional supplements had not been clearly stated in the WIPO Nice Classification: "the classification of dietary supplements would be controversial because certain countries consider these products as food while others consider them as drugs. Furthermore, confusion between the classification of dietary supplements and that of food additives could arise." The report thus defines dietary or nutritional supplements:

> "In general, dietary or nutritional supplements are defined as substances, such as vitamins, minerals, trace elements, amino acids, proteins, herbs, intended to supplement a normal diet or to have health benefits, for ingestion in pill, capsule, tablet, powder or liquid form."

In the following discussion, "DIETARY SUPPLEMENT" will be used as the preferred term, with "FOOD SUPPLEMENT" as a synonym.

Comment [2]: OK

Comment [eb3]: NL: OK

2. Challenge: Systematic description of dietary/food supplements

Data on dietary supplements are needed and used for many purposes, e.g. policy making, labelling, product development, nutritional treatment, consumer information, and research. Currently there are differences between parties (authorities, consumption surveys, manufacturers, data banks) with respect to supplement classification and description. The challenge is to define a system that allows systematic classification and description of dietary supplements and their components in an internationally standardized way. Expanding the LanguaL thesaurus (http://www.langual.org) with terms specific to dietary supplements may be a good way of achieving this goal.[13]

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[11] U.S. Dietary Supplement Health and Education Act of 1994 (DSHEA) [http://www.fda.gov/RegulatoryInformation/Legislation/FederalFoodDrugandCosmeticActFDCAct/SignificantAmendmentstotheFDCAct/ucm148003.htm]

[12] WIPO (2009) *The classification of dietary supplements, food additives and certain foodstuffs*. Preparatory working group, 28th session, Geneva, 16-20 November 2009.

[13] Buurma-Rethans E., Toxopeus I., van Rossum C., Ireland J. (2010) The Dutch dietary supplement database (NES) - State of the art and challenges. Vitamin conference, Copenhagen 18-20 May 2010

CEN/TC 387 Food data — Data structure

Several initiatives within Europe and internationally have focused on improving and harmonising food data description and interchange. The current project CEN TC 387 to create a standard data structure for food data interchange is based on two initiatives: the EC 6th Framework EuroFIR Network of Excellence and the Food and Beverage Extension to the GS1 GDSN Trade Item standard[14].

The main aim of the CEN standard is to provide a framework that facilitates and enables generation, compilation, dissemination and interchange of quality-assessed food data that are comparable and unambiguous with respect to the identity and description of foods, food properties and compositional values. The standard is structured to be robust and flexible enough to incorporate future extensions with respect to various types of data.[15]

This standard will make it possible for any party in a community to send understandable food data to any other receiving party in that community. However, this standard does not include all definitions/controlled vocabularies that are required, as these are maintained by exterior instances. The standard recommends their use, for example the LanguaL thesaurus for food description.

The CEN/TC 387 Food Data standard project thus provides a good opportunity to define a harmonized classification scheme for dietary supplements.

Emergence of databases on dietary supplements

Consumption of dietary supplements has become an important contributor to nutrient intake. In several countries, dietary supplement databases have been created to record composition data of supplements on the market. Apart from this monitoring purpose, the dietary supplement database is a useful instrument for complimentary surveys, such as research on specific nutrient intake and benefit/risk assessments for specific age groups. Dietary supplement databases have therefore been created in recent years. Most are label-based databases containing up to 4000 products, but efforts towards analytically based databases have also been taken[16].

In Finland, dietary supplements are used relatively commonly, so they contribute substantially to total nutrient intakes. The first Finnish dietary supplement database was published in 1985 and updated in 1992, 1997 and more recently in 2008.[17] The latest update contains 491 dietary supplements (154 vitamin and mineral products, 138 vitamin supplements, 106 mineral supplements, and 93 other dietary supplement products).

Composition data of supplements on the Dutch market are recorded in the Dutch dietary supplement database [Nederlands Supplementenbestand, NES], which contains about 1800 products. NES is based on the Dutch National Food Consumption Surveys (http://www.rivm.nl/vcp_en), which have included assessment of dietary supplement use since 2003. Apart from this monitoring purpose, the dietary supplement database is a useful instrument for complimentary surveys, such as research on specific nutrient intake and benefit/risk assessments for specific age groups.[18]

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[14] GS1 Global Data Synchronisation Network. http://www.gs1.org/gdsn

[15] TC 387 N 036 Working draft_Food data, 2009-08-31

[16] H. Reinivuo et al. (2008). Revised Finnish dietary supplement database. *Journal of Food Composition and Analysis* 21, 464–468

[17] H. Reinivuo et al. (2008). Revised Finnish dietary supplement database. *Journal of Food Composition and Analysis* 21, 464–468

[18] Buurma-Rethans E. et al (2010) Dutch dietary supplement database (NES): State of the art and challenges. *1st International Vitamin Conference*, Copenhagen, 19-21 May

Denmark and France also have dietary supplements databases. In Ireland, dietary supplements are an integral part of the nutrient databank and therefore LanguaL indexed. The European Prospective Investigation into Cancer and Nutrition (EPIC)[19] also recorded supplements recorded in its dietary survey.

In the US, the Nutrient Data Laboratory (NDL), Beltsville Human Nutrition Research Center (BHNRC), part of the USDA Agricultural Research Service, working with the Office of Dietary Supplements, NIH, and other federal agencies, has developed a Dietary Supplement Ingredient Databases (DSID) to estimate levels of ingredients in dietary supplement products.[20]

The US Office of Dietary Supplements (ODS), part of the National Institute for Health (NIH), is developing the concept for a dietary supplement database for research purposes, which currently does not exist. ODS is considering using LanguaL to index dietary supplements when entering them into the system. As research strategy, they wish to be able to sort by product type, at a minimum using the official definitions of categories established by our law, and if possible, other criteria. Users of the database must be able to enter various search criteria to filter records returned.

Updating the LanguaL thesaurus to include dietary supplements

LanguaL is a multilingual thesaural system using facetted classification. It is an automated method for describing, capturing and retrieving data about food. The work on LanguaL was started in the late 1970's by the Center for Food Safety and Applied Nutrition (CFSAN) of the United States Food and Drug Administration (FDA) as an ongoing co-operative effort of specialists in food technology, information science and nutrition.[21] Since then, LanguaL has been developed in collaboration with the US National Cancer Institute (NCI), and, more recently, its European partners, notably in France, Denmark, Switzerland and Hungary. Since 1996, the European LanguaL Technical Committee has administered the thesaurus. [22]

Using LanguaL, each food/additive/supplement is described by a set of **standard, controlled terms chosen from facets** characteristic of the nutritional and/or hygienic quality of the product, as for example the biological origin, the methods of cooking and conservation, and technological treatments.

If the above parties (CEN/TC 387 Food Data standard project, major European databases on dietary supplements and the US Office of Dietary Supplements) can agree on a harmonised method to describe dietary supplements in numerical databases, then the proposal will be published on the LanguaL website (http:www.langual.org) for wider discussion, and included in the next version (2010) of the LanguaL thesaurus.

[19] Skieie G: et al (2009). Dietary supplement use in the EPIC calibration study. *European Journal of Clinical Nutrition*, 63, S226-238.

[20] Roseland J. et al (2008) Dietary supplement ingredient database (DSID): Preliminary USDA studies on the composition of adult multivitamin/mineral supplements. *Journal of Food Composition and Analysis* 21, S69–S77.

[21] McCann, A. et al. FDA's Factored Food Vocabulary for Food Product Description. Journal of the American Dietetic Association, vol. 88, no. 3, pp. 336 – 341, 1988.

[22] http://www.langual.org

3. Product Type - LanguaL facet A

Product Type is a major facet in describing or defining a food product. Product Type is defined as a user-oriented food group having common consumption, functional or manufacturing characteristics. LanguaL facet A is divided into different sections, corresponding to different classification systems. As food classifications are dependent on the different uses of the indexed data, a single classification system cannot sufficiently cover all of these. Therefore, this facet includes the most commonly used food classifications systems used regionally and/or internationally. Indexing rules stipulate that one descriptor can be chosen from each classification system.

Indexing dietary supplements in LanguaL facet A

Dietary supplements can already be flagged using descriptors under these main categories:

CODEX ALIMENTARIUS, FUNCTIONAL CLASSES
DIETARY SUPPLEMENT (CODEX) [A0398]
EUROFIR FOOD CLASSIFICATION
DIETARY SUPPLEMENT (EUROFIR) [A0870]
PRODUCT TYPE, U.S. CODE OF FEDERAL REGULATIONS, TITLE 21
SUPPLEMENTAL FORMULATION (US CFR) [A0308]

However, the thesaurus lacks a more detailed classification of dietary supplements according to their type. The CEN/TC 387 Food Data standard project and the US ODS database project provide a good opportunity to define a harmonized classification scheme for dietary supplements.

Proposed classification for Dietary Supplements

The US Office of Dietary Supplements proposes the following categories of dietary supplements as defined in the DSHEA (Dietary Supplement Health and Education Act) of 1994:

1. Vitamin
2. Mineral
3. Herbal/botanical
4. Amino acid
5. Other dietary substance to supplement the diet (omega 3 fatty acid or fat, carbohydrate, fiber, protein, yeast, lutein, flavonoids
6. Combination of any of the above ingredients listed in 1-6 above
7. Concentrate, metabolite, constituent, extract

EU regulations do not define categories of dietary supplements, so the European approach has been pragmatic and based on categories of dietary supplements declared in food consumption surveys. Consequently, each country has its own supplement classification. For example, the Finnish and Dutch food supplement databases and the European Prospective Investigation into Cancer and Nutrition classify supplements in the following categories.

Classification of Dietary Supplements in Europe

Finland	The Netherlands	EPIC study

Finland	The Netherlands	EPIC study
Vitamin supplements (28%)	Single vitamin supplements (20%) Multivitamin supplements (9%)	Vitamins
Mineral supplements (22%)	Single mineral supplements (8%) Multimineral supplements (5%)	Minerals
Vitamin-mineral supplements (31%)	Single vitamin-single mineral supplements (4%) Multivitamin-multimineral supplements (24%)	MVM
Fatty acid supplements (13%)	Fatty acid supplements (11%)	Oil-based supplements (alone or with added vitamins, minerals and/or herbs)
Probiotic supplements (3%)		
Herbal supplements		Herbs/plants (includes fibres)
Other supplements (2%): Fibre supplements Yeast supplements Enzyme supplements Homeopathic supplements Anthroposophic supplements	Other supplements (19%): Fibre supplements Glucosamine supplements etc.	Other single-substance supplements (e.g. single amino acids) Other complex substance supplements (e.g. proteins, yeast, royal jelly, algae) Other combination supplements (e.g. multivitamin with ginseng)

Although some overlapping of product groups exists (e.g. the EPIC "Oil-based supplements" includes oils with added vitamins, minerals and/or herbs), most of the European dietary supplement types are compatible with those defined in the US. In order to allow comparability across borders, it is thus proposed to harmonize classification of Dietary Supplements by including European dietary supplement types within the US main classification (above).

The following table details the proposed descriptors and the databases in which they are currently used. As can be seen, the LanguaL thesaurus uses hierarchical relationships (broader terms and narrower terms), which are extremely important for searching. A Broader Term (BT) represents a concept having a wider meaning in the hierarchy. Hierarchy is also a useful tool for displaying the thesaurus in a logical way, so that both searcher and indexer can easily comprehend it. Finally, hierarchy underlies the aggregation of numerical values when the thesaurus is used in reporting/compiling data.

