Petition for Evaluation of
Dextrin for Inclusion on the National List of
Non-agricultural (non-organic) substances allowed in or on processed products labeled as "organic" or "made with organic (specified ingredients)"

Submitted by:

National Starch LLC
10 Finderne Avenue
Bridgewater, NJ 08807

Date:

April 1, 2010

Item A: 04-08-10 P02:15 IN

Category the substance is being petitioned for inclusion on the National List:

Non-agricultural (non-organic) substances allowed in or on processed products labeled as "organic" or "made with organic (specified ingredients)" as defined in 7 CFR 205.605.

Item B:

1. *Substance's Common Name:*

   Dextrin

2. *Manufacturer's Name, Address, and Telephone number:*

   Corporate Headquarters:

   National Starch LLC
   10 Finderne Avenue
   Bridgewater, NJ 08807
   Phone: (908) 685-5000

   Regulatory Contact Information:

   Scott J. Grare
   Product Assurance and Regulatory Affairs Advisor
   National Starch LLC
   10 Finderne Avenue
   Bridgewater, NJ 08807
   Phone: (908) 685-2738
   Fax: (908) 707-3688
   Email: scott.grare@nstarch.com

3. *Intended use of the substance:*

   Dextrin is used in a variety of food applications for nutritional and functional benefits. Dextrin can be used to provide structure to foods and replace fat and shortening, allowing for higher quality, lower fat content foods. Dextrin can also be used as a bulking agent in sweet baked goods to lower the sugar content. Dextrin can be added to a coating for products like confections or fried foods, increasing shelf-life and/or crisp texture. Dextrin can also be applied to the surface of a food for adhering spices and other particulates, and improve shine and appearance. Another application of dextrin is as a carrier in spray dried vitamins and flavors to aid in the drying process as well as protect the encapsulated materials from oxidation. Dextrin can also serve as a source of soluble fiber in foods and

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beverages for health benefits, as well as providing mouth feel and flavor improvement, especially in reduced fat or sugar beverages. Typical use levels for dextrins in foods and beverages are between 1-10%.

4. *List of food products for which the substance will be used:*

The anticipated use of the dextrin is for french fries, batter and breading, soups, sauces, confections, beverages, snacks, cereals, puddings, yogurts, and baked goods.

5. *Source of the substance and detailed description of its manufacturing or processing procedures:*

Dextrin is an incompletely hydrolyzed starch. It is prepared by heating starch from a variety of sources, including corn (maize), waxy maize, high-amylose maize, waxy milo, potato, arrowroot, wheat, rice, tapioca, or sago, etc., or by heating after treatment with safe and suitable acids.

The starch from which the dextrin is produced is a natural glucose polymer containing alpha-1,4 and alpha-1,6 linkages. During the dextinization process beta-1,4 and beta-1,6 linkages may also be formed. All of these bonds are found in nature. Both alpha-1,4 and alpha-1,6 glycosidic linkages are naturally occurring in all starches. Beta-1,4 is the primary linkage occurring in cellulose. Beta-1,4 and beta-1,6 linkages are widely occurring in cereals (oats and barley), mushrooms, and yeast.

There are four major steps in the production of dextrin: acidification, predrying, dextrinization, and cooling.

Acidification is accomplished by spraying powdered starch with a dilute acid solution, usually hydrochloric acid. The acidified starch is heated to remove moisture rapidly with minimal total heating. The predrying step will lower the moisture to about 1-5%. During the converting process the starch is heated to a temperature ranging from 95 C to 195 C. The temperature, pH, and moisture of the starch will determine the properties of the dextrin produced. The dextrin is then cooled to prevent further conversion.

These dextrin products may also be subject to additional processing steps to improve their functionality and organoleptic properties. The additional processing steps may include purification to reduce protein, lipid, and color impurities. During the purification process the dextrin is collected as it leaves the reactor [CBI-deleted] under very mild conditions for the purpose of providing better filtration in the following steps of the process. The conventional purification stages are implemented in order to eliminate the impurities of protein, lipids, and coloring matter. This purification is carried out by activated carbon treatment and the use of cationic and anionic resins.

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Following purification the dextrin may be subject to [CBI-deleted] which present characteristics specific to a given application. In some cases it may be necessary to remove residual free glucose produced during processing to meet performance requirements. [CBI-deleted] whereby the lower molecular weight fraction is separated from the higher molecular weight fraction for the purpose of decreasing the polydispersity of molecular weight distribution.

[CBI-deleted] and supplied with a syrup of dextrin product taken to a value of approximately 50% dry matter.

The dextrin may subsequently be submitted to a supplementary purification stage for the elimination of glucose. This supplementary processing is carried out by separation of the glucose [CBI-deleted]. The resultant resistant dextrin is then spray-dried to achieve a free flowing powder that is soluble in water.

6. *Summary of Previous Reviews by State or Private Certification Programs:*

[CBI-deleted]

b. Dextrin for use as a binder in seed coatings was submitted to USDA in April, 2007 and reviewed by NOSB at the Spring, 2008 meeting. The substance was rejected for its intended use in organic crop production. [Appendix 11]

7. *Regulatory Approvals:*

Dextrin is FDA affirmed as Generally Recognized as Safe (GRAS) under 21 CFR 184.1277 for use in food as a formulation aid, processing aid, stabilizer and thickener, and as a surface-finishing agent at levels not to exceed current good manufacturing practice [Appendix 3].

Specifications for food grade dextrin have been established in the *Food Chemicals Codex* [Appendix 4].

Dextrin is approved by EPA as an inert ingredient under 40 CFR 180.950, Tolerance exemptions for minimal risk active and inert ingredients [Appendix 5]. Dextrin is also on the EPA categorized list of inert pesticide ingredients under List 4A, minimal risk inert ingredients [Appendix 6]. The determination that a chemical is minimal risk is based on a recognition of the overall safety of the chemical (such as very low toxicity or practically non-toxic) considering the widely available information on the chemical's known properties, and a history of safe use under reasonable circumstances. Minimal risk (List 4A) substances are recognized as safe for use in all pesticide products subject only to good agricultural or good manufacturing practices.[1]

Dextrins are used in food products globally and have been evaluated by the Joint FAO/WHO Expert Committee on Food Additives (JECFA) [Appendix 7]. In their report the Committee assigned an acceptable daily intake (ADI) for man of not specified. The statement "ADI not specified" means that, on the basis of the available data (toxicological, biochemical, and other), that the total intake of the substance, arising from its use or uses at the levels necessary to achieve the desired effect and from its acceptable background in food, does not, in the opinion of the Committee, represent a hazard to health.[2]

8. *The Chemical Abstracts Service (CAS) number and other product numbers of the substance and labels of products that contain the petitioned substance.*

The CAS number for dextrin is 9004-53-9
The EINECS inventory number is 232-675-4
The Korean inventory number is KE-09627

Appendix 8 contains examples of food products that include dextrin as an ingredient.

9. *The substance physical properties and chemical mode of action.*

a. chemical interactions with other substances

Dextrin is an inert carbohydrate substance and would not be expected to chemically interact with other substances in an organic production environment.

b. toxicity and environmental persistence

Dextrin is not toxic and has been affirmed by the Food and Drug Administration to be Generally Recognized as Safe (GRAS). The safety of this material is discussed in item 10 below. Dextrin is biodegradable and as a polysaccharide it will be degraded by microorganisms found in the water and soil.

[1] http://www.epa.gov/opprd001/inerts/lists.html
[2] http://www.inchem.org/documents/jecfa/jecmono/v17je16.htm

c. environmental impacts from its use or manufacture

Dextrin is derived from starch, a naturally occurring carbohydrate polymer. Natural macromolecules contain hydrolysable linkages that are susceptible to biodegradation by the hydrolytic enzymes of microorganisms.[3] Therefore the dextrin would not be expected to persist in the environment.

No adverse effect on the environment would be expected from the manufacture. Any effluent from the manufacture of dextrin would be treated within the limits established under waste water permits and sent to a POTW. There may also be particulate matter generated during the manufacturing process. Particulate matter would be collected by dust collectors and/or scrubbers. Any remaining air emissions are within the Title V air permit limits. Any waste dextrin product would go into a recycle stream and used in downgraded products or go to a landfill. Recycling programs at the plants recover approximately 95% of the waste.

d. effects on human health

Dextrin has been affirmed as Generally Recognized As Safe (GRAS) by the FDA with no limitations on use other than good manufacturing practices. They have also been evaluated by the Joint FAO/WHO Expert Committee on Food Additives (JECFA) and recommended an ADI of "not specified" (refer to item 7 above).

e. effects on soil organisms, crops, livestock

Dextrin is derived from starch, a naturally occurring carbohydrate polymer. Natural macromolecules contain hydrolysable linkages that are susceptible to biodegradation by the hydrolytic enzymes of microorganisms. No adverse effects to soil organisms and crops would be anticipated.