Proposed Classification of Dietary Supplements under A- PRODUCT TYPE [A0361].

Proposed descriptors	Sources[23]
DIETARY SUPPLEMENT TYPE	DK, FI, USDA, US label, FR, NL, DSHEA, ODS
MINERAL SUPPLEMENT	DK, FI, USDA, US label, FR, EPIC, DSHEA, ODS
MULTI-MINERAL SUPPLEMENT	FR, NL
SINGLE MINERAL SUPPLEMENT	FR, NL
VITAMIN SUPPLEMENT	DK, FI, USDA, US label, FR,

[23] **DK** = Danish classification; **FI** = Finnish Dietary Supplements database; **USDA** = USDA ARS Dietary Supplement Ingredient Database (DSID-1); **US label** = US Dietary Supplements Labels Database; **FR** = French AFSSA database on dietary supplements; **NL** = Dutch Supplement Database NES; **EPIC** = European Prospective Investigation into Cancer and Nutrition; **DSHEA** = US Dietary Supplement Health and Education Act, **ODS** = US Office of Dietary Supplements.

Proposed descriptors	**Sources[23]**
	EPIC, DSHEA, ODS
MULTI-VITAMIN SUPPLEMENT	FR, NL
SINGLE VITAMIN SUPPLEMENT	FR, NL
AMINO ACID OR PROTEIN SUPPLEMENT	DK, USDA, US label, FR, DSHEA, ODS
BOTANICAL OR HERBAL SUPPLEMENT	DK, FI, USDA, US label, FR, EPIC, DSHEA, ODS
YEAST SUPPLEMENT	FI, FR
PROBIOTIC OR BACTERIA SUPPLEMENT	FI
METABOLITE, EXTRACT OR ISOLATE SUPPLEMENT	DSHEA, ODS
FATTY ACID OR FAT SUPPLEMENT	DK, FI, USDA, FR, NL, EPIC
ENZYME SUPPLEMENT	FI, US label
PHYTOESTROGEN SUPPLEMENT	FR
HORMONE SUPPLEMENT	FR
DIETARY SUPPLEMENT, COMBINATION	EPIC, DSHEA, ODS
VITAMIN-MINERAL COMBINATION SUPPLEMENT	FI, FR, EPIC
MULTIVITAMIN/MULTI-MINERAL SUPPLEMENT	USDA, FR, NL, ODS
SINGLE VITAMIN/SINGLE MINERAL SUPPLEMENT	FR, NL
BOTANICAL SUPPLEMENT WITH VITAMINS OR MINERALS	FR
BOTANICAL SUPPLEMENT WITH MINERALS	ODS
BOTANICAL SUPPLEMENT WITH VITAMINS	ODS
BOTANICAL SUPPLEMENT WITH MULTI VITAMIN/MINERALS	ODS
MULTI VITAMIN-MINERAL AND AMINO ACID COMBINATION SUPPLEMENT	ODS
MULTI VITAMIN-MINERAL AND FATTY ACID COMBINATION SUPPLEMENT	EPIC, ODS
VITAMIN- FATTY ACID COMBINATION SUPPLEMENT	ODS
DIETARY SUPPLEMENT, OTHER	DSHEA, ODS
CARBOHYDRATE SUPPLEMENT	DK, USDA,
FIBER SUPPLEMENT	FI, USDA, FR, ODS
ELECTROLYTE SUPPLEMENT	ODS
NON-SPECIFIED SUPPLEMENT	EPIC

The ISO standards for mono and multilingual thesauri recommend that descriptors be further defined using Synonyms, Additional Information, and Scope Notes to indicate the use of terms when indexing and when searching.

Proposed Synonyms, Scope Notes and Additional Information

Descriptor	**Synonyms, Scope Notes, Additional Information**
DIETARY SUPPLEMENT TYPE	Synonym: **food supplement** Scope Note: This term is for CLASSIFICATION ONLY; DO NOT USE term in indexing. Use a more precise narrower term. Index dietary/food supplements according to legal and market definitions. Additional Information: Food supplements means foodstuffs the purpose of which is to supplement the normal diet and which are concentrated sources of nutrients or other substances with a nutritional or physiological effect, alone or in combination, marketed in dose form, namely forms such as capsules, pastilles, tablets, pills and other similar forms, sachets of powder, ampoules of liquids, drop dispensing bottles, and other similar forms of liquids and powders designed to be taken in measured small unit quantities. [Directive 2002/46/EC] A dietary supplement is a product taken by mouth that contains a "dietary ingredient" intended to supplement the

Descriptor	Synonyms, Scope Notes, Additional Information
	diet. The "dietary ingredients" in these products may include: vitamins, minerals, herbs or other botanicals, amino acids, and substances such as enzymes, organ tissues, glandulars, and metabolites. Dietary supplements can also be extracts or concentrates, and may be found in many forms such as tablets, capsules, softgels, gelcaps, liquids, or powders. [DHSEA 1994/USA] Supplements containing vitamins or dietary minerals are included in the Codex Alimentarius Commission, a guidebook on food safety sponsored by the United Nations [http://www.codexalimentarius.net/download/standards/10206/cxg_055e.pdf] In general, dietary or nutritional supplements are defined as substances, such as vitamins, minerals, trace elements, amino acids, proteins, herbs, intended to supplement a normal diet or to have health benefits, for ingestion in pill, capsule, tablet, powder or liquid form. [WIPO 2009]
MINERAL SUPPLEMENT	
MULTI-MINERAL SUPPLEMENT	Additional Information: A multi-mineral supplement contains more than one mineral.
SINGLE MINERAL SUPPLEMENT	Additional Information: A single mineral supplement is defined as containing one mineral.
VITAMIN SUPPLEMENT	
MULTI-VITAMIN SUPPLEMENT	Synonym: **multivitamin supplement** Additional Information: A multi-vitamin supplement contains more than one vitamin.
SINGLE VITAMIN SUPPLEMENT	Additional Information: A single vitamin supplement is defined as containing one vitamin.
AMINO ACID OR PROTEIN SUPPLEMENT	
BOTANICAL OR HERBAL SUPPLEMENT	Synonym: **natural supplement** Scope Note: Use for supplements based on plants, yeast, algae, and fungi. Additional Information: In the United States and Europe, herbal remedies that are sold over the counter are regulated as dietary supplements.
YEAST SUPPLEMENT	Additional Information: Nutritional yeast is a source of protein and vitamins, especially the B-complex vitamins and is a complete protein. [Wikipedia]
PROBIOTIC OR BACTERIA SUPPLEMENT	Additional Information: Probiotics are food supplements of live microorganisms thought to be healthy for the host organism. According to the currently adopted definition by FAO/WHO, probiotics are selected "live microorganisms which when administered in adequate amounts confer a health benefit on the host".[FAO/WHO (2001) Health and Nutritional Properties of Probiotics in Food including Powder Milk with Live Lactic Acid Bacteria. Report of a Joint FAO/WHO Expert Consultation on Evaluation of Health and Nutritional Properties of Probiotics in Food Including Powder Milk with Live Lactic Acid Bacteria] Lactic acid bacteria (LAB) and bifidobacteria are the most common types of microbes used as probiotics; but also certain yeasts and bacilli are available. [Wikipedia] Scope Note: Probiotics are not dietary supplements under US law.
METABOLITE, EXTRACT OR ISOLATE SUPPLEMENT	Additional Information: Metabolite, constituent, extract, isolate, or combination of any of these. Includes hormone precursors; steroid precursors; 7-dehydrocholesterol, lutein, omega-3's, CoQ10.
FATTY ACID OR FAT SUPPLEMENT	Synonym: **fish oil supplement, omega-3 supplement** Scope Note: Use to index omega-3 supplements, fish oil capsules, evening primrose capsules.
ENZYME SUPPLEMENT	Additional Information: Plant and animal enzymes are used to facilitate the digestive process and improve the body's ability to maintain balanced metabolism. Enzyme supplements are extracted from plants like pineapple

Descriptor	Synonyms, Scope Notes, Additional Information
	and papaya and from the organs of cows and pigs. The supplements are typically given in tablet or capsule form. Pancreatic enzymes may also be given by injection. The dosage varies with the condition being treated. For nondigestive ailments, the supplements are taken in the hour before meals so that they can be quickly absorbed into the blood. For digestive ailments, the supplements are taken immediately before meals accompanied by a large glass of fluids. Pancreatic enzymes may be accompanied by doses of vitamin A.[http://medical-dictionary.thefreedictionary.com/enzyme+therapy]
PHYTOESTROGEN SUPPLEMENT	Synonym: **dietary estrogens** Additional Information: Phytoestrogens are weak estrogens found concentrated in soybeans. Extracted phytoestrogens are marketed in numerous forms as dietary supplements. Consumers of phytoestrogen supplements tend to be peri- and postmenopausal women looking for an alternative to hormone therapy.
HORMONE SUPPLEMENT	Synonym: **DHEA supplement, melatonin supplement** Scope Note: According to EU legislation hormones are considered as drugs. Additional Information: The hormones DHEA (a steroid), pregnenolone (also a steroid) and the pineal hormone melatonin are marketed as dietary supplements in the US. Dehydroepiandrosterone (DHEA) is a multi-functional steroid that has been implicated in a broad range of biological effects. In the United States, DHEAS have been advertised with claims that they may be beneficial for a wide variety of ailments, and they are marketed as over-the-counter dietary supplements. DHEA supplements are sometimes used to improve memory and increase testosterone or estrogen in the elderly and as muscle-building or performance-enhancing drugs by athletes, although these effects are disputed. In Canada, a prescription is required to buy DHEA. DHEA is a prohibited substance under the World Anti-Doping Code of the World Anti-Doping Agency, which manages drug testing for Olympics and other sports. Products containing melatonin are available over-the-counter as a dietary supplement in the United States and Canada, while it is available only by prescription or not at all in some other countries. [Wikipedia]
DIETARY SUPPLEMENT, COMBINATION	Scope Note: Whenever possible, use a more precise narrower term.
VITAMIN-MINERAL COMBINATION SUPPLEMENTS	Additional Information: A multivitamin/mineral supplement is defined in the United States as a supplement containing 3 or more vitamins and minerals but does not include herbs, hormones, or drugs, with each nutrient at a dose below the tolerable upper level determined by the Food and Drug Board and the maximum daily intake to not cause a risk for adverse health effects. (National Institutes of Health State-of-the-Science Panel. National Institutes of Health State-of-the-Science Conference Statement: multivitamin/mineral supplements and chronic disease prevention. Am J Clin Nutr 2007;85:257S-64S) [Wikipedia] In Finland a supplement containing 2 or more vitamins and minerals are defined as vitamin-mineral combination supplement
MULTIVITAMIN/MULTI-MINERAL COMBINATION SUPPLEMENT	Synonym =: **multivitamin/mineral supplement** Scope Note: Use the broader term VITAMIN-MINERAL COMBINATION SUPPLEMENT if the supplement contains 2 or more vitamins plus one mineral, or one vitamin plus 2 or more minerals.
SINGLE VITAMIN/SINGLE MINERAL COMBINATION SUPPLEMENT	Additional Information: Defined as containing one vitamin and one mineral Scope Note: Use when indexing a supplement that contains one vitamin and one mineral.
BOTANICAL SUPPLEMENT PLUS VITAMINS OR MINERALS	
BOTANICAL SUPPLEMENT WITH MINERALS	