Dextrin is generally recognized as safe (GRAS) for use in food and would not be expected to have adverse effects in livestock, if consumed.

10. *Safety information about the substance.*

Material Safety Data Sheets (MSDS) for CRYSTAL TEX 627, a tapioca dextrin and NUTRIOSE FM06, a corn dextrin are provided [Appendix 9].

A substance report from the National Institute of Environmental Health Studies is not available.

As discussed in 7 above, JECFA has evaluated dextrins based on absorption and metabolism, short-term, and long-term studies in rats and determined that an ADI is not

[3] G.M. Bohlmann in *Handbook o Biodegradable Polymers*, Ed., C. Bastioli, Rapra Technology Limited, Shropshire, UK, 2005, 186.

necessary [Appendix 7] . In the monograph comments they state that dextrins are regarded as identical to the intermediates formed in the normal digestion of starch and normal constituents of food.

11. *Research information about the substance.*

A literature search was conducted of published literature in the areas of food science, medical, safety/toxicology and regulatory databases [Appendix 10].

12. *Petition Justification Statement*

Dextrin is used in a variety of food applications for nutritional and functional benefits. Dextrin can be used to provide structure to foods, where fat and shortening are typically used, allowing for higher quality, lower fat content foods. Dextrin can also be used as a bulking agent in sweet baked goods to lower the sugar content. Dextrin has good film forming characteristics and can be used to replace gum Arabic in a coating for products like confections or fried foods, increasing shelf-life and/or crisp texture. Dextrin can also be applied to the surface of a food for adhering spices and other particulates, and improve shine and appearance. Another application of dextrin is as a carrier in spray dried vitamins and flavors to aid in the drying process as well as protect the encapsulated materials from oxidation. Dextrin's low viscosity and high solubility permits the preparation of high solids solutions and provides good emulsion stabilizing properties and encapsulation ability. Dextrin also has a bland taste that does not affect the flavor profile of other ingredients.

Prebiotic ingredients are in great demand for application in organic, natural and nutritional products, because of their proven nutritional and health benefits. Currently, there is only one commercial organic prebiotic fiber, inulin. Inulin however, causes severe digestive distress, and is often unstable to heat and acid processing. NUTRIOSE FM06 (corn-based dextrin) and NUTRIOSE FB06 (wheat-based dextrin) have prebiotic activity with no digestive side effects observed at the levels commonly used for prebiotic benefits in foods. NUTRIOSE dextrin also has excellent process stability and functionality in food products. Currently, many processors have tested NUTRIOSE and find them compatible with their product applications. The availability of NUTRIOSE to organic food and beverage processors will enable the production of truly nutritional and beneficial products without hazardous side effects to human health.

Dextrin is an inert material derived from starch, a polysaccharide, and is expected to degrade in the soil environment. Dextrin has been shown to be safe in food and has been affirmed as Generally Recognized As Safe (GRAS) by the FDA as a formulation aid, a processing aid, as a stabilizer and thickener, and as a surface-finishing agent with no limitation on use other than current good manufacturing practice. Dextrins have also been evaluated by JECFA with an ADI for man of "not specified", which means that in the opinion of the Committee dextrin does not represent a hazard to health and the establishment of an ADI is not necessary.

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13. *Commercial Confidential Information Statement*

Portions of sections 5 and 6 as well as Appendices 1 and 2 are regarded as business sensitive and requested to be removed from the publicly disclosed information in this petition.

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California Crop Improvement Association
Parson's Seed Certification Center
One Shields Avenue
University of California
Davis, CA 95616-8541
ccia.ucdavis.edu

Date: Oct 4, 2006
_total number of pages (includes cover sheet)

From: R.J. Simas **To:** Mark Butler

Tel: 530-754-5649 **Re:** letter requested
Fax: 530-752-4735 **Fax:** 408-848-2124

☐ Urgent ☐ For Your Information ☐ Reply ASAP ☐ Please Comment

Dear Mark.

I am sending you a copy of the letter sent to Bobby on December 20, 2005. in regards to [CBI Deleted]

Regards

Rene Guzman

CBI Deleted

California Crop Improvement Association

Frank G. Parsons Seed Certification Center
University of California
One Shields Avenue
Davis, California 95616-8541

Phone: (530) 752-0544
FAX: (530) 752-4735
ccia.ucdavis.edu

December 20, 2005

Mr. Bobby Garcia
Germain's Technology Group
Custom Coating and Enhancements, Inc.
8333 Swanston Lane
Gilroy, CA 95020

Dear Bobby,

I would like approve your request to use [CBI Deleted]

The California Crop Improvement Association feels since "Dextrins" are included on the EPA List 4 - Inerts of Minimal Concern and that such compounds are allowed pursuant to CFR Part 205.601(m)(1), that there use would be an appropriate in seed palletizing.

If you have any concerns or questions please feel free to contact me at 530-752-9823 or by email at rjsimas@ucdavis.edu

Sincerely,

Robert J. Simas
California Crop Improvement Association

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California Crop Improvement Association

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Phone: (530) 752-0544
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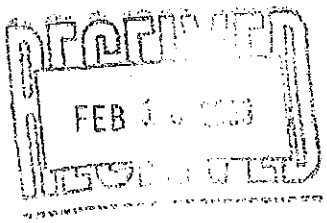
February 7, 2006



Mr. Bobby Garcia
Germain's Technology Group NA Inc.
8333 Swanston Lane
Gilroy, CA 95020

Dear Bobby,

Following up on our conversations of last week, I was unfortunately in error in my letter of December 20, 2005, approving the use of in a formulation compliant with the NOP Rule. I must therefore rescind the approval of in your pelleting formulations labeled to be compliant with the NOP Rule. [CBI Deleted] [CBI Deleted]

Although is a dextrin and dextrins are listed on the EPA List 4 – Inerts of Minimal Concern, it does not fit the specific pesticide criteria allowing for their use, as established under the USDA-NOP Rule. My error was not reading the specific pesticide conditions as listed in 205.601(m). In part these rules read: [CBI Deleted]

Regulatory Text
"§ 205.601 Synthetic substances allowed for use in organic crop production. .....
(m) As synthetic inert ingredients as classified by the Environmental Protection Agency (EPA), for use with nonsynthetic substances or synthetic substances listed in this section and used as an active pesticide ingredient in accordance with any limitations on the use of such substances.
(1) EPA List 4 - Inerts of Minimal Concern.
(2) EPA List 3 - Inerts of unknown toxicity - for use only in passive pheromone dispensers."

The Preamble to 205.601 also reads:
General Requirements
"In this final rule, only EPA List 4 Inerts are allowed as ingredients in formulated pesticide products used in organic crop and livestock production. **The allowance for EPA List 4 Inerts only applies to pesticide formulations.** Synthetic ingredients in any formulated products used as organic production inputs, including pesticides, fertilizers, animal drugs, and feeds, must be included on the National List."

If you develop other information that would qualify this product as an organic input, I would be pleased to re-visit it. Attached you will find the full text of the law (and preamble) pertaining to the organic status of products allowed in organic crop production.

If you have any concerns or questions please feel free to contact me at 530-752-9823 or by email at rjsimas@ucdavis.edu

Sincerely,

Robert J. Simas
California Crop Improvement Association

National List – Regulatory Text
Subpart G – Administrative
The National List of Allowed and Prohibited Substances

205.601 Synthetic substances allowed for use in organic crop production.
In accordance with restrictions specified in this section, the following synthetic substances may be used in organic crop production: Provided, That, use of such substances do not contribute to contamination of crops, soil, or water. Substances allowed by this section, except disinfectants and sanitizers in paragraph (a) and those substances in paragraphs (c), (j), (k), and (l) of this section, may only be used when the provisions set forth in § 205.206 (a) through (d) prove insufficient to prevent or control the target pest.
(a) As algicide, disinfectants, and sanitizer, including irrigation system cleaning systems.
(1) Alcohols.
(i) Ethanol.
(ii) Isopropanol.
(2) Chlorine materials - Except, That, residual chlorine levels in the water shall not exceed the maximum residual disinfectant limit under the Safe Drinking Water Act.
(i) Calcium hypochlorite.
(ii) Chlorine dioxide.
(iii) Sodium hypochlorite.
(3) Copper sulfate--for use as an algicide in aquatic rice systems, is limited to one application per field during any 24-month period. Application rates are limited to those which do not increase baseline soil test values for copper over a timeframe agreed upon by the producer and accredited certifying agent.
(4) Hydrogen peroxide.
(5) Ozone gas--for use as an irrigation system cleaner only.
(6) Peracetic acid--for use in disinfecting equipment, seed, and asexually propagated planting material.
(7) Soap-based algicide/demossers.
(b) As herbicides, weed barriers, as applicable.
(1) Herbicides, soap-based - for use in farmstead maintenance (roadways, ditches, right of ways, building perimeters) and ornamental crops.
(2) Mulches.
(i) Newspaper or other recycled paper, without glossy or colored inks.
(ii) Plastic mulch and covers (petroleum-based other than polyvinyl chloride (PVC)).
(c) As compost feedstocks.
Newspapers or other recycled paper, without glossy or colored inks.
(d) As animal repellents.
Soaps, ammonium - for use as a large animal repellant only, no contact with soil or edible portion of crop.
(e) As insecticides (including acaricides or mite control).
(1) Ammonium carbonate - for use as bait in insect traps only, no direct contact with crop or soil.
(2) Boric acid - structural pest control, no direct contact with organic food or crops.
(3) Copper Sulfate - for use as tadpole shrimp control in aquatic rice production, is limited to one application per field during any 24-month period. Application rates are limited to levels which do not increase baseline soil test values for copper over a timeframe agreed upon by the producer and accredited certifying agent.
(4) Elemental sulfur.
(5) Lime sulfur - including calcium polysulfide.
(6) Oils, horticultural - narrow range oils as dormant, suffocating, and summer oils..
(7) Soaps, insecticidal.
(8) Sticky traps/barriers.
(f) As insect management. Pheromones.
(g) As rodenticides.
(1) Sulfur dioxide - underground rodent control only (smoke bombs).
(2) Vitamin D3.
(h) As slug or snail bait - None.
(i) As plant disease control.
(1) Coppers, fixed - copper hydroxide, copper oxide, copper oxychloride, includes products exempted from EPA tolerance, Provided, That, copper-based materials must be used in a manner that minimizes accumulation in the soil and shall not be used as herbicides.
(2) Copper sulfate - Substance must be used in a manner that minimizes accumulation of copper in the soil.
(3) Hydrated lime.
(4) Hydrogen peroxide.
(5) Lime sulfur.
(6) Oils, horticultural, narrow range oils as dormant, suffocating, and summer oils.
(7) Peracetic acid - for use to control fire blight bacteria.
(8) Potassium bicarbonate.
(9) Elemental sulfur.
(10) Streptomycin, for fire blight control in apples and pears only.
(11) Tetracycline (oxytetracycline calcium complex), for fire blight control only.
(j) As plant or soil amendments.

(1) Aquatic plant extracts (other than hydrolyzed) - Extraction process is limited to the use of potassium hydroxide or sodium hydroxide; solvent amount used is limited to that amount necessary for extraction.

(2) Elemental sulfur.

(3) Humic acids - naturally occurring deposits, water and alkali extracts only.

(4) Lignin sulfonate - chelating agent, dust suppressant, floatation agent.

(5) Magnesium sulfate - allowed with a documented soil deficiency.

(6) Micronutrients - not to be used as a defoliant, herbicide, or desiccant. Those made from nitrates or chlorides are not allowed. Soil deficiency must be documented by testing.

(i) Soluble boron products.

(ii) Sulfates, carbonates, oxides, or silicates of zinc, copper, iron, manganese, molybdenum, selenium, and cobalt.

(7) Liquid fish products - can be pH adjusted with sulfuric, citric or phosphoric acid. The amount of acid used shall not exceed the minimum needed to lower the pH to 3.5.

(8) Vitamins, B1, C, and E.

(k) As plant growth regulators. Ethylene gas - for regulation of pineapple flowering.

(l) As floating agents in postharvest handling.

(1) Lignin sulfonate.

(2) Sodium silicate - for tree fruit and fiber processing.

(m) As synthetic inert ingredients as classified by the Environmental Protection Agency (EPA), for use with nonsynthetic substances or synthetic substances listed in this section and used as an active pesticide ingredient in accordance with any limitations on the use of such substances.

(1) EPA List 4 - Inerts of Minimal Concern.

(2) EPA List 3 - Inerts of unknown toxicity - for use only in passive pheromone dispensers.

(n)-(z) [Reserved]

[65 FR 80656, Dec. 21,2000, as amended at 68 FR 61992, Oct. 31, 2003]

National List – Preamble
Subpart G Administrative
The National List of Allowed and Prohibited Substances
Description of Regulations
General Requirements

This subpart contains criteria for determining which substances and ingredients are allowed or prohibited in products to be sold, labeled, or represented as "organic" or "made with organic (specified ingredients or food group(s))." It establishes the National List of Allowed and Prohibited Substances (National List) and identifies specific substances which may or may not be used in organic production and handling operations. Sections 6504, 6510, 6517, and 6518 of the Organic Foods Production Act (OFPA) of 1990 provide the Secretary with the authority to develop the National List. The contents of the National List are based upon a Proposed National List, with annotations, as recommended to the Secretary by the National Organic Standards Board (NOSB). The NOSB is established by the OFPA to advise the Secretary on all aspects of the National Organic Program (NOP). The OFPA prohibits synthetic substances in the production and handling of organically produced agricultural products unless such synthetic substances are placed on the National List.

Substances appearing on the National List are designated using the following classifications:

1. Synthetic substances allowed for use in organic crop production

2. Nonsynthetic substances prohibited for use in organic crop production

3. Synthetic substances allowed for use in organic livestock production

4. Nonsynthetic substances prohibited for use in organic livestock production

5. Nonagricultural (nonorganic) substances allowed as ingredients in or on processed products labeled as "organic" or "made with organic (specified ingredients or food group(s))

6. Nonorganically produced agricultural products allowed as ingredients in or on processed products labeled as organic" or "made with organic (specified ingredients or food group(s))

This subpart also outlines procedures through which an individual may petition the Secretary to evaluate substances for developing proposed National List amendments and deletions.

The NOSB is responsible for making the recommendation of whether a substance is suitable for use in organic production and handling. The OFPA allows the NOSB to develop substance recommendations and annotations and forward to the Secretary a Proposed National List and any subsequent proposed amendments. We have made every effort to ensure the National List in this final rule corresponds to the recommendations on allowed and prohibited substances made by the NOSB. In developing their recommendations, the NOSB evaluates synthetic substances for the National List utilizing the criteria stipulated by the Act. Additionally, criteria for evaluating synthetic processing ingredients have been implemented by the NOSB. These criteria are an interpretation and application of the general evaluation criteria for synthetic substances contained in the OFPA that the NOSB will apply to processing aids and adjuvants. The NOSB adopted these criteria as internal guidelines for evaluating processing aids and adjuvants. The adopted criteria do not supersede the criteria contained in the OFPA or replace the Food and Drug Administration's (FDA) regulations related to food additives and generally recognized as safe (GRAS) substances. The NOSB has also provided recommendations for the use of synthetic inert ingredients in formulated pesticide products used as production inputs in organic crop or livestock operations. The Environmental Protection Agency (EPA) regulates and maintains the EPA Lists of Inert ingredients used for pesticide. In this final rule, EPA Inerts List 1 and 2 are prohibited, EPA List 3 is also prohibited unless specifically recommended as allowed by the NOSB, and EPA List 4 Inerts are allowed unless specifically prohibited.

In this final rule, only EPA List 4 Inerts are allowed as ingredients in formulated pesticide products used in organic crop and livestock production. The allowance for EPA List 4 Inerts only applies to pesticide formulations. Synthetic ingredients in any formulated products used as organic production inputs, including pesticides, fertilizers, animal drugs, and feeds, must be included on the National List. As sanctioned by OFPA, synthetic substances can be used in organic production and handling as long as they appear on the National List. The organic industry should clearly understand that NOSB evaluation of the wide variety of inert ingredients and other nonactive substances will require considerable coordination between the NOP, the NOSB, and industry. Materials review can be anticipated as one of the NOSB's primary activities during NOP implementation. Considering the critical nature of this task, the organic industry should make a collaborative effort to prioritize for NOSB review those substances that are essential to organic production and handling. The development and maintenance of the National List has been and will be designed to allow the use of a minimal number of synthetic substances that are acceptable to the organic industry and meet the OFPA criteria.

We expect the maintenance of the National List to be a dynamic process. We anticipate that decisions on substance petitions for the inclusion on or deletion from the National List will be made on an annual basis. Any person seeking a change in the National List should request a copy of the petition procedures that were published in the Federal Register (65 Fed Reg 43259 - 43261) on July 13, 2000, from the NOP. The National List petition process contact information is: Program Manager, National Organic Program, USDA/AMS/TMP/NOP, Room 2945-S, Ag Stop 0268, P.O. Box 96456, Washington, DC 20090-6456 or visit the NOP website: www.ams.usda.gov/nop. Substances petitioned for inclusion on the National List will be reviewed by the NOSB, which will forward a recommendation to the Secretary. Any amendments to the National List will require rulemaking and must be published for comment in the Federal Register.