Comment [eb4]: NL: We do distinguish between single vit/min and multi vit/min supplements; if a suppl contais 2 or more vit and 1 min (or the other way round) then it is defined as 'other'

Descriptor	Synonyms, Scope Notes, Additional Information
BOTANICAL SUPPLEMENT WITH VITAMINS	Scope Note: Use, for example, to index nutritional yeast fortified with vitamin B12.
BOTANICAL SUPPLEMENT WITH MULTIVITAMIN/ MINERALS	
MULTI VITAMIN-MINERAL AND AMINO ACID COMBINATION SUPPLEMENT	
MULTI VITAMIN-MINERAL AND FATTY ACID COMBINATION SUPPLEMENT	
VITAMIN- FATTY ACID COMBINATION SUPPLEMENT	
DIETARY SUPPLEMENT, OTHER	SYN: **food supplement, other** Scope Note: Includes other dietary substance to supplement the diet (fiber, electrolytes). Whenever possible, use a more precise narrower term.
CARBOHYDRATE SUPPLEMENT	
FIBER SUPPLEMENT	Additional Information: Fibre supplements are widely available, and can be found in forms such as powders, tablets and capsules. Consumption of fibre supplements may be for: improving dietary intake, lowering blood cholesterol, alleviating irritable bowel syndrome, reducing the risk of colon cancer, and increasing feelings of satiety. [Wikipedia]
ELECTROLYTE SUPPLEMENT	Additional Information: Electrolyte supplements are a varied group of prescription and nonprescription preparations used to correct imbalances in the body's electrolyte levels. Electrolytes themselves are substances that dissociate into ions (electrically charged atoms or atom groups) when they melt or are dissolved, thus serving to conduct electricity. In the human body, electrolytes are thus critical to the proper distribution of water, muscle contraction and expansion, transmission of nerve impulses, delivery of oxygen to body tissues, heart rate and rhythm, acid-base balance, and other important functions or conditions. The various electrolyte supplements used in the United States and Canada as of 2005 are intended to prevent or treat electrolyte imbalances in very different situations or groups of patients. They range from **sports drinks** and other supplements used by amateur or professional **athletes** to prevent muscle cramps and improve athletic performance, to liquids used at home to **prevent dehydration** in children with diarrhea, to injections administered as part of **enteral** (feeding through a tube or stoma directly into the small intestine) or **parenteral** nutrition (intravenous feeding that bypasses the digestive tract). [http://medical-dictionary.thefreedictionary.com/Electrolyte+Supplements]
NON-SPECIFIED SUPPLEMENT	SYN: **dietary supplement type unknown** Scope Note: Used when no supplement type is evident from the product name.

Outstanding questions

- The Finnish DS database also classifies ANTHROPOSOPHIC DIETARY SUPPLEMENTS (Steiner supplements). Anthroposophy is a spiritual philosophy based on the teachings of Rudolf Steiner. Anthroposophical medicine approaches disease as an imbalance in the biological organism and employs treatment strategies intended to restore this balance.
- The Finnish DS database also classifies HOMEOPATHIC DIETARY SUPPLEMENTS. Homeopathy is a form of alternative medicine that treats patients with heavily diluted preparations which are thought to cause effects similar to the symptoms presented. Homeopathic remedies are not dietary supplements under US law.

It is not clear if these should be classified in facet A, under DIETARY SUPPLEMENT, OTHER, or in Facet P - claims.

4. Ingredients

The main ingredient Sources of food supplements can be described with LanguaL facet B (Product Source), facet C (Part of source plant or animal) and facet H (Treatment applied and ingredients added).

Product source / main ingredient - LanguaL facets B and C

LanguaL facets B and C describe the origin(s) of food products (including ordinary foods, supplements and additives), specifically the **principal** plant, animal or chemical **source**(s) they came from and, for a plant or animal source, what **part** was used.

To avoid confusion, we propose to modify the name of facet B from "**Food source**" to **"Product Source"**, even though the term "food" technically applies to both supplements and additives as well as to ordinary foods.

Product sources are divided into live food sources (i.e., plants, animals, and algae or fungi), water and chemical food sources, which include substances such as salt and monosodium glutamate. There are currently more than 2500 descriptors in facet B, covering many plants and animals, and more can be added as needed.

Links are currently being created between LanguaL descriptors and authoritative sources: USDA ARS - Germplasm Resources Information Network (GRIN taxonomy), IPK Mansfeld's World Database of Agricultural and Horticultural Crops, USDA Integrated Taxonomic Information System (ITIS), FDA Regulatory Fish Encyclopedia, FAO AFSIS ISSCAAP List of Species for Fishery Statistics Purposes, and FISHBASE. The thesaurus also allows synonyms (e.g. local names for plants) to be registered, in order to facilitate indexing and data retrieval.

Main classes of facets B & C (proposed modifications in bold):

Facet B. **Product** Source	Facet C. Part of Plant or Animal
ALGAE OR FUNGUS USED AS **PRODUCT** SOURCE ANIMAL USED AS **PRODUCT** SOURCE	EXTRACT, CONCENTRATE OR ISOLATE OF PLANT OR ANIMAL CARBOHYDRATE OR RELATED COMPOUND ESSENTIAL OIL, OLEORESIN OR OTHER FLAVOURING

AMPHIBIAN OR REPTILE	SUBSTANCE
FISH OR LOWER WATER ANIMAL	FAT OR OIL
INSECT	MULTICOMPONENT EXTRACT, CONCENTRATE OR ISOLATE
MEAT ANIMAL	PROTEIN EXTRACT, CONCENTRATE OR ISOLATE
POULTRY OR GAME BIRD	ANATOMICAL PART OF PLANT OR ANIMAL
CHEMICAL **PRODUCT** SOURCE	PART OF ALGAE OR FUNGUS
FOOD ADDITIVE~~, EC/CODEX ALIMENTARIUS~~	PART OF ANIMAL
VITAMIN OR MINERAL INGREDIENT	ANIMAL BODY OR BODY PART
OTHER CHEMICAL FOOD SOURCE	EGG
LIQUID AS FOOD SOURCE	MILK
PLANT USED AS **PRODUCT** SOURCE	PART OF PLANT
FRUIT-PRODUCING PLANT	FRUIT OR SEED
GRAIN OR SEED-PRODUCING PLANT	ROOT, STEM, LEAF OR FLOWER
PLANT ACCORDING TO FAMILY	BARK
PLANT FOR MEDICINAL USE	COTYLEDON
PLANT USED AS FODDER	PLANT ABOVE SURFACE, EXCLUDING FRUIT AND SEED
PLANT USED FOR PRODUCING EXTRACT OR CONCENTRATE	ROOT, TUBER OR BULB
CARBOHYDRATE-PRODUCING PLANT	WHOLE PLANT OR MOST PARTS USED
OIL-PRODUCING PLANT	PART OF PLANT OR ANIMAL NOT APPLICABLE
PROTEIN-PRODUCING PLANT	
SPICE OR FLAVOUR-PRODUCING PLANT	
VEGETABLE-PRODUCING PLANT	

Comment [5]: Common list for EU and USA would be better.

Comment [JI6]: The US and EU/Codex definitions of "food additive" are different, i.e. lists contain different substances. However, the same descriptors can be used under different lists.

Comment [JI7]: Active ingredients of dietary supplements: use EU positive list

Indexing rules stipulate that **one and only one descriptor** must be chosen from facets B and C. If the food product has multiple ingredients, then the source of the **major ingredient** is indexed. The major ingredient is the one that predominates **by weight** as seen from the label statement, formulation or recipe (not counting water). Water is considered an ingredient only if it is the sole ingredient (e.g., mineral water) or if the food product is a soft drink. For dietary supplements, the major ingredient should thus be defined as the one that is listed first on the label.

The part of a plant or animal source is then indexed in facet C. For mineral sources, index *PART OF PLANT OR ANIMAL NOT APPLICABLE*.

Proposed updates of facet B

Facet B also includes chemical sources. Food additives are listed according to European legislation and Codex alimentarius under *FOOD ADDITIVE, EUROPEAN COMMUNITY/CODEX ALIMENTARIUS* [B2973]. The narrower terms of this descriptor are all qualified "EC/CODEX" (e.g. *CALCIUM CARBONATE (EC/CODEX)* [B3031]). Other chemical food sources are listed under *OTHER CHEMICAL FOOD SOURCE* [B2973], as they do not correspond to the EC/CODEX list of food additives (e.g. *MONOSODIUM GLUTAMATE* [B1652]).

In order to allow these chemical sources to be used to describe main ingredients of dietary supplements, it is there proposed to **remove the mention "EC/CODEX" from the food additives listed under *FOOD ADDITIVE, EUROPEAN COMMUNITY/CODEX ALIMENTARIUS* [B2973]**. The same descriptors can then be used under a future list of food additives according to US legislation. Identification codes (European E-codes) and national/regional specifications can be documented in the descriptor's Additional Information field.

Comment [8]: ok

It is also proposed to expand the list of substances either under or parallel to *OTHER CHEMICAL FOOD SOURCE* [B2973], to include authorized vitamin and mineral substances (ingredients) that may be used in the manufacture of dietary supplements, according to the European Directive[24] .

Comment [eb9]: The list has been updated: see Commission Regulation EC 1170/2009

Vitamin and mineral substances that may be used in the manufacture of food supplements

A. Vitamins	magnesium hydroxide
1. VITAMIN A	magnesium oxide
(a) retinol	magnesium sulphate
(b) retinyl acetate	ferrous carbonate
(c) retinyl palmitate	ferrous citrate
(d) beta-carotene	ferric ammonium citrate
2. VITAMIN D	ferrous gluconate
(a) cholecalciferol	ferrous fumarate
(b) ergocalciferol	ferric sodium diphosphate
3. VITAMIN E	ferrous lactate
(a) D-alpha-tocopherol	ferrous sulphate
(b) DL-alpha-tocopherol	ferric diphosphate (ferric pyrophosphate)
(c) D-alpha-tocopheryl acetate	ferric saccharate
(d) DL-alpha-tocopheryl acetate	elemental iron (carbonyl+electrolytic+hydrogen
(e) D-alpha-tocopheryl acid succinate	reduced)
4. VITAMIN K	cupric carbonate
(a) phylloquinone (phytomenadione)	cupric citrate
5. VITAMIN B1	cupric gluconate
(a) thiamin hydrochloride	cupric sulphate
(b) thiamin mononitrate	copper lysine complex
6. VITAMIN B2	sodium iodide
(a) riboflavin	sodium iodate
(b) riboflavin 5'-phosphate, sodium	potassium iodide
7. NIACIN	potassium iodate
(a) nicotinic acid	zinc acetate
(b) nicotinamide	zinc chloride
8. PANTOTHENIC ACID	zinc citrate
(a) D-pantothenate, calcium	zinc gluconate
(b) D-pantothenate, sodium	zinc lactate
(c) dexpanthenol	zinc oxide
9. VITAMIN B6	zinc carbonate
(a) pyridoxine hydrochloride	zinc sulphate
(b) pyridoxine 5'-phosphate	manganese carbonate
10. FOLIC ACID	manganese chloride
(a) pteroylmonoglutamic acid	manganese citrate
11. VITAMIN B12	manganese gluconate
(a) cyanocobalamin	manganese glycerophosphate
(b) hydroxocobalamin	manganese sulphate
12. BIOTIN	sodium bicarbonate
(a) D-biotin	sodium carbonate
13. VITAMIN C	sodium chloride
(a) L-ascorbic acid	sodium citrate
(b) sodium-L-ascorbate	sodium gluconate
(c) calcium-L-ascorbate	sodium lactate
(d) potassium-L-ascorbate	sodium hydroxide
(e) L-ascorbyl 6-palmitate	sodium salts of orthophosphoric acid
B. Minerals	potassium bicarbonate
calcium carbonate	potassium carbonate
calcium chloride	potassium chloride
calcium salts of citric acid	potassium citrate
calcium gluconate	potassium gluconate
calcium glycerophosphate	potassium glycerophosphate
calcium lactate	potassium lactate
calcium salts of orthophosphoric acid	potassium hydroxide