Nothing in this subpart alters the authority of other Federal agencies to regulate substances appearing on the National List. FDA issues regulations for the safe use of substances in food production and processing. USDA's Food Safety and Inspection Service (FSIS) has the authority to determine efficacy and suitability regarding the production and processing of meat, poultry, and egg products. FDA and FSIS restrictions on use or combinations of food additives or GRAS substances take precedence over the approved and prohibited uses specified in this final rule. In other words, any combinations of substances in food processing not already addressed in FDA and FSIS regulations must be approved by FDA and FSIS prior to use. FDA and FSIS regulations can be amended from time to time under their rulemaking procedures, and conditions of safe use of food additives and GRAS substances can be revised by the amendment. It is important that certified organic producers and handlers of both crop and livestock products consult with FDA regulations in 21 CFR parts 170 through 199 and FSIS regulations in this regard. All feeds, feed ingredients, and additives for feeds used in the production of livestock in an organic operation must comply with the Federal Food, Drug, and Cosmetic Act (FFDCA). Animal feed labeling requirements are published in 21 CFR Part 501, and new animal drug requirements and a listing of approved animal drugs are published in 21 CFR Parts 510-558. Food (feed) additive requirements, a list of approved food (feed) additives generally recognized as safe substances, substances affirmed as GRAS, and substances prohibited from use in animal food or feed are published in 21 CFR 570-571, 21 CFR 573, 21 CFR 582, 21 CFR 584, and 21 CFR 589, respectively. Furthermore, the Food and Drug Administration has worked closely with the Association of American Feed Control Officials (AAFCO) and recognizes the list of additives and feedstuffs published in the AAFCO Official Publication, which is updated annually.

Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), EPA regulates the use of all pesticide products, including those that may be approved for use in the NOP. In registering a pesticide under FIFRA, EPA approves the uses of each pesticide product. It is a violation of FIFRA to use a registered product in a manner inconsistent with its labeling. The fact that a substance is on the National List does not authorize use or a pesticide product for that use if the pesticide product label does not include that use. If the National List and the pesticide labeling conflict, the pesticide labeling takes precedence and may prohibit a practice allowed on the National List.

§ 184.1277 Dextrin.

(a) Dextrin ($(C_6H_{10}O_5)_n \cdot H_2O$, CAS Reg. No. 9004-53-9) is an incompletely hydrolyzed starch. It is prepared by dry heating corn, waxy maize, waxy milo, potato, arrowroot, wheat, rice, tapioca, or sago starches, or by dry heating the starches after: (1) Treatment with safe and suitable alkalis, acids, or pH control agents and (2) drying the acid or alkali treated starch.

(b) The ingredient meets the specification of the Food Chemicals Codex, 3d Ed. (1981), p. 96, which is incorporated by reference. Copies are available from the National Academy Press, 2101 Constitution Ave. NW., Washington, DC 20418, or available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(c) In accordance with §184.1(b)(1), the ingredient is used in food with no limitation other than current good manufacturing practice. The affirmation of this ingredient as generally recognized as safe (GRAS) as a direct human food ingredient is based upon the following current good manufacturing practice conditions of use:

(1) The ingredient is used as a formulation aid as defined in §170.3(o)(14) of this chapter; as a processing aid as defined in §170.3(o)(24) of this chapter; as a stabilizer and thickener as defined in §170.3(o)(28) of this chapter; and as a surface-finishing agent as defined in §170.3(o)(30) of this chapter.

(2) The ingredient is used in food at levels not to exceed current good manufacturing practice.

(d) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[48 FR 51909, Nov. 15, 1983]

Each mL of 0.1 N perchloric acid is equivalent to 20.53 mg of $C_9H_{19}NO_4$.

Acceptance criteria: NLT 98.0% and NMT 102.0% of $C_9H_{19}NO_4$, calculated on the anhydrous basis

IMPURITIES

Inorganic Impurities

- **LEAD,** *Lead Limit Test, Flame Atomic Absorption Spectrophotometric Method,* Appendix IIIB

  Sample: 5 g

  Acceptance criterion: NMT 5 mg/kg

Organic Impurities

- **AMINOPROPANOL**

  Sample: 5 g

  Analysis: Transfer the *Sample* into a 50-mL flask, and dissolve in 10 mL of water. Add bromothymol blue TS and titrate with 0.1 N sulfuric acid from a microburet to a yellow endpoint. Each mL of 0.1 N sulfuric acid is equivalent to 7.5 mg of aminopropanol.

  Acceptance criterion: NMT 1%

SPECIFIC TESTS

- **OPTICAL (SPECIFIC) ROTATION,** Appendix IIB

  Sample solution: 50 mg/mL in water (on the anhydrous basis)

  Acceptance criterion: $[\alpha]_D^{25}$ Between +29.0° and +31.5°

- **REFRACTIVE INDEX,** Appendix IIB

  [NOTE: Use an Abbé or other refractometer of equal or greater accuracy.]

  Acceptance criterion: Between 1.495 and 1.502 at 20°

- **RESIDUE ON IGNITION (SULFATED ASH),** Appendix IIC

  Sample: 1 g

  Acceptance criterion: NMT 0.1%

- **WATER,** *Water Determination,* Appendix IIB

  Acceptance criterion: NMT 1%

Dextrin

INS: 1400 CAS: [9004-53-9]

DESCRIPTION

Dextrin occurs as free-flowing white, yellow, or brown powders and consist chiefly of polygonal, rounded, or oblong or truncated granules. Dextrin is partially hydrolyzed starch converted by heat alone, or by heating in the presence of suitable food-grade acids and buffers, from any of several grain- or root-based unmodified native starches (e.g., corn, waxy maize, high-amylose maize, milo, waxy milo, potato, arrowroot, wheat, rice, tapioca, sago, etc.). Dextrin is partially to completely soluble in water.

Function Thickener; colloidal stabilizer; binder; surface-finishing agent

Packaging and Storage Store in well-closed containers.

IDENTIFICATION

- **PROCEDURE**

  Sample: 1 g

  Analysis: Suspend the *Sample* in 20 mL of water, and add a few drops of iodine TS.

  Acceptance criterion: A dark blue to red-brown color appears.

IMPURITIES

Inorganic Impurities

- **CHLORIDE**

  Sample solution: Dissolve 1 g of sample in 25 mL of boiling water, cool, dilute to 100 mL with water, and filter.

  Control: 20 µg chloride (Cl) ion

  Analysis: To 1 mL of filtrate from the *Sample solution,* add 24 mL of water, 2 mL of nitric acid, and 1 mL of silver nitrate TS. Repeat the preceding using the *Control* in place of the *Sample solution.*

  Acceptance criterion: Any turbidity produced in the *Sample solution* does not exceed that shown in the *Control.* (NMT 0.2%)

- **LEAD,** Appendix IIIB

  Sample solution: Transfer 4.0 g of sample to an evaporating dish, add 4 mL of sulfuric acid solution (1 : 4), and evaporate most of the water on a steam bath. Char and dehydrate the sample by heating on a hot plate, while at the same time, heating with an infrared lamp from above, and then heat in a muffle furnace at 500° until the residue is free from carbon. Remove the dish from the furnace, cool, and cautiously wash down the inside of the dish with water. Add 1 mL of 1 N hydrochloric acid, evaporate to dryness on a steam bath, and then add 2 mL of 1 N hydrochloric acid, and heat briefly, while stirring, on a steam bath. Quantitatively transfer the solution into a separatory funnel with the aid of small quantities of water, and neutralize with 1 N ammonium hydroxide.

  Control: 4 µg Pb (4 mL of *Diluted Standard Lead Solution*)

  Acceptance criterion: NMT 1 mg/kg

- **SULFUR DIOXIDE,** *Sulfur Dioxide Determination,* Appendix X

  Acceptance criterion: NMT 0.005%

Organic Impurities

- **REDUCING SUGARS:**

  Sample preparation: Transfer the 10 g of sample into a 200-mL collecting flask, dilute to volume with water, shake for 30 min, and filter through Whatman No. 1 filter paper, or equivalent, collecting the filtrate in a clean, dry flask. Use the collected filtrate as the *Sample preparation.*

  Analysis: Pipet 10 mL each of *The Copper Solution (A)* and *The Alkaline Tartrate Solution (B)* (see *Cupric Tartrate TS,* Solutions and Indicators) into a 250-mL Erlenmeyer flask, add 20.0 mL of the *Sample preparation* and 10 mL of water, and mix. Add two small glass beads, cover the mouth of the flask with a small glass funnel or glass bulb, and heat on a hot plate adjusted to bring the solution to a boil in 3 min. Continue boiling for exactly 2 min (total heating time, 5 min), and then quickly cool to room temperature in an ice bath or in a

cold running-water bath. Add 10 mL each of 30% potassium iodide solution and 28% sulfuric acid, and titrate immediately with 0.1 N sodium thiosulfate. Near the endpoint, add 1 mL of starch TS, and continue titrating carefully, while agitating the solution continuously, until the blue color is discharged. Record the volume (*S*), in mL, of 0.1 N sodium thiosulfate required. Conduct two reagent blank determinations in the same manner, substituting water for the sample filtrate, and record the average volume (*B*), in mL, of the blanks. Obtain the *Titer Difference*, expressed as mL of 0.1 N sodium thiosulfate, using the following equation:

$$\textit{Titer Difference} = B - S$$

B = Average volume (mL) of sodium thiosulfate used in the blank titration

S = Volume (mL) of sodium thiosulfate used in the sample titration

Using the *Titer Difference*, determine the weight, in mg, of reducing sugars, expressed as D-glucose (dextrose), by reference to the table below entitled *Conversion of Titer Difference to Reducing Sugars Content*. Record this value as *R*.