[24] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:183:0051:0057:EN:PDF

calcium hydroxide	potassium salts of orthophosphoric acid
calcium oxide	sodium selenate
magnesium acetate	sodium hydrogen selenite
magnesium carbonate	sodium selenite
magnesium chloride	chromium (III) chloride
magnesium salts of citric acid	chromium (III) sulphate
magnesium gluconate	ammonium molybdate (molybdenum (VI))
magnesium glycerophosphate	sodium molybdate (molybdenum (VI))
magnesium salts of orthophosphoric acid	potassium fluoride
magnesium lactate	sodium fluoride

Other ingredients – LanguaL Facet H

The main ingredient by weight is indexed with facets B & C. Other ingredients are indexed under LanguaL Facet H. TREATMENT APPLIED, which contains descriptors that can be used to characterize processes applied to a product. These processes include adding, substituting or removing components or modifying the product (e.g., through fermentation). Multiple values may be assigned when indexing.

Main classification of facet H – Treatment Applied:

COMPONENT REMOVED
COMPONENT SUBSTITUTED
FOOD MODIFIED
INGREDIENT ADDED
- CARBOHYDRATE OR RELATED COMPOUND ADDED
- COATED OR COVERED
- COLOR ADDED
- FAT OR OIL ADDED
- FILLED OR STUFFED
- FLAVORING OR TASTE INGREDIENT ADDED
- FOOD ADDED
- **FOOD ADDITIVE ADDED**, EUROPEAN COMMUNITY/CODEX ALIMENTARIUS
- FOOD ADDITIVE ADDED, USA
- LEAVENING AGENT ADDED
- NUTRIENT OR DIETARY SUBSTANCE ADDED
- PHOSPHATE ADDED
- PROTEIN ADDED

WATER ADDED OR REMOVED
NO TREATMENT APPLIED
TREATMENT APPLIED NOT KNOWN

Comment [10]: Common list for EU and USA would be better

Comment [JI11]: As said above, the definition of "food additive" differs between EU/Codex and US. So having 2 lists is justified.

Proposed updates of facet H

The European Directive[25] lists vitamins and minerals that may be used in the manufacture of food supplements. It is therefore proposed to:

Comment [eb12]: The list has been updated: see Commission Regulation EC 1170/2009

1. **Complete the list of vitamins and minerals added** in facet H, under *NUTRIENT OR DIETARY SUBSTANCE ADDED* [H0194], using this list of vitamins and minerals used in the manufacture of food supplements. This means that new terms (e.g., "COPPER ADDED", "FOLIC ACID ADDED") should thus be added to the thesaurus.

[25] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:183:0051:0057:EN:PDF

Facet H: Nutrient or dietary substance added (proposed additions in bold):

NUTRIENT OR DIETARY SUBSTANCE ADDED [H0194]
- AMINO ACID ADDED [H0210]
- MINERAL ADDED [H0159]
  - CALCIUM ADDED [H0162]
  - CHLORIDE ADDED [H0196]
  - **CHROMIUM ADDED**
  - **COPPER ADDED**
  - **FLUORIDE ADDED**
  - IODIZED [H0189]
  - IRON ADDED [H0181]
  - **MAGNESIUM ADDED**
  - **MANGANESE ADDED**
  - **MOLYBDENUM ADDED**
  - PHOSPHORUS ADDED [H0223]
  - POTASSIUM ADDED [H0195]
  - **SELENIUM ADDED**
  - SODIUM ADDED [H0144]
  - ZINC ADDED [H0273]
- VITAMIN ADDED [H0163]
  - **BIOTIN ADDED**
  - **FOLIC ACID ADDED**
  - VITAMIN A OR CAROTENES ADDED [H0213]
    - CAROTENES ADDED [H0317]
    - VITAMIN A ADDED [H0316]
  - VITAMIN B ADDED [H0216]
    - NIACIN ADDED [H0311]
    - **PANTOTHENIC ACID ADDED**
    - RIBOFLAVIN ADDED [H0310]
    - THIAMINE ADDED [H0309]
    - **VITAMIN B12 ADDED**
    - **VITAMIN B6 ADDED**
  - VITAMIN C ADDED [H0215]
  - VITAMIN D ADDED [H0214]
  - VITAMIN E ADDED [H0217]
  - **VITAMIN K ADDED**

2. **Complete the list of NUTRIENT OR DIETARY SUBSTANCE ADDED** in facet H:
   a. Under AMINO ACID ADDED [H0210], include list of amino acids used in dietary supplements
   b. Include other dietary substances under NUTRIENT OR DIETARY SUBSTANCE ADDED [H0194]:
      Fiber added,
      Enzyme added,
      Electrolyte added,
      Metabolite, extract or isolate added

3. **Update the list of food additives in facet H.** Some chemical ingredients used in the manufacture of food supplements may already be defined as food additives. In this case, they are listed under *FOOD ADDITIVE ADDED, EUROPEAN COMMUNITY/CODEX ALIMENTARIUS* [H0399] (e.g.*CALCIUM CARBONATE ADDED (EC/CODEX)* [H0456]) or under (*FOOD ADDITIVE ADDED, USA* [H0371], as authorizations may differ.
   Some examples of chemical ingredients are Antioxidants/preservatives, Emulsifiers, and Coating materials (other than sugar or chocolate). Colors, Flavors and Sweeteners are already present in facet H: Bulking agents (fillers, excipents) are more likely to be indexed in facet B.
   As was said in facet B above, we propose to **remove the mention "EC/CODEX" from the food additives listed under *FOOD ADDITIVE ADDED, EUROPEAN COMMUNITY/CODEX ALIMENTARIUS* [H0399]** in order to allow these **same descriptors** to be used under *FOOD ADDITIVE ADDED, USA* [H0371], since there is probably no significant difference between the identities of these ingredients. In addition, links and identification codes, such as the European E-codes for food additives, as well as national specifications need to be included in the Additional Information field for each of these additives.

Comment [13]: OK

Comment [eb14]: NL: OK - If total mentioning of all EC approved substrances are included

4. **Include yeast and algae under FOOD ADDED [H0180]. Add "fungus added" as synonym of MUSHROOM ADDED [H0166].** On the other hand, it is not possible to add individual herbs in facet H, as it would also be necessary to precise the part used, and this would moreover explode facet H. The alternative is to use Full Ingredient Indexing (see below).

5. **Create a descriptor for Metabolite, extract, isolate added** under INGREDIENT ADDED [H0225]. See also Full Ingredient Indexing (below).

6. **Re-examine title of facet H**: The US Office of Dietary Supplements considers the present title "Treatment Applied" to be confusing for dietary supplements and suggests a new facet name "Formula". However, changing the name of facet H would make it less applicable to all other foods. The alternative is to make **"formulation"** a Synonym of "H. Treatment Applied"

Full Ingredient Indexing

Simple indexing as described above is quite sufficient for simple products, like herbs or fish oil, but may not be precise enough for complex products, like of herb mixtures or multivitamins. Except for a few cases (e.g. soy, onion) secondary ingredients indexed in facet H cannot have the same precision as in facets B+C.

Moreover, in many cases the main ingredient of a dietary supplement will be an excipient and not the active ingredient. An excipient is an inactive substance used as a carrier for the active ingredients or bulking agents in formulations that contain very potent active ingredients, to allow for convenient and accurate dosage. The excipient would then be indexed in facets B & C; other ingredients, including the active ingredient, would be indexed in facet H.

It is not possible to extend facet H infinitely, so the best solution to index all ingredients is what is known as "**Full Ingredient Indexing**", which combines LanguaL indexing and formulation.

Full Ingredient Indexing (FII) was introduced in the beginning of the 1990's in order to accommodate more specific data in product description, in particular to include more specific information on all ingredients. Compared with traditional LanguaL indexing where the product is described with a set of descriptors representing the whole product (including its ingredients), FII allows for a more precise description of every single ingredient. FII can also handle the description of treatments applied to the ingredients and preserve the information attached to the ingredient, whereas simple indexing will attach the information of the various treatments to the final product and not to the ingredient.

Full Ingredient Indexing enables the user to index every ingredient in a 'mixture' or composite product as a single food. The resulting description of the composite product is a set of descriptions for each ingredient in the product (eventually accompanied by amounts of each ingredient, if known), as well as the overall description of the final product.

In FII, each product is given an identifier and a recipe code (which can be the same). The product's ingredients are listed in a separate "Recipe" table in descending order by weight. The percentage of each ingredient is entered if this information is present on the product label. Each ingredient is also given a product identifier in the database. The product and its ingredients are then described separately using descriptors chosen from the LanguaL thesaurus.

Although more complex to perform, Full Ingredient Indexing allows for better tracking of specific ingredients in foods (for example, food additives and flavourings). The intake/exposure to these

ingredients can thus be estimated and evaluated via household budget and individual food consumption surveys. Such estimates become more and more important in risk assessment and management and are equally important in determining use levels in foods.

5. Physical state, shape or form - LanguaL facet E

Facet E describes the physical state of a food product specifies whether it is liquid, semiliquid, semisolid or solid. Solid food products are further subdivided by shape or form. Only one descriptor should be chosen from facet E:

LIQUID
- LIQUID, HIGH VISCOSITY
- LIQUID, LOW VISCOSITY

SEMILIQUID
SEMISOLID
SOLID
- CRYSTAL
- DIVIDED OR DISINTEGRATED
- WHOLE
  - WHOLE, NATURAL SHAPE
  - WHOLE, SHAPE ACHIEVED BY FORMING
- WHOLE AND PIECES

In order to identify supplements cited by consumers, it is important to record how they are presented. Dietary supplements are often made available using forms that are used in pharmaceutical formulation (e.g. tablets, capsules). The existing descriptors in Facet E are not specific enough to index physical forms of supplements, so it is proposed to add a specific section in facet E. The following table details the proposed descriptors and the databases in which they are currently used.