Calculate the percentage of reducing sugars, as D-glucose, on the dried basis, by the formula:

$$(R \times 200 \times 100)/(W \times 20 \times 1000)$$

W = Weight (g) of the sample taken

R = Weight (mg) of reducing sugars determined using the *Titer Difference*

Conversion of Titer Difference to Reducing Sugars Content[a]

Titer Difference (mL)[b]	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
	Reducing Sugar (as Dextrose) mg									
0.0	0.0	0.3	0.7	1.0	1.3	1.6	1.9	2.2	2.5	2.8
0.1	3.2	3.5	3.8	4.1	4.4	4.7	5.0	5.3	5.6	5.9
2.0	6.4	6.6	6.9	7.2	7.5	7.8	8.1	8.5	8.8	9.1
3.0	9.4	9.8	10.1	10.4	10.7	11.0	11.4	11.7	12.0	12.3
4.0	12.6	13.0	13.3	13.6	14.0	14.3	14.6	15.0	15.3	15.6
5.0	15.9	16.3	16.6	16.9	17.2	17.6	17.9	18.2	18.5	18.9
6.0	19.2	19.5	19.8	20.1	20.5	20.8	21.1	21.4	21.8	22.1
7.0	22.4	22.7	23.0	23.3	23.7	24.0	24.3	24.6	24.9	25.2
8.0	25.6	25.9	26.2	26.6	26.9	27.3	27.6	28.0	28.3	28.6
9.0	28.9	29.3	29.6	30.0	30.3	30.6	31.0	31.3	31.6	31.9
10.0	32.3	32.7	33.0	33.3	33.7	34.0	34.3	34.6	35.0	35.3
11.0	35.7	36.0	36.3	36.7	37.0	37.3	37.6	38.0	38.3	38.7
12.0	39.0	39.3	39.6	40.0	40.3	40.6	41.0	41.3	41.7	42.0
13.0	42.4	42.8	43.1	43.4	43.7	44.1	44.4	44.8	45.2	45.5
14.0	45.8	46.2	46.5	46.9	47.2	47.6	47.9	48.3	48.6	48.9
15.0	49.3	49.6	49.9	50.3	50.7	51.1	51.4	51.7	52.1	52.4
16.0	52.8	53.2	53.5	53.9	54.2	54.5	54.9	55.3	55.6	56.0
17.0	56.3	56.7	57.0	57.3	57.7	58.1	58.4	58.8	59.1	59.5
18.0	59.8	60.1	60.5	60.9	61.2	61.5	61.9	62.3	62.6	63.0
19.0	63.3	63.6	64.0	64.3	64.7	65.0	65.4	65.8	66.1	66.5
20.0	66.9	67.2	67.6	68.0	68.4	68.8	69.1	69.5	69.9	70.3
21.0	70.7	71.1	71.5	71.9	72.2	72.6	73.0	73.4	73.7	74.1
22.0	74.5	74.9	75.3	75.7	76.1	76.5	76.9	77.3	77.7	78.1
23.0	78.5	78.9	79.3	79.7	80.1	80.5	80.9	81.3	81.7	82.1
24.0	82.6	83.0	83.4	83.8	84.2	84.6	85.0	85.4	85.8	86.2
25.0	86.6	87.0	87.4	87.8	88.2	88.6	89.0	89.4	89.8	90.2
26.0	90.7	91.1	91.5	91.9	92.3	92.7	93.1	93.5	93.9	94.3
27.0	94.8									

[a] Use of this table presumes the ability of the analyst to duplicate exactly the conditions under which the data were developed. The risk of error can be avoided by careful duplicate standardization with known quantities of pure dextrose (five samples, ranging from 10 to 70 mg). A plot of *Titer Difference* versus mg of dextrose is slightly curvilinear, passing through the origin. If use of a standardization curve is adopted, the thiosulfate solution need not be standardized. Some additional increase in accuracy results from use of a 0.065 N sodium thiosulfate solution, which increases the blank titer to about 44 to 45 mL.

Acceptance criterion: NMT 18.0% (as D-glucose), calculated on the dried basis

SPECIFIC TESTS

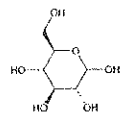
- **CRUDE FAT,** Appendix X
  Acceptance Criterion: NMT 1.0%
- **LOSS ON DRYING,** Appendix IIC (under vacuum not exceeding 100 mm Hg, at 120° for 4 h)
  Sample: 5.0 g
  Acceptance criterion: NMT 13.0%
- **PROTEIN**
  Sample: 10 g
  Analysis: Transfer the *Sample* into an 800-mL Kjeldahl flask, and add 10 g of anhydrous potassium or sodium sulfate, 300 mg of copper selenite or mercuric oxide, and 60 mL of sulfuric acid. Gently heat the mixture, keeping the flask inclined at about a 45° angle, and, after frothing has ceased, boil briskly until the solution has remained clear for about 1 h. Cool, add 30 mL of water, mix, and cool again. Cautiously pour about 75 mL (or enough to make the mixture strongly alkaline) of 400 mg/mL sodium hydroxide solution down the inside of the flask so that it forms a layer under the acid solution, and then add a few pieces of granular zinc. Immediately connect the flask to a distillation apparatus consisting of a Kjeldahl connecting bulb and a condenser, the delivery tube of which extends well beneath the surface of an accurately measured excess of 0.1 *N* sulfuric acid contained in a 50-mL flask. Gently rotate the contents of the Kjeldahl flask to mix, and distill until all ammonia has passed into the absorbing acid solution (about 250 mL of distillate). Add 0.25 mL of methyl red-methylene blue TS to the receiving flask, and titrate the excess acid with 0.1 *N* sodium hydroxide. Perform a blank determination, substituting pure sucrose or dextrose for the sample, and make any necessary correction (see *General Provisions*). Each mL of 0.1 *N* sulfuric acid consumed is equivalent to 1.401 mg of nitrogen (N).
  Calculate the percent N in the sample, and then calculate the percent protein by multiplying the percent N by 6.25, in the case of starches obtained from corn, or by 5.7, in the case of starches obtained from wheat. Other factors may be applied as necessary for starches obtained from other sources.
  Acceptance criterion: NMT 1.0%
- **RESIDUE ON IGNITION (SULFATED ASH),** Appendix IIC
  Sample: 5 g
  Acceptance criterion: NMT 0.5%

OTHER REQUIREMENTS

- **LABELING** Indicate the presence of sulfur dioxide if the residual concentration is greater than 10 mg/kg.

Dextrose

D-Glucose
Glucose
Corn Sugar



$C_6H_{12}O_6$ Formula wt 180.16
CAS: [50-99-7]

DESCRIPTION

Dextrose occurs as white, crystalline granules or as a granular powder. It is purified and crystallized D-glucose. It is anhydrous or contains one molecule of water of crystallization. It is freely soluble in water, very soluble in boiling water, and slightly soluble in alcohol.

Function Nutritive sweetener; humectant; texturizing agent

Packaging and Storage Store in tight containers in a dry place.

IDENTIFICATION

- **PROCEDURE**
  Sample: 50 mg/mL
  Analysis: Add a few drops of the *Sample solution* to 5 mL of hot alkaline cupric tartrate TS.
  Acceptance criterion: A copious red precipitate of cuprous oxide forms.

ASSAY

- **REDUCING SUGARS,** Appendix X
  Acceptance criteria: NLT 99.5% and NMT 100.5% of reducing sugar content (dextrose equivalent), expressed as D-glucose, calculated on the dried basis

IMPURITIES

Inorganic Impurities

- **ARSENIC,** *Arsenic Limit Test,* Appendix IIIB
  Sample: 1 g
  Control: 1 µg As (1 mL of *Standard Arsenic Solution*)
  Acceptance criterion: NMT 1 mg/kg
- **CHLORIDE**
  Sample: 2.0 g
  Acceptance criterion: Sample shows no more chloride than corresponds to 0.50 mL of 0.020 N hydrochloric acid. (NMT 0.018%)
  Acceptance criterion: NMT 0.018%
- **LEAD,** *Lead Limit Test, Atomic Absorption Spectrophotometric Graphite Furnace Method, Method I,* Appendix IIIB
  Sample: 5 g
  Acceptance criterion: NMT 0.1 mg/kg
- **SULFUR DIOXIDE,** *Sulfur Dioxide Determination,* Appendix X
  Sample: 75 g
  Acceptance criterion: NMT 0.002%

Electronic Code of Federal Regulations (e-CFR)

BETA TEST SITE

e-CFR Data is current as of June 26, 2006

Title 40: Protection of Environment
PART 180—TOLERANCES AND EXEMPTIONS FROM TOLERANCES FOR PESTICIDE CHEMICALS IN FOOD
Subpart D—Exemptions From Tolerances

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§ 180.950 Tolerance exemptions for minimal risk active and inert ingredients.