Proposed Classification under E. PHYSICAL STATE, SHAPE OR FORM [E0113]

Proposed descriptors	**Sources**[26]
SUPPLEMENT FORM	FI, USDA, DK, FR, NL, ODS
TABLET	FI, USDA, DK, FR, NL, EPIC, ODS
CHEWABLE TABLET	FI, USDA, ODS
NON-CHEWABLE TABLET	ODS
EFFERVESCENT TABLET	FI, FR, NL
CAPSULE	FI, USDA, DK, FR, NL, EPIC, ODS
SOFTGEL CAPSULE	USDA, NL, ODS
GEL CAP	USDA, FR
VEGICAP (?)	USDA
POWDER	FI, USDA, DK, FR, NL, EPIC, ODS
GRANULES	FI, FR
BAR	ODS
LIQUID, SUPPLEMENT FORM	FI, EPIC, ODS
ORAL DROPS	FI, USDA, DK, FR, NL, EPIC
SYRUP	FI, USDA, FR, NL
SPRAY	USDA, FR, NL
PARENTERAL PREPARATION	FI
SOLUTION FOR INJECTION	FI, USDA, NL, EPIC

[26] **FI** = Finnish Dietary Supplements database; **USDA** = USDA ARS Dietary Supplement Ingredient Database (DSID-1); **DK** = Danish classification; **FR** = French AFSSA database on dietary supplements; **NL** = Dutch Supplement Database NES; **EPIC** = European Prospective Investigation into Cancer and Nutrition; **ODS** = US Office of Dietary Supplements.

Proposed descriptors	Sources[26]
SOLUTION FOR INFUSION	FI
SUPPLEMENT FORM, OTHER	DK, NL, ODS
WAFER	USDA, ODS
LOZENGE	FI, USDA, DK, FR, NL, ODS
GEL	ODS
GUMMIE	ODS
TEABAG	FR, ODS
SUPPLEMENT FORM, UNKNOWN	EPIC

The ISO standards for mono and multilingual thesauri recommend that descriptors be further defined using Synonyms, Related Terms, Additional Information, and Scope Notes to indicate the use of terms when indexing and when searching.

Proposed Synonyms, Scope Notes and Additional Information

Descriptor	Synonyms, Scope Notes, Additional Information
SUPPLEMENT FORM .	Synonym: **galenic formulation** Scope Note: This term is for CLASSIFICATION ONLY; DO NOT USE term in indexing. Use a more precise narrower term Additional Information: Food supplements are generally marketed in dose form designed to be taken in measured small unit quantities, such as pill, capsule, tablet, powder or liquid.
TABLET	Synonyms: **pill, caplet** Additional Information: A tablet is a mixture of active substances and excipients, usually in powder form, pressed or compacted into a solid. Tablets can be made in virtually any shape, although requirements of patients and tableting machines mean that most are round, oval or capsule shaped. Medicinal tablets and capsules are often called "pills". This is technically incorrect, since tablets are made by compression, whereas pills are ancient solid dose forms prepared by rolling a soft mass into a round shape. A caplet is a smooth, coated, oval shaped medicinal tablet in the shape of a capsule. [Wikipedia]
CHEWABLE TABLET	Additional Information: Chewable tablets are the tablets which are required to be broken and chewed in between the teeth before ingestion. These tablets are given to the children who have difficulty in swallowing and to the adults who dislike swallowing. A number of antacid tablets and multivitamin tablets are prepared as chewable tablets. Chewable tablets are to be chewed in the mouth and broken into smaller pieces prior to swallowing and are not intended to be swallowed intact. In this way the time required for disintegration is reduced and the rate of absorption of the medicament may increase. [http://www.pharmpedia.com/Chewable_tablets]
NON-CHEWABLE TABLET	
EFFERVESCENT TABLET	Additional Information: Effervescent tablets are uncoated tablets that generally contain acid substances and carbonates or bicarbonates and which react rapidly in the presence of water by releasing carbon dioxide. They are intended to be dissolved or dispersed in water before use. [http://www.pharmpedia.com/Effervescent_tablet]
CAPSULE	Additional Information: The two main types of capsules are hard-shelled capsules, which are normally used for dry, powdered ingredients, and soft-shelled capsules, primarily used for oils and for active ingredients that are dissolved or suspended in oil. Both of these classes of capsule are made both from gelatine and from plant-based gelling substances like carrageenans and modified forms of starch and cellulose. [Wikipedia]
SOFTGEL CAPSULE	Additional Information: Soft-shelled capsules are primarily used for oils and for active ingredients that are dissolved or suspended in oil. [Wikipedia]
GEL CAP	Synonym: **hard gelatine capsules** Traditionally hard gelatine capsules have been used for enclosure of powders or other solid substances like granules and pellets. Recently pastes and oils have also been filled in hard gelatine capsules.

Comment [15]: ok

Comment [JI16]: EPIC distinguishes TABLET and PILL

Comment [JI17]: Does this correspond to the EPIC "lemonade tablet"?

Descriptor	Synonyms, Scope Notes, Additional Information
	[http://www.pharmpedia.com/Hard_Gelatin_Capsules]
VEGICAP	Scope Note: Use for gelatine-free hard-shelled capsules. If appropriate, index also VEGAN/VEGETARIAN OR SUITABILITY FOR VEGAN/VEGETARIAN CLAIM OR USE [P0199]; KOSHER CLAIM OR USE [P0127].
POWDER	Synonym: **sachet, spoon** Additional Information: Powder for oral solution Related Term: *FINELY GROUND* [E0106]
GRANULES	Scope Note: Use to index granules for oral solution. Additional Information: Powder morphology is modified through the use of either a liquid that causes particles to bind through capillary forces or dry compaction forces. The process will result in one or more of the following powder properties: enhanced flow; increased compressibility; densification; alteration of physical appearance to more spherical, uniform, or larger particles; and/or enhanced hydrophilic surface properties. [http://www.pharmpedia.com/Granules]
BAR	Synonym: **nutrition supplement bar**
LIQUID, SUPPLEMENT FORM	Synonym: **spoon, ampoule** Related Term: * LIQUID* [E0130]
ORAL DROPS	Additional Information: Oral drops are liquid preparations for oral use that are intended to be administered in small volumes with the aid of a suitable measuring device.
SYRUP	Additional Information: Syrup or suspension/emulsion
SPRAY	Synonym: **squirt, oral spray**
PARENTERAL PREPARATION	Additional Information: Parenteral preparations are not dietary supplements per se, but are included in this classification because of their importance in nutrient intake. Parenteral preparations are sterile, pyrogen-free liquids (solutions, emulsions, or suspensions) or solid dosage forms containing one or more active ingredients, packaged in either single-dose or multidose containers. There are four main forms of parenteral preparations: injections, intravenous infusions (large volume parenterals), powders for injections, and implants. [http://apps.who.int/phint/en/p/docf/]
SOLUTION FOR INJECTION	Synonym: **injection; shot** Additional Information: Medicinal use, e.g. B12 injections. Injection means the act of forcing a liquid into the body by means of a needle and syringe.
SOLUTION FOR INFUSION	Synonym: **intravenous infusion, intravenous feeding** Additional Information: Infusion means the introduction of a substance, such as a fluid, electrolyte, nutrient, or drug, directly into a vein or interstitially by means of gravity flow.
SUPPLEMENT FORM, OTHER	Additional Information: Other liquid or powder forms for ingestion in dose amounts. Other forms not represented for use as a conventional food or as a sole item of a meal or the diet.
WAFER	
LOZENGE	Synonym: **troche** ScopeNote: includes strips Additional Information: A lozenge is designed to dissolve in the mouth. For example, to soothe the throat as a cough drop. [MedicineNet.com]
GEL	
GUMMIE	Additional Information: For example: Multivitamin Childrens Supplement Gummies
TEABAG	Synonym: **infusion**
SUPPLEMENT FORM, UNKNOWN	ScopeNote: Used when nothing is known about the form of the dietary supplement.

Comment [JI18]: EPIC distinguishes between powder in sachet and powder to take by spoon

Comment [JI19]: EPIC distinguishes between liquid in ampoule and liquid to be taken by spoon

Outstanding questions

- The French and Dutch databases distinguish COATED TABLETS (dragée) and ODS distinguishes Encapsulated (**coated/covered**). Rather than creating a specific subclass in facet E, the characteristic COATED can be simply indexed in facet H:
  - COATED OR COVERED [H0353]
- **Prolonged release** (in both Finnish and Dutch DS classifications) is a characteristic of both tablets and capsules. Prolonged-release /extended-release dosage forms are modified-release dosage forms showing a slower release of the active substance(s) than that of a conventional-release dosage form administered by the same route. Prolonged-release is achieved by a special formulation design and/or manufacturing method. Can this characteristic be indexed in facet Z?
- USDA includes **VEGICAP** for gelatine-free hard-shelled capsules. These could also be indexed with CAPSULE plus VEGAN/VEGETARIAN OR SUITABILITY FOR VEGAN/VEGETARIAN CLAIM [P0199]; KOSHER CLAIM [P0127].
  Additionally, a GELATINE-FREE CLAIM could be created in facet P.

6. Intended user group - LanguaL facet P

Intended user groups are classified in **LanguaL facet P (CONSUMER GROUP/DIETARY USE/LABEL CLAIM).** It is proposed to modify the term "HUMAN FOOD" to a more general term "HUMAN CONSUMER". According to indexing rules, at least one consumer group must be defined for each product. New user groups can be added as needed. The following table lists consumer groups already present in facet P, with proposals for Dietary Supplements in bold type:

Proposed consumer groups under CONSUMER GROUP [P0136]

Descriptor	Sources[27]
HUMAN ~~FOOD~~ CONSUMER [P0026]	
HUMAN ~~FOOD~~ CONSUMER, NO AGE SPECIFICATION [P0024]	FR, NL, ODS
HUMAN CONSUMER, FOUR YEARS AND ABOVE	ODS
ADULT ~~FOOD~~ CONSUMER [P0118]	FR, NL
ATHLETES	ODS
BODY-BUILDERS	ODS
MEN	US label, FR, NL
WOMEN	US label, FR, NL
PREGNANT OR LACTATING WOMEN	USDA, FR, NL, ODS
MENOPAUSED WOMEN	FR
SENIORS	US label, FR, NL
MENOPAUSED WOMEN	FR
CHILDREN/TEENAGERS	US label, FR, NL
CHILDREN LESS THAN 4 YEARS	ODS
TEENAGERS	FR, NL
INFANT OR TODDLER ~~FOOD~~ [P0020]	FR, ODS

[27] **US label** = US Dietary Supplements Labels Database; **USDA** = USDA ARS Dietary Supplement Ingredient Database (DSID-1); **FR** = French AFSSA database on dietary supplements; **NL** = Dutch Supplement Database NES; **ODS** = US Office of Dietary Supplements.

Proposed Synonyms, Scope Notes and Additional information

Descriptor	Synonyms, Scope Notes and Additional information
HUMAN ~~FOOD~~ CONSUMER, NO AGE SPECIFICATION [P0024]	Synonym: **all ages** Additional information: Food produced and marketed for human use without any restriction by age.
HUMAN CONSUMER, FOUR YEARS AND ABOVE	Additional information: FDA approved user group
ADULT ~~FOOD~~ CONSUMER [P0118]	
ATHLETES	
BODY-BUILDERS	
MEN	
WOMEN	
PREGNANT OR LACTATING WOMEN	
SENIORS	
MENOPAUSED WOMEN	
CHILDREN/TEENAGERS	
CHILDREN LESS THAN 4 YEARS	
TEENAGERS	Synonym: **adolescents, teens**
INFANT OR TODDLER ~~FOOD~~ [P0020]	Additional information: Food produced and marketed to supply the particular dietary needs of normal infants (21 CFR 105.65) or normal toddlers (age 1 to 2 years). Junior foods are included with the strained foods for infants up to one year. Foods fall in this category only if the label bears a statement such as 'baby food', 'strained food', 'junior food' or 'toddler food'.