Unless specifically excluded, residues resulting from the use of the following substances as either an inert or an active ingredient in a pesticide chemical formulation, including antimicrobial pesticide chemicals, are exempted from the requirement of a tolerance under FFDCA section 408, if such use is in accordance with good agricultural or manufacturing practices.

(a) *Commonly consumed food commodities.* Commonly consumed food commodities means foods that are commonly consumed for their nutrient properties. The term commonly consumed food commodities shall only apply to food commodities (whether a raw agricultural commodity or a processed commodity) in the form the commodity is sold or distributed to the public for consumption.

(1) Included within the term commonly consumed food commodities are:

(i) Sugars such as sucrose, lactose, dextrose and fructose, and invert sugar and syrup.

(ii) Spices such as cinnamon, cloves, and red pepper.

(iii) Herbs such as basil, anise, or fenugreek.

(2) Excluded from the term commonly consumed food commodities are:

(i) Any food commodity that is adulterated under 21 U.S.C. 342.

(ii) Both the raw and processed forms of peanuts, tree nuts, milk, soybeans, eggs, fish, crustacea, and wheat.

(iii) Alcoholic beverages.

(iv) Dietary supplements.

(b) *Animal feed items.* Animal feed items means meat meal and all items derived from field crops that are fed to livestock excluding both the raw and processed forms of peanuts, tree nuts, milk, soybeans, eggs, fish, crustacea, and wheat. Meat meal is an animal feed composed of dried animal fat and protein that has been sterilized. Other than meat meal, the term animal feed item does not extend to any item designed to be fed to animals that contains, to any extent, components of animals. Included within the term animal feed items are:

(1) The hulls and shells of the commodities specified in paragraph (a)(2)(ii) of this section, and cocoa bean.

(2) Bird feed such as canary seed.

(3) Any feed component of a medicated feed meeting the definition of an animal feed item.

(c) *Edible fats and oils.* Edible fats and oils means all edible (food or feed) fats and oils, derived from either plants or animals, whether or not commonly consumed, including products derived from hydrogenating (food or feed) oils, or liquefying (food or feed) fats.

(1) Included within the term edible fats and oils are oils (such as soybean oil) that are derived from the commodities specified in paragraph (a)(2)(ii) of this section when such oils are highly refined via a solvent extraction procedure.

(2) Excluded from the term edible fats and oils are plant oils used in the pesticide chemical formulation specifically to impart their characteristic fragrance and/or flavoring.

(d) [Reserved]

(e) *Specific chemical substances.* Residues resulting from the use of the following substances as either an inert or an active ingredient in a pesticide chemical formulation, including antimicrobial pesticide chemicals, are exempted from the requirement of a tolerance under FFDCA section 408, if such use is in accordance with good agricultural or manufacturing practices.

Chemical	CAS No.
Acetic acid, sodium salt	127-09-3
Alpha-cyclodextrin	10016-20-3
Animal glue	None
Ascorbic acid (vitamin C)	50-81-7
Beeswax	8012-89-3
Benzoic acid, sodium salt	532-32-1
Beta-cyclodextrin	7585-39-9
Carbonic acid, monopotassium salt	298-14-6
Carbonic acid, monosodium salt (sodium bicarbonate)	144-55-8
Carnauba wax	8015-86-9
Carob gum (locust bean gum)	9000-40-2
Castor oil	8001-79-4
Castor oil, hydrogenated	8001-78-3
Cellulose	9004-34-6
Cellulose acetate	9004-35-7
Cellulose, carboxy methyl ether, sodium salt	9004-32-4
Cellulose, 2-hydroxyethyl ether	9004-62-0
Cellulose, 2-hydroxypropyl ether	9004-64-2
Cellulose, 2-hydroxypropyl methyl ether	9004-65-3
Cellulose, methyl ether	9004-67-5
Cellulose, mixture with cellulose carboxymethyl ether, sodium salt	51395-75-6
Cellulose, pulp	65996-61-4
Cellulose, regenerated	68442-85-3
Citric acid	77-92-9
Citric acid, 2-(acetyloxy)-, tributyl ester	77-90-7
Citric acid, calcium salt	7693-13-2
Citric acid, calcium salt (2:3)	813-94-5
Citric acid, dipotassium salt	3609-96-9
Citric acid, disodium salt	144-33-2
Citric acid, monohydrate	5949-29-1
Citric acid, monopotassium salt	866-83-1
Citric acid, monosodium salt	18996-35-5
Citric acid, potassium salt	7778-49-6
Citric acid, triethyl ester	77-93-0
Citric acid, tripotassium salt	866-84-2
Citric acid, tripotassium salt, monohydrate	6100-05-6

Citric acid, sodium salt	994-36-5
Citric acid, trisodium salt	68-04-2
Citric acid, trisodium salt, dihydrate	6132-04-3
Citric acid, trisodium salt, pentahydrate	6858-44-2
Coffee grounds	68916-18-7
Dextrins	9004-53-9
1,3-Dioxolan-2-one, 4-methyl-(propylene carbonate)	108-32-7
Fumaric acid	110-17-8
Gamma-cyclodextrin	17465-86-0
Gellan gum	71010-52-1
D-Glucitol (sorbitol)	50-70-4
Glycerol (glycerin) (1,2,3-propanetriol)	56-81-5
Guar gum	9000-30-0
Humic acid	1413-93-6
Humic acid, potassium salt	68514-28-3
Humic acid, sodium salt	68131-04-4
Lactic acid, n-butyl ester	138-22-7
Lactic acid, n-butyl ester, (S)	34451-19-9
Lactic acid, ethyl ester	97-64-3
Lactic acid, ethyl ester, (S)	687-47-8
Lanolin	8006-54-0
Lecithins	8002-43-5
Lecithins, soya	8030-76-0
Licorice Extract	68916-91-6
Maltodextrin	9050-36-6
Paper	None
Potassium chloride	7447-40-7
2-Propanol (isopropyl alcohol)	67-63-0
Red cabbage color, expressed from edible red cabbage heads via a pressing process using only acidified water	None
Silica, amorphous, fumed (crystalline free)	112945-52-5
Silica, amorphous, precipitated and gel	7699-41-4
Silica gel	63231-67-4
Silica gel, precipitated, crystalline-free	112926-00-8
Silica, hydrate	10279-57-9
Silica, vitreous	60676-86-0
Soap (The water soluble sodium or potassium salts of fatty acids produced by either the saponification of fats and oils, or the neutralization of fatty acid)	None
Sorbic acid, potassium salt	24634-61-5
Soapbark (Quillaja saponin)	1393-03-9
Sodium alginate	9005-38-3
Sodium chloride	7647-14-5
Syrups, hydrolyzed starch, hydrogenated	68425-17-2
Ultramarine blue (C.I. Pigment Blue 29)	57455-37-5
Urea	57-13-6
Vanillin	121-33-5
Xanthan gum	11138-66-2

[67 FR 36537, May 24, 2002, as amended at 67 FR 56229, Sept. 3, 2002; 67 FR 78718, Dec. 26, 2002; 68 FR 16437, Apr. 4, 2003; 68 FR 18552, Apr. 16, 2003; 68 FR 52700, Sept. 5, 2003; 69 FR 4077, Jan. 28, 2004; 69 FR 9963, Mar. 3, 2004; 69 FR 29894, May 26, 2004; 69 FR 33578, June 16, 2004; 69 FR 58070, Sept. 29, 2004; 70 FR 7876, Feb. 16, 2005; 70 FR 28447, May 18, 2005; 70 FR 38785, July 6, 2005; 71 FR 30811, May 31, 2006]

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Last updated: July 27, 2005

U.S. Environmental Protection Agency

Office of Pesticide Programs

List of Inert Pesticide Ingredients

List 4A - Minimal Risk Inert Ingredients - By Chemical Name

Updated August 2004

Inert Ingredients Ordered Alphabetically by Chemical Name - List 4A Updated August 2004