Outstanding questions

- The ODS includes **sports**, **body-building** and **weight loss** in the USER GROUPS. Including ATHLETES and BODY-BUILDERS as subgroups to ADULTS can be justified, similar to the proposal to add PREGNANT OR LACTATING WOMEN and MENOPAUSED WOMEN as targeted users. However, it is difficult to define a population as “weight-losers”, so this is better left as a STRUCTURE – FUNCTION CLAIM (see below).
  What do you think?
- ODS also includes “Blood Type” & “Race”, but these are not defined user groups.

7. Nutrition/health claims - LanguaL facet P

It is important to document/index nutrition/health claims and intended user group of dietary supplements. Nutrition/health claims and Allergen labelling are classified in facet **P (CONSUMER GROUP/DIETARY USE/LABEL CLAIM)**. The following table shows Nutrition/health claims and Allergen labelling descriptors already present in facet P. Existing claims should be examined for relevance to dietary/food supplements. New claims can be added as needed. Multiple descriptors can be chosen when indexing.

Nutrition/health claims and Allergen labeling descriptors in facet P

Descriptor	BT[28]	Additional Information	Examples of existing NTs	USDA[29]	NL	ODS
DIETARY CLAIM OR USE [P0023] Scope Note: This term is for CLASSIFICATION ONLY; DO NOT USE term in indexing. Use a more precise narrower term	P. CONSUMER GROUP/DIETARY USE/LABEL CLAIM [P0032]	These descriptors are used either for foods intended for special dietary use as defined in 21 CFR 105 or for foods that have special characteristics indicated in the name or labeling. Such claims would include 'low calorie', 'low cholesterol', 'diet' or 'dietetic', etc. Prior to February 1992, this category of descriptors was limited solely to food for adult humans. The category is now used in conjunction with any appropriate *CONSUMER GROUP* descriptor(s), for example, 'low sugar baby food' would be indexed by *INFANT OR TODDLER FOOD* as well as by *LOW SUGARS FOOD*.	ARTIFICIAL INGREDIENT-RELATED CLAIM OR USE [P0106] COLOR-RELATED CLAIM OR USE [P0096] FLAVOR- OR TASTE-RELATED CLAIM OR USE [P0099] GENERAL LABEL CLAIM [P0059] HEALTH-RELATED CLAIM OR USE [P0124] NUTRITION-RELATED CLAIM OR USE [P0065] ORGANIC FOOD CLAIM OR USE [P0128] OTHER INGREDIENT- OR CONSTITUENT-RELATED CLAIM OR USE [P0115] SWEETENER-RELATED CLAIM OR USE [P0103]		**X**	**X**
HEALTH-RELATED CLAIM OR USE [P0124]	DIETARY CLAIM OR USE [P0023]	A claim is a health claim if in the naming of the substance or category of substances, there is a description or indication of a functionality or an implied effect on health; examples: "contains antioxidants" (the function is an antioxidant effect); "contains probiotics/prebiotics" (the reference to probiotic/prebiotic implies a health benefit). Equally, claims which refer to an indication of a functionality in the description of a nutrient or a substance (for instance as an adjective to the substance) should also be classified as a health claim; examples: "with prebiotic fibres" or "contains prebiotic fibres".	DIABETIC OR SUITABLE FOR DIABETICS CLAIM OR USE [P0198] TOOTH DECAY-RELATED CLAIM OR USE [P0125] **NB: US-approved health claims and qualified health claims can be added to this section, even though they are not allowed in the EU.**	**X**	**X**	**X**
NUTRITION-RELATED CLAIM OR USE [P0065] Scope Note: A claim is a nutrition claim if in the naming of the substance or category of substances, there is only factual information; examples: "contains lycopene"; "contains	DIETARY CLAIM OR USE [P0023]	As defined in Corrigendum to Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods, 'claim' means any message or representation, which is not mandatory under Community or national legislation, including pictorial, graphic or symbolic representation, in any form, which states, suggests or implies that a food has particular characteristics; specifically, 'nutrition claim' means any claim which states, suggests or implies that a food has particular beneficial nutritional properties due to: (a) the energy (calorific value) it (i) provides; (ii) provides at a reduced or increased rate; or (iii) does not provide; and/or (b) the nutrients or other substances it (i)	ENERGY SPECIAL CLAIM OR USE [P0045] FIBER SPECIAL CLAIM OR USE [P0049] PROTEIN SPECIAL CLAIM OR USE [P0202] VITAMIN- OR MINERAL-RELATED CLAIM OR USE [P0095] **NB: the LanguaL thesaurus contains narrower descriptors to express different nutrient content claims, using terms such high, low, free, less, rich in, source of.**	**X**	**X**	**X**

[28] BT = Broader Term in the hierarchy

[29] **USDA** = USDA ARS Dietary Supplement Ingredient Database (DSID-1); **NL** = Dutch Supplement Database NES; **ODS** = US Office of Dietary Supplements

Descriptor	BT[28]	Additional Information	Examples of existing NTs	USDA[29]	NL	ODS
lutein".		contains; (ii) contains in reduced or increased proportions; or (iii) does not contain.				
OTHER INGREDIENT-OR CONSTITUENT-RELATED CLAIM OR USE [P0115]	DIETARY CLAIM OR USE [P0023]	Other claims or statement of material facts (chemical, botanical, etc.)				**X**

Nutrition claims/Nutrient content claims

A statement on a food or dietary supplement product label that describes the amount of a nutrient or dietary substance in a product. Examples of nutrient claims for dietary supplement products include fortified, high, rich in, excellent source of, good source of, and high potency. Nutrient content claims requested by ODS (FDA approved nutrient content claims appropriate for supplements) are listed in the following table. Some of these descriptors already exist in the thesaurus, but most often in a more precise form.

US Nutrient content claims	Examples of existing LanguaL descriptors
1. More of nutrient X	ENRICHED CLAIM OR USE [P0183] FORTIFIED CLAIM OR USE [P0184] INCREASED {NAME OF NUTRIENT} NUTRITION CLAIM [P0208]
2. Percent of nutrient X (% of DRV)	*This refers to data present in the database, cannot be indexed*
3. Comparative percent : Nutrient X compared to Y	*SOURCE OF and RICH IN claims are both defined in comparison to "ordinary" foods.*
4. Good source of nutrient X (10-19% or more of DRV)	SOURCE OF FIBRE [P0205] SOURCE OF PROTEIN [P0206]
5. High / Excellent/ Rich in nutrient X (20% or more of DRV)	RICH IN FIBER CLAIM OR USE [P0075] HIGH FIBER FOOD [P0048] HIGH PROTEIN FOOD [P0203]

Health claims

A statement on a food or dietary supplement product label that describes a relationship between a food, food component, or dietary supplement ingredient and the reduction in risk of developing a disease or health-related condition. For example: "Healthful diets with adequate folate may reduce a woman's risk of having a child with a brain or spinal cord birth defect". Health content claims requested by ODS (FDA approved health claims) are listed in the following table. There are currently

only two health claims in the LanguaL thesaurus, but other health claims can be added, if they are authorized in US or in Europe (not necessarily both).

US Health claims	**Existing LanguaL descriptors**
	DIABETIC OR SUITABLE FOR DIABETICS CLAIM OR USE [P0198] TOOTH DECAY-RELATED CLAIM OR USE [P0125]
1. Calcium and osteoporosis	
2. Folate and neural tube defects	
3. soluble fiber from certain foods and risk of coronary heart disease	

The ODS also proposes the following Qualified Health Claims (FDA approved), which could be added as a Narrower Term to HEALTH-RELATED CLAIM OR USE [P0124]:

1. 0.8 mg folic acid and neural tube birth defects
2. vitamins and vascular disease
3. selenium and cancer
4. antioxidant vitamins and cancer
5. phosphatidyulserine and cognitive dysfunction and dementia
6. omega 3 fatty acids and coronary heart disease
7. monounsaturated fatty acids form olive oil and coronary heart disease
8. green tea and cancer
9. chromium picolinate and diabetes
10. calcium and colon/recatal cancer
11. calcium and recurrent colon/rectal polyps
12.calcium and hypertension,
13. calcium and pregnancy induced hypertension and preeclampsia
14. unsaturated fatty acids from canola oil and reduced risk of coronary heart disease
15. corn oil and corn oil containing products and a reduced risk of heart disease

In the same way as US legislation fixes claims approved on an authoritative statement of a scientific body, EU and EFSA are actually engaged in the evaluation of claims supported by foodstuffs (including dietary supplements). EFSA expects to complete the evaluation of the general function health claims by the end of 2011. At the end of the process, registers of authorized claims will be established by the EU.[30].

Structure – Function claims

A statement on a food or dietary supplement label that describes how a product may affect the organs or systems of the body; a specific disease cannot be mentioned. Structure/function claims do not require FDA approval, but the manufacturer must provide the FDA with the text of the claim within 30 days of putting the product on the market. Labels must also include a disclaimer that reads, "This statement has not been evaluated by the FDA. This product is not intended to diagnose, treat, cure, or prevent any disease." For example: "Calcium builds strong bones."

The ODS also proposes the following **STRUCTURE FUNCTION CLAIMS**, which could be added to Facet P as a Narrower Term to DIETARY CLAIM OR USE [P0023], with definitions:

[30] http://www.efsa.europa.eu/en/scdocs/doc/530.pdf

STRUCTURE FUNCTION CLAIMS
- "General health", structure function claim
- "Immune function", structure function claim
- "Sports", structure function claim
- "Energy", structure function claim
- "Weight loss", structure function claim
- "Mental health /brain health", structure function claim
- "Occasional insomnia", structure function claim
- "Supports mood", structure function claim
- "Menopause", structure function claim
- "Cardiovascular heart health", structure function claim
- "Joint health", structure function claim
- "Sexual health", structure function claim
- "Bone health", structure function claim
- "Gastrointestinal health", structure function claim
- "Modulates blood glucose levels", structure function claim
- "Hair, skin and nails", structure function claim
- "Vision/eye health", structure function claim
- Structure function claim disclaimer

Allergen claims - LanguaL facet P

Descriptors in the category *FOOD ALLERGEN LABELLING CLAIM* were introduced to LanguaL facet P in 2008 to make LanguaL comply with international regulations and GS1 GSDN[31]. They may in some cases be used for dietary supplements.

Descriptor	BT[32]	Examples of existing NTs	USDA[33]	NL
FOOD ALLERGEN LABELLING [P0213]	P. CONSUMER GROUP/DIETARY USE/LABEL CLAIM [P0032]	CEREALS CONTAINING GLUTEN AND PRODUCTS THEREOF [P0214] FISH AND PRODUCTS THEREOF [P0217] LUPINE AND PRODUCTS THEREOF [P0228] NUTS AND PRODUCTS THEREOF [P0221] PEANUTS AND PRODUCTS THEREOF [P0218] SOYBEANS AND PRODUCTS THEREOF [P0219] SULPHUR DIOXIDE AND SULPHITES [P0225] …	X	X

Other warning statements

ODS also proposed general warning statements that could be indexed in facet P:

P. CONSUMER GROUP/DIETARY USE/LABEL CLAIM [P0023]
- WARNING STATEMENT
  - PREGNANCY WARNING STATEMENT
  - OUT OF THE REACH OF CHILDREN, WARNING STATEMENT

[31] GS1 Global Data Synchronisation Network. http://www.gs1.org/gdsn

[32] BT = Broader Term in the hierarchy

[33] **USDA** = USDA ARS Dietary Supplement Ingredient Database (DSID-1); **NL** = Dutch Supplement Database NES

…

However, these need to be defined.