CAS	PREFIX	NAME	List No.
62-54-4		Acetic acid, calcium salt	4A
127-08-2		Acetic acid, potassium salt	4A
127-09-3		Acetic acid, sodium salt	4A
8007-69-0		Almond oil	4A
1327-43-1		Aluminum magnesium silicate	4A
1327-44-2		Aluminum potassium silicate	4A
		Animal feed items conforming to 40 CFR 180.950(b)	4A
		Animal glue	4A
50-81-7	L-	Ascorbic acid	4A
137-66-6		Ascorbyl palmitate	4A
8012-89-3		Beeswax	4A
1302-78-9		Bentonite	4A
85409-30-5		Bentonite, sodian	4A
1863-63-4		Benzoic acid, ammonium salt	4A
2090-05-3		Benzoic acid, calcium salt	4A
553-70-8		Benzoic acid, magnesium salt	4A
582-25-2		Benzoic acid, potassium salt	4A
532-32-1		Benzoic acid, sodium salt	4A
68409-75-6		Bone meal	4A
123-95-5		Butyl stearate	4A
5743-26-0		Calcium acetate, monohydrate	4A
471-34-1		Calcium carbonate	4A
6107-56-8		Calcium octanoate	4A
12168-85-3		Calcium oxide silicate (Ca3O(SiO4))	4A
10101-41-4		Calcium sulfate, dihydrate	4A
10034-76-1		Calcium sulfate, hemihydrate	4A
68476-78-8		Cane syrup	4A
120962-03-0		Canola oil	4A
7440-44-0		Carbon	4A
124-38-9		Carbon dioxide	4A
13397-26-7		Carbonic acid, calcium salt (calcite)	4A
546-93-0		Carbonic acid, magnesium salt (1:1)	4A
298-14-6		Carbonic acid, monopotassium salt	4A
144-55-8		Carbonic acid, monosodium salt	4A
		Cardboard	4A
8015-86-9		Carnauba wax	4A
9000-40-2		Carob gum (locust bean gum)	4A
9000-07-1		Carrageenan	4A
8001-79-4		Castor oil	4A
8001-78-3		Castor oil, hydrogenated	4A
		Cat food	4A
9004-34-6		Cellulose	4A
9004-35-7		Cellulose acetate	4A
9004-32-4		Cellulose carboxy methyl ether, sodium salt	4A
9004-62-0		Cellulose, 2-hydroxyethyl ether	4A
9004-64-2		Cellulose, 2-hydroxypropyl ether	4A
9004-65-3		Cellulose, 2-hydroxypropyl methyl ester	4A
9000-11-7		Cellulose, carboxymethyl ether	4A
9004-67-5		Cellulose, methyl ether	4A

	Cellulose, mixture with cellulose carboxymethyl ether,	
51395-75-6	sodium salt	4A
65996-61-4	Cellulose, pulp	4A
68442-85-3	Cellulose, regenerated	4A
77-92-9	Citric acid	4A
813-94-5	Citric acid, calcium salt (2:3)	4A
7693-13-2	Citric acid, calcium salt (2:3)	4A
3609-96-9	Citric acid, dipotassium salt	4A
144-33-2	Citric acid, disodium salt	4A
5949-29-1	Citric acid, monohydrate	4A
866-83-1	Citric acid, monopotassium salt	4A
18996-35-5	Citric acid, monosodium salt	4A
7778-49-6	Citric acid, potassium salt	4A
994-36-5	Citric acid, sodium salt	4A
866-84-2	Citric acid, tripotassium salt	4A
6100-05-6	Citric acid, tripotassium salt, monohydrate	4A
68-04-2	Citric acid, trisodium salt	4A
6132-04-3	Citric acid, trisodium salt, dihydrate	4A
6858-44-2	Citric acid, trisodium salt, pentahydrate	4A
68514-76-1	Citrus pulp, orange	4A
	Clam shells	4A
8002-31-1	Cocoa	4A
8001-31-8	Coconut oil	4A
68916-18-7	Coffee grounds	4A
	Commonly consumed food commodities conforming to 40 CFR 180.950(a)	4A
61789-98-8	Cork	4A
68525-86-0	Corn flour	4A
8001-30-7	Corn oil	4A
8029-43-4	Corn syrup	4A
68131-37-3	Corn syrup solids	4A
9005-25-8	Cornstarch	4A
	Cotton	4A
68424-10-2	Cottonseed meal	4A
8001-29-4	Cottonseed oil	4A
53988-07-1	Decanoic acid, diester with 1,2,3-propanetriol (9CI)	4A
26402-22-2	Decanoic acid, monoester with 1,2,3-propanetriol	4A
9004-53-9	Dextrins	4A
50-99-7	Dextrose	4A
61790-53-2	Diatomaceous earth (less than 1% crystalline silica)	4A
143-07-7	Dodecanoic acid	4A
142-18-7	Dodecanoic acid, 2,3-dihydroxypropyl ester	4A
27638-00-2	Dodecanoic acid, diester with 1,2,3-propanetriol (9CI)	4A
27215-38-9	Dodecanoic acid, monoester with 1,2,3-propanetriol (9CI)	4A
16389-88-1	Dolomite (CaMg(CO3)2)	4A
	Douglas fir bark	4A
	Edible fats and oils conforming to 40 CFR 180.950(c)	4A
	Egg shells	4A
68476-25-5	Feldspar group minerals	4A
8016-13-5	Fish oil	4A
8031-18-3	Fuller's earth	4A
110-17-8	Fumaric acid	4A

71010-52-1	Gellan gum (tolerance pending approval)	4A
68476-37-9	Glue (as depolymerized animal collagen)	4A
56-81-5	Glycerol (glycerin) 1,2,3 propanetriol	4A
7782-42-5	Graphite	4A
9000-30-0	Guar gum	4A
13397-24-5	Gypsum	4A
1317-60-8	Hematite (Fe2O3)	4A
57-10-3	Hexadecanoic acid	4A
26657-95-4	Hexadecanoic acid, diester with 1,2,3-propanetriol (9CI)	4A
26657-96-5	Hexadecanoic acid, monoester with 1,2,3-propanetriol	4A
8028-66-8	Honey	4A
68514-28-3	Humic acid, potassium salt	4A
68131-04-4	Humic acid, sodium salt	4A
68334-00-9	Hydrogenated cottonseed oil	4A
68514-74-9	Hydrogenated palm oils	4A
84681-71-0	Hydrogenated rapeseed oil	4A
8016-70-4	Hydrogenated soybean oil	4A
8013-17-0	Invert sugar	4A
12068-86-9	Iron magnesium oxide (Fe2MgO4)	4A
1317-61-9	Iron oxide (Fe3O4)	4A
1309-37-1	Iron oxide (Fe2O3)	4A
12259-21-1	Iron oxide (Fe2O3), hydrate	4A
1345-25-1	Iron oxide (FeO)	4A
110-27-0	Isopropyl myristate	4A
1332-58-7	Kaolin	4A
97-64-3	Lactic acid, ethyl ester	4A
138-22-7	Lactic acid, n-butyl ester	4A
63-42-3	D-(+)- Lactose	4A
64044-51-5	Lactose, monohydrate	4A
8006-54-0	Lanolin	4A
61789-99-9	Lard	4A
8002-43-5	Lecithins	4A
8030-76-0	Lecithins, soya	4A
68916-91-6	Licorice extract	4A
12001-27-3	Lime (chemical) dolomitic	4A
1317-65-3	Limestone	4A
8001-26-1	Linseed oil (unboiled)	4A
1309-48-4	Magnesium oxide	4A
12207-97-5	Magnesium oxide silicate (Mg3O(Si2O5)2), monohydrate	4A
1343-90-4	Magnesium silicate, hydrate	4A
14987-04-3	Magnesium silicon oxide (Mg2Si3O8)	4A
10034-99-8	Magnesium sulfate heptahydrate	4A
6915-15-7	Malic acid	4A
8002-48-0	Malt extract	4A
9050-36-6	Maltodextrin	4A
68131-12-4	Meat meal	4A
12003-38-2	Mica	4A
12001-26-2	Mica group minerals	4A
8052-35-5	Molasses	4A
1318-93-0	Montmorillonite	4A

1327-36-2	Mullite	4A
37244-96-5	Nepheline syenite	4A
7727-37-9	Nitrogen	4A
134134-87-5	Oat protein	4A
25496-72-4	9- Octadecanoic acid (9Z)-,monoester with 1,2,3 propanetriol	4A
1002-89-7	Octadecanoic acid, ammonium salt	4A
1592-23-0	Octadecanoic acid, calcium salt	4A
557-04-0	Octadecanoic acid, magnesium salt	4A
12694-22-3	9- Octadecanoic acid, monoester with oxybis (propanediol)	4A
593-29-3	Octadecanoic acid, potassium salt	4A
822-16-2	Octadecanoic acid, sodium salt	4A
557-05-1	Octadecanoic acid, zinc salt	4A
111-03-5	9- Octadecenenoic acid (Z)-, 2,3-dihydroxypropyl ester (9Cl)	4A
143-18-0	9- Octadecenoic acid (9Z)-, potassium salt	4A
143-19-1	9- Octadecenoic acid (9Z)-, sodium salt	4A
7492-30-0	9- Octadecenoic acid, 12-hydroxy-, monopotassium salt, (9Z,	4A
5323-95-5	9- Octadecenoic acid, 12-hydroxy-, monosodium salt, (9Z, 12R	4A
49553-76-6	9- Octadecenoic acid, ester with 1,2,3-propanetriol	4A
71012-10-7	9- Octadecenoic acid, monoester with tetraglycerol	4A
36354-80-0	Octanoic acid, diester iwht 1,2,3-propanetriol (9Cl)	4A
26402-26-6	Octanoic acid, monoester with 1,2,3-propanetriol	4A
1984-06-1	Octanoic acid, sodium salt	4A
1323-83-7	Octodecanoic acid, diester with 1,2,3-propanetriol (9Cl)	4A
11099-07-3	Octodecanoic acid, ester with 1,2,3-propanetriol (9Cl)	4A
31566-31-1	Octodecanoic acid, monoester with 1,2,3-propanetriol (9Cl)	4A
25637-84-7	9- Octodecenoic acid (9Z)-, diester with 1,2,3-propanetriol (9C	4A
68917-73-7	Oils, wheat	4A
112-80-1	Oleic acid	4A
8001-25-0	Olive oil	4A
	Oyster shells	4A
8002-75-3	Palm oil	4A
	Paper	4A
68991-42-4	Paprika	4A
8002-74-2	Paraffin wax	4A
8002-03-7	Peanut oil	4A
	Peat moss	4A
130885-09-5	Perlite	4A
93763-70-3	Perlite, expanded	4A
26499-65-0	Plaster of Paris	4A
9002-88-4	Polyethylene	4A
7646-93-7	Potassium bisulfate	4A
7447-40-7	Potassium chloride	4A
764-71-6	Potassium octoate	4A
24634-61-5	Potassium sorbate	4A
9007-48-1	1,2,3- Propanetriol, homopolymer (9Z)-9-octadecenoate	4A
9009-32-9	1,2,3- Propanetriol, homopolymer, octadecanoate	4A
1332-09-8	Pumice	4A
68553-81-1	Rice bran oil	4A
9006-04-6	Rubber	4A

8001-23-8	Safflower oil	4A
	Sawdust	4A
8008-74-0	Sesame seed oil	4A
63231-67-4	Silica Gel	4A
112926-00-8	Silica gel, precipitated, crystalline-free	4A
112945-52-5	Silica, amorphous, fumed (crystalline free)	4A
7699-41-4	Silica, amorphous, precipitated and gel	4A
10279-57-9	Silica, hydrate	4A
60676-86-0	Silica, vitreous	4A
13776-74-4	Silicic acid (H2SiO3), magnesium salt (1:1)	4A
12003-51-9	Silicic acid (H4SiO4), aluminum sodium salt (1:1:1)	4A
12736-96-8	Silicic acid, aluminum potassium sodium salt	4A
1335-30-4	Silicic acid, aluminum salt	4A
1344-00-9	Silicic acid, aluminum sodium salt	4A
1344-95-2	Silicic acid, calcium salt	4A
1343-88-0	Silicic acid, magnesium salt	4A
7631-86-9	Silicon dioxide (crystalline-free forms only)	4A
1393-03-9	Soapbark (Quillaja saponin)	4A
9005-38-3	Sodium alginate	4A
7647-14-5	Sodium chloride	4A
50-70-4	Sorbitol	4A
8001-22-7	Soybean oil	4A
8002-24-2	Sperm oil	4A
57-11-4	Stearic acid	4A
57-50-1	Sugar	4A
7704-34-9	Sulfur	4A
7778-18-9	Sulfuric acid, calcium salt (1:1)	4A
7778-80-5	Sulfuric acid, dipotassium salt	4A
7757-82-6	Sulfuric acid, disodium salt	4A
7727-73-3	Sulfuric acid, disodium salt, decahydrate	4A
7487-88-9	Sulfuric acid, magnesium salt (1:1)	4A
68937-99-5	Sunflower seeds	4A
61789-97-7	Tallow	4A
544-63-8	Tetradecanoic acid	4A
589-68-4	Tetradecanoic acid, 2,3-dihydroxypropyl ester	4A
53563-63-6	Tetradecanoic acid, diester with 1,2,3-propanetriol (9CI)	4A
27214-38-6	Tetradecanoic acid, monoester with 1,2,3-propanetriol (9CI	4A
13429-27-1	Tetradecanoic acid, potassium salt	4A
57-13-6	Urea	4A
121-33-5	Vanillin	4A
1318-00-9	Vermiculite	4A
	Vinegar (maximum of 8% acetic acid in solution)	4A
1406-18-4	Vitamin E	4A
7732-18-5	Water	4A
8006-95-9	Wheat germ oil	4A
8042-47-5	White mineral oil (petroleum)	4A
68917-75-9	Wintergreen oil	4A
13983-17-0	Wollastonite (Ca(SiO3))	4A
11138-66-2	Xanthan gum	4A
68876-77-7	Yeast	4A

1318-02-1	Zeolites (excluding erionite (CAS Reg. No. 66733-21-9))	4A
68989-22-0	Zeolites, NaA	4A
12063-19-3	Zinc iron oxide	4A
1314-13-2	Zinc oxide	4A

DEXTRINS

Explanation

This substance was evaluated previously for an ADI for man by the Joint FAO/WHO Expert Committee on Food Additives in 1969 and 1974 (see Annex I, Refs. 19 and 29). Toxicological monographs were published in 1969 and 1974 (see Annex I, Refs. 20 and 30).

Since the previous evaluation, additional data have become available and are summarized and discussed in the following monograph. The previously published monograph has been expanded and is reproduced in its entirety below.

Introduction

White dextrins are prepared by heating dry starch in the presence of an acid at a temperature generally below 150°C. White dextrins may also be obtained by further continuing the acid process for making thin boiling starches. Because of the nature of the application as well as their flavour, their use in food is restricted. Dextrins are a stage in the normal digestion of starch occurring in the human gastrointestinal tract. They represent a broad range of products with considerably smaller molecular size than native starch.

Yellow dextrins are prepared in a similar manner but at a higher temperature and using less acid. Apart from depolymerization, a good deal of internal rearrangement occurs with formation of highly branched molecules. These materials are used in foods in limited quantities as adjuvants in flavour encapsulation and similar minor uses.

BIOLOGICAL DATA

BIOCHEMICAL ASPECTS

Absorption and metabolism

Dextrins and their parent starches were fed to groups of 6 weanling male rats (strain unspecified), initial weight 45-60 g, at a level of 60 g/kg bw for 21 to 28 days. Diets contained 18.8% casein. The digestibility of wheat dextrin was somewhat lower than that of wheat starch. The potato dextrin gave a higher body weight gain and digestibility coefficient than the parent starch (Booher et al., 1951).

In a study on the effect of type of dietary carbohydrate on B-vitamin synthesis in the digestive tracts of rats, groups of 17 to 44 male and female rats (strain unspecified), 21 days of age were placed on test diets containing 18% protein (casein), 71%

carbohydrate, and 3% butterfat, cod-liver oil and salt mixture. The carbohydrate sources used included cornstarch, corn dextrin, glucose, lactose and sucrose. Animals on all diets, without supplemental B-vitamins but with access to their faeces, showed low or declining growth rates after 2 weeks except for the group fed the dextrin diet.

Growth rates in all groups were increased after receiving faeces of the dextrin-fed group. Rats receiving the dextrin diet had enlarged caeca at the conclusion of the study. Caecectomized rats with access to their faeces lost weight when fed a dextrin diet; supplementation with baker's yeast resulted in weight gain. It was concluded that the peculiar property of corn dextrin was not due to retained B-vitamins, but rather to the formation of these vitamins in the lower part of the digestive tract of the rat as a result of incomplete digestion of this particular carbohydrate (Guerrant et al., 1935).

Fournier (1959) studied the effect of various dietary carbohydrate sources on calcium retention, serum calcium levels, and caecal size in the rat. Wistar rats (sex unspecified) weighing 62-74 g, were fed a low calcium diet (50 mg Ca/100 g diet) for 18 days after which groups of 6 rats were placed on diets containing 15% casein, 1.5% calcium carbonate and 45-70% experimental carbohydrate (starch, dextrin, caramel or glucose) plus cereal grain to bring total carbohydrate to about 70%. Rats received an estimate of 46 g dextrin per kg body weight. Calcium balance was determined during the third to fifth day; after 10 days the rats were sacrificed and serum calcium determined. Caecal enlargement observations were made after 2 weeks of feeding a diet containing 75% of the experimental carbohydrate source, 12% casein, 8% peanut oil and 3% salts. Calcium intake was approximately the same for all diets, but calcium retention for the dextrin and caramel