Other claims - LanguaL facet P

Religion- or customs-related claims can be indexed in LanguaL facet P:

RELIGION- OR CUSTOMS-RELATED CLAIM OR USE [P0124]
HALAL CLAIM OR USE [P0187]
KOSHER CLAIM OR USE [P0127]
PAREVE CLAIM OR USE [P0168]
VEGAN/VEGETARIAN OR SUITABILITY FOR VEGAN/VEGETARIAN CLAIM OR USE [P0199]

More than one claim can be indexed, so there is no reason to create a new descriptor for "Halal/Kosher". It should be noted that the descriptor applies to the product as a whole and not just to the coating materials (unless it is used in Full Ingredient Indexing).

Finally, there are other label claims in the LanguaL thesaurus that can be useful when indexing dietary supplements. More can be added if necessary.

- Examples of other label claims in LanguaL:
  - CAFFEINE FREE CLAIM [P0117]
  - "NATURALLY/NATURAL" LABEL CLAIM [P0209]
  - NO ARTIFICIAL SWEETENERS CLAIM [P0104]
  - NO COLOR ADDED CLAIM [P0098]
  - NO FLAVOR ADDED CLAIM [P0102]
  - ORGANIC CLAIM [P0128]
  - PROBIOTIC CLAIM [P0194]
  - UNSWEETENED CLAIM [P0105]

Outstanding questions

- It has also been proposed to create a new facet for claims (e.g. facet Q or Y), in order to simplify facet P.

Comment [eb20]: Not recorded in NL .

8. Packaging - LanguaL facets M & N

LanguaL allows packaging to be indexed, for example:

- a glass ampoule,
- a glass bottle with metal twist-off lid,
- a plastic jar with plastic child-proof cap,
- a blister pack,
- a paper sachet.

Facet M – Container or Wrapping describes the packing container, and **Facet N – Food Contact Surface** describes the resulting surface that the product contacts (the container's inner surface,

sometimes modified by a coating). Multiple terms may be chosen for both facets. Facet M needs to be reviewed for packaging used in dietary/food supplements.

Multipack dietary/food supplements can be flagged with the descriptor *MULTICONTAINER PACKAGE* [M0208].

Major subdivisions of facets M & N:

Facet M – Container or Wrapping	Facet N – Food Contact Surface
CONTAINER OR WRAPPING BY FORM	FOOD CONTACT SURFACE FROM HUMAN-MADE MATERIAL
AMPOULE	CERAMIC COATING
BAG, SACK OR POUCH	ENAMEL
BOX	**GLASS**
CAN, BOTTLE OR JAR	**METAL**
BOTTLE	**PAPER OR PAPERBOARD**
CAN	**PLASTIC**
CAPSULE DRUM (CONTAINER)	TEXTILE OR FABRIC
ENVELOPE	**COTTON CONTAINER**
MULTICONTAINER PACKAGE	WAX
PAIL	FOOD CONTACT SURFACE FROM NATURAL MATERIAL
TUBE	ASH
VIAL	CORK
WRAPPER, MATERIAL UNSPECIFIED	EDIBLE CASING
CONTAINER OR WRAPPING BY MATERIAL	EGG SHELL, FOOD CONTACT SURFACE
CERAMIC OR EARTHENWARE CONTAINER	HUSK, FOOD CONTACT SURFACE
EDIBLE CONTAINER	LEAF, FOOD CONTACT SURFACE
GLASS CONTAINER	MOLLUSC SHELL, FOOD CONTACT SURFACE
LAMINATE CONTAINER	NATURAL-BASED POLYMER WOOD
METAL CONTAINER	FOOD CONTACT SURFACE NOT KNOWN
NATURAL POLYMER	FOOD CONTACT SURFACE, OTHER
PAPERBOARD OR PAPER CONTAINER	NO FOOD CONTACT SURFACE PRESENT
PLASTIC CONTAINER	
TEXTILE OR FABRIC CONTAINER	
WAX CONTAINER	
WOOD CONTAINER	
SEALING/CLOSING ELEMENT	

Additional proposals by ODS:

CONTAINER OR WRAPPING BY FORM [M0195]
- Blister packet
- Dropper
- Tetrapack

FOOD CONTACT SURFACE FROM HUMAN-MADE MATERIAL [N0051]
- TEXTILE OR FABRIC [N0045]
  - Cotton (proposed by ODS)
- METAL [N0041
  - Metal foil (proposed by ODS)

Comment [AM21]: Could this be a synonym for PLASTIC CONTAINER, MOLDED OR BUBBLE PACK [M0180]?

Comment [AM22]: Synonym for PAPERBOARD CONTAINER WITH LINER [M0155]?

Comment [AM23]: Is this a specific metal?

Comment [eb24]: Not recorded in NL

9. Geographic origin - LanguaL facet R

From a point of view of food safety and traceability, it can also be interesting to index dietary supplements according to the place of manufacture (e.g. USA, Germany) or origin of botanicals (e.g. Turkey, China). **LanguaL facet R** lists geographic places according to different criteria (climatic zones, fishing zones, regions and countries). Additional descriptors can be added if needed.

Facet R - Geographic places and regions: main categories

CLIMATIC ZONE	FISHING AREAS
CONTINENTS, REGIONS AND COUNTRIES	AQUACULTURE
AFRICA	FAO STATISTICAL AREAS FOR FISHERY PURPOSES
ANTARCTICA	FRESHWATER FISHING AREA
ASIA	SALT WATER FISHING AREA
ATLANTIC OCEAN ISLANDS	GEOPOLITICAL DESIGNATION
AUSTRALIA	CODEX ALIMENTARIUS COMMISSION COUNTRIES
CENTRAL AMERICA	EUROPEAN UNION
EUROPE	ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD)
INDIAN OCEAN ISLANDS	
NORTH AMERICA	
PACIFIC OCEAN ISLANDS	
SOUTH AMERICA	

Comment [eb25]: Not recorded in NL

10. Other characteristics – LanguaL facet Z

Distribution Channels

The USDA ARS Dietary Supplement Ingredient Database (DSID-1)[34] also includes sales origin in product type:

- Prescription medication
- Over-the-counter medication

However, including these descriptors in the thesaurus would introduce up 2 problems:

(1) these descriptors refer to medication and not food supplements
(2) they call for a third possibility: Under-the-counter products (e.g. human growth hormone sold over the internet to body-builders, EPO for sports cyclists)

An alternate solution was proposed at the September 11th meeting: index **distribution channels** in facet Z Adjunct characteristics of food, similar to the PRODUCTION ENVIRONMENT classification in this facet. The following descriptors were proposed but need to be reviewed.

Comment [JI26]: Or create a new facet "X" for distribution?

Proposal for facet Z - Adjunct characteristics of food

Descriptor	Synonyms, Scope Notes, Additional Information

[34] Communication with Ms. Joanne Holden, Research Leader, USDA ARS Nutrient Data Laboratory. USDA ARS Dietary Supplement Ingredient Database (DSID-1). [http://dietarysupplementdatabase.usda.nih.gov/index.html]

DISTRIBUTION CHANNEL	Synonym: **distribution chain** Scope Note: This term is for CLASSIFICATION ONLY; DO NOT USE term in indexing. Use a more precise narrower term Additional Information: Chain of intermediaries, each passing the product down the chain to the next organization, before it finally reaches the consumer or end-user. This process is known as the 'distribution chain' or the 'channel'. [Wikipedia]
RETAIL	Additional Information: Retailing consists of the sale of goods or merchandise from a fixed location, such as a department store, boutique or kiosk, or by mail, in small or individual lots for direct consumption by the purchaser. [Wikipedia]
ELECTRONIC COMMERCE	Synonym: **internet sales; e-commerce** Additional Information: Electronic Commerce consists of the buying and selling of products or services over electronic systems such as the Internet and other computer networks. [Wikipedia]
HEALTH-FOOD STORE	Additional Information: A health food store is a type of grocery store that primarily sells health food, organic foods, local produce, and often nutritional supplements. Health food stores often offer foods for people with special dietary needs, such as people with allergies and diabetics, and also for vegans, vegetarians, and people living entirely on raw food. [Wikipedia]
STORE	Synonym: **supermarket; shop; retail store; grocery store; variety store** Additional Information: Retail establishments are often called shops or stores.
DIRECT MARKETING	Synonym: **telemarketing, phone marketing, door-to-door marketing** Additional Information: Direct marketing is a type of marketing. There are two main definitional characteristics which distinguish it from other types of marketing. The first is that it attempts to send its messages directly to consumers, without the use of intervening media. This involves commercial communication (direct mail, e-mail, telemarketing) with consumers or businesses, usually unsolicited. The second characteristic is that it is focused on driving a specific "call-to-action." This aspect of direct marketing involves an emphasis on trackable, measurable positive (but not negative) responses from consumers regardless of medium. [Wikipedia]
TELEMARKETING	Synonym: **telephone marketing; phone marketing; telesales** Additional Information: Telemarketing (known as telesales in the UK and Ireland) is a method of direct marketing in which a salesperson solicits to prospective customers to buy products or services, either over the phone or through a subsequent face to face or Web conferencing appointment scheduled during the call. [Wikipedia]
TELEVISION MARKETING	Synonym: **direct response television marketing; DRTV; infomercials** Additional Information: Direct marketing on TV has two basic forms: long form (usually half-hour or hour-long segments that explain a product in detail and are commonly referred to as *infomercials*) and short form which refers to typical 0:30 second or 0:60 second commercials that ask viewers for an immediate response (typically to call a phone number on screen or go to a website). TV-response marketing can be considered a form of direct marketing, since responses are in the form of calls to telephone numbers given on-air. [Wikipedia]
EXCLUSIVE DISTRIBUTION	Additional Information: Only specially selected resellers or authorized dealers (typically only one per geographical area) are allowed to sell the 'product'. [Wikipedia]
HEALTH CLUBS	*(definition, examples needed)*

PHARMACY	SYN: **drugstore; chemist** *(definition, examples needed)*
PHYSICIAN'S OFFICE	SYN: **doctor's office** *(definition, examples needed)*
MULTI-LEVEL MARKETING	SYN: **network marketing ; pyramid sales** Additional Information: Multi-level marketing (MLM), (also called network marketing) is a term that describes a marketing structure used by some companies as part of their overall marketing strategy. The structure is designed to create a marketing and sales force by compensating promoters of company products not only for sales they personally generate, but also for the sales of other promoters they introduce to the company, creating a downline of distributors and a hierarchy of multiple levels of compensation. The products and company are usually marketed directly to consumers and potential business partners by means of relationship referrals and word of mouth marketing. [Wikipedia] *Amway* is a direct selling company and manufacturer that uses multi-level marketing to sell a wide variety of products, primarily in the health & beauty industry. Amway's largest selling brand is the Nutrilite range of health supplements (marketed as Nutriway in some countries). [Wikipedia]

Colour

Colour of dietary supplements was another characteristic requested by users. This could eventually be used to distinguish different strengths of same manufacturer. At the same time, the USDA Nutrient Data Laboratory has requested colour descriptors for fruits and vegetables. These could be used for dietary supplements as well.

USDA NDL proposal

Z0256	PINK
Z0257	GREEN
Z0258	GOLD
Z0259	YELLOW
Z0260	WHITE
Z0261	RED
Z0262	PURPLE
Z0263	BLUE

Other supplement characteristics

Could other supplement characteristics, such as **Prolonged release** could be included in facet Z to avoid repetitions in facet E?

ANNEX 1: Other thesauri used to describe DS

Units

Unit description is influenced by International Standard, ISO 1000:1992 (incl. Draft Amendment 1, ISO 1000:1992/DAM 1(1997)). The standard is extended with food composition specific units.

Units of measure are not documented in food/product description (LanguaL), but in the EuroFIR "Unit" thesaurus. The EuroFIR "Unit" thesaurus contains a list of units that have so far been identified as relevant to food composition. To this list, it would be useful to add 3 more units that are used in the French database on dietary supplements: micromole, mole and International Units.

Code	Term	Scope Note	Additional Information	FR[35]	NL
ATE	alpha-tcopherol equivalent		1 ATE = 1 mg RRR-alpha-tocopherol. Sometimes quoted using the non-preferred name d-alpha-tocopherol 		
BCE	beta-carotene equivalent		1 BCE = 1 ug all-trans beta-carotene 		
BX	degrees Brix	Use only for the mass ratio of dissolved sucrose to water in a liquid expressed in degrees Brix (°Bx).	Degrees Brix (°Bx) is measured with a saccharimeter that measures specific gravity of a liquid or more easily with a refractometer. A 25 °Bx solution is 25% (w/w), with 25 grams of sucrose sugar per 100 grams of liquid.		
g	gram		ISO 1000:1992	X	
kcal	kilocalorie			X	
kg	kilogram		ISO 1000:1992		
kJ	kilojoule		ISO 1000:1992	X	
l	litre		Volume unit outside ISO 1000:1992, but recognized by CIPM as having to be retained because of its practical importance. ISO prefixes (e.g. deci, centi, milli, micro, etc.) may be attached to the unit to form multiples.		
mg	milligram		ISO 1000:1992	X	X
ml	millilitre		Multiple of volume unit, l (litre) outside ISO 1000:1992, but recognized by CIPM as having to be retained because of its practical importance.	X	
mmol	millimole		ISO 1000:1992	X	
MSE	monosaccharide equivalent		1 MSE = 1 g glucose		
NE	niacin equivalent				
ng	nanogram		ISO 1000:1992		
PCT	per cent	Never use for compositional values, which are always expressed as weight or volume unit per matrix unit, normally per 100g edible portion. 	Although most dimensionless properties are by preference expressed as a proportion, some may be more normally expressed as a percentage (%).	X	X
R	ratio	Used for properties expressed as a proportion. Any value expressed as a ratio will have matrix unit 'X', 'not applicable'.			

Comment [eb27]: NL: only for fatty acids

[35] **FR** = French AFSSA database on dietary supplements; **NL** = Dutch Supplement Database NES

Code	Term	Scope Note	Additional Information	FR[35]	NL
RE	retinol equivalent	Use for Retinol Activity Equivalent. The factors used to convert beta-carotene equivalents to retinol equivalents are recorded through the Method Indicator. 	1 RE = 1 ug all-trans retinol.		X
ug	microgram		ISO 1000:1992 The descriptor code 'ug' is used in preferrence to the use of a Greek character, μ, which requires an extended character set.	X	X
ul	microlitre		ISO 1000:1992 The descriptor code 'ug' is used in preferrence to the use of a Greek character, μ, which requires an extended character set. 	X	
um	**micromole**	PROPOSED UNIT		X	
mol	**mole**	PROPOSED UNIT		X	
IU	**International unit**	PROPOSED UNIT		X	

Common portions

The nutrient content of dietary supplement is usually declared per portion (e.g. per tablet). The common portions should be added in the controlled vocabulary of unit of measure denominator units. **Denominator units are not documented in food/product description (LanguaL),** but in the EuroFIR "Matrix Unit" thesaurus.

Code	Term	Scope Note	Additional Information	FI[36]	NL
D	per 100g dry weight				
DKG	per kg dry weight				
F	per 100g total fatty acids				
FT	per g total fat				
N	per g nitrogen				
T	per 100g total food	Used for data from foods Including any waste or inedible parts e.g. chicken wing with bones, banana including peel, etc.			
TF	per 100g total fat				
TKG	per kg total food				
V	per 100ml food volume				
VL	per **litre** food volume		When used for density, the corresponding unit must be g.		
VM	per ml food volume		When used for density, the corresponding unit must be mg.	X	

[36] **FI** = Finnish Dietary Supplements database; **NL** = Dutch Supplement Database NES

Code	Term	Scope Note	Additional Information	FI[36]	NL
W	per 100g edible portion				
WKG	per kg edible portion				
X	not applicable	Used for components like edible portion, usual portion, degrees Brix, pH, etc. 			
G	**per g edible portion**	PROPOSED MATRIX UNIT		**x**	
U	**per unit**	PROPOSED MATRIX UNIT	For example: per capsule		**X**
FOZ	**per fluid ounce**	PROPOSED MATRIX UNIT	A fluid ounce (abbreviated fl oz, fl. oz. or oz. fl.) is a unit of volume equal to 29.5735297 ml. US regulation 21 CFR 101.9(b)(5)(viii) also defines a fluid ounce as exactly 30 millilitres, but this is for use in nutrition labeling only.		
AMP	**per ampoule**	PROPOSED MATRIX UNIT for dietary supplements			
SAC	**per sachet**	PROPOSED MATRIX UNIT for dietary supplements			
TAB	**per tablet**	PROPOSED MATRIX UNIT for dietary supplements		**X**	
CAP	**per capsule**	PROPOSED MATRIX UNIT for dietary supplements		**X**	
DRP	**per drop**	PROPOSED MATRIX UNIT for dietary supplements		**X**	
TBS	**per tablespoon**	PROPOSED MATRIX UNIT for dietary supplements		**X**	
TSP	**per teaspoon**	PROPOSED MATRIX UNIT for dietary supplements		**X**	
SPN	**per measuring spoon**	PROPOSED MATRIX UNIT for dietary supplements		**X**	
MPK	**per multipack**	PROPOSED MATRIX UNIT for dietary supplements		**X**	
DRA	**per daily recommended amount**	PROPOSED MATRIX UNIT for dietary supplements	For example: per 3 tablets if 3 tablets per day are prescribed		**X**
	Other		For example per 7 mg or 3 drops		**X**

Comment [eb28]: NL: unit can be any of the recorded forms (facet E)

Comment [eb29]: In NL label information has to be per daily recommended amount

When documenting values expressed per unit, the weights (or volumes) of the portion units should also be recorded in the database.

ANNEX 2: How do retailers classify dietary supplements?

In commerce, dietary supplements are often classified by home health conditions.

Dietary Supplements Shopping.com[37]

- Anti-aging
- Arthritis
- Cholesterol
- Colds & flu
- Depression & stress
- Diabetes
- General health
  - Children's / Men's / Unisex / Women's
- Heart health
- Memory
- Men's health
- Natural energy
- Sleep aid
- Women's health

Dietary Supplements Online Shopping[38]

- Allergy Relief Supplement
- Asthma Dietary Supplements
- Atherosclerosis and High Cholesterol Supplements
- Back Pain Dietary Supplements
- Common Cold Dietary Supplements
- Hay Fever Herbal Supplement
- Herbal Supplements Myofascial
- Migraine Relief Supplements
- Neck Pain Relief Supplements
- Osteoarthritis Dietary Supplement
- Osteoporosis Food Supplements
- Rheumatoid Arthritis Supplements
- Sciatica Pain Relief Supplements

Discount Supplements[39]

- Herbal Teas
- Herbs & Extracts
- Minerals
- Multi Vitamin & Minerals
- Vitamins

Healthy Net[40]

- Vitamins in Human Nutrition
- Amino Acids
- Friendly Bacteria: Probiotics and Acidophilus
- Natural Hormones
- Bioflavonoids
- Antioxidants
- Minerals
- Supplemental Oils
- Digestive Aids
- Green Foods
- Glandulars
- Individual Dietary Supplements

Vitanet LLC [41]

- A, D, E & K vitamins
- Single B vitamins
- B complex vitamins
- C vitamins
- Multivitamins
- Single minerals
- Essential fatty acids
- Special formulas (e.g. 7-Keto DHEA, Apple pectin, Beta glucan)
- Single herbs
- Herbal blends
- Guaranteed potency herbs
- Ayurvedic herbs
- Glandular concentrates (e.g. Adrenal caps, Heart caps, Melatonin caps, Thyroid caps)
- Coenzyme Q10

[37] http://www.natural-health-supplements.biz/sitemap.html

[38] http://www.freeindex.co.uk/profile(dietary-supplements-online)_126084.htm

[39] http://www.discount-supplements.co.uk/shopdisplaycategories.asp?id=192&cat=Vitamins+%26+Herbs&ssc=gr&gclid=CPqtuuv1qJ8CFcg43goddg5W1A

[40] http://www.healthy.net/scr/mainlinks.aspx?id=269

[41] http://vitanetonline.com/

ANNEX NL: Alphabetic list of substituted substances to supplements, other then vitamins and minerals

AA	EPA	Linseed oil	Rhodiola
Acerola	Evening primrose oil	Lithium	Rose hip
Actaea	Fibre	LNA	Royal jelly
Aesculus	Fish oil	Lutein	Rutin
ALA	Fish oil powder	Lycopene	Seaweed
Algae	Fucus	Lysine	Senna
Alphalpha	Garcinia (=Mangosteen)	Milk thistle	Silica
Amino acids	Garlic	Millet	Silicic acid
Artichoke	Genistein	Mistletoe	Silicium
Bamboo	Ginger	MSM (Methylsulfonylmethane)	Soy
Bean extracts	Ginkgo biloba	Nickel	Spirulina
Bearberry	Ginseng	OA	St John's wort
Betaine	GLA	Olive oil	Stinging-nettle
Betalain	Glucomannan	Olive tree leaf	Sulphur
Bioflavonoids	Glucosamine	Omega-3 fatty acids	Synephrine
Birch	Glutamine	Omega-6 fatty acids	Taurine
Borage oil	Grape extract	Omega-9 fatty acids	Tea extract
Borium	Grape seeds	OPC (Proanthocyanidin)	Undaria
Bromelain	Green tea	Opuntia	Valerian
Cacao	Green-lipped mussel	Other	Vanadium
Cactus	Guar	PABA	Vegetables
Cafeine	Guarana	Pectin	Wheat-germ oil
Capsaicin	Guggul	Pepper extract	Wild yam
Carnitine	Gymnema sylvestre	Phaseolus	Willow's bark
Cat's claw	Harpogophytum	Phosphatidylcholine	Yeast extract
Chitosan	Hawthorn	Pine nut	Yerba maté
Chlorella	HCA (Hydroycitric Acid)	Pineapple	
Chlorophyll	Herbs	Policosanol	
Choline	Hesperidin	Polyphenols	
Chondroitin	Hop	Pomegranate	
Cider vinegar	Horsetail	Prebiotica	
Cinnamon	Inositol	Probiotica	
Citrus	Intrinsic factor	Propolis	
CLA	Inulin	Psyllium	
Cobalt	Isoflavones	Pumpkin seed extract	
Coleus	Kelp	Pumpkin seed oil	
Cranberry	Kola nut	Pycnogenol	
Curcuma	Konjac	Q10	
Cystine	LA	Quercetin	
DHA	Lecithin	Red clover	
Echinacea	Lemon oil	Red yeast rice	
EGCG	Lignans	Resveratrol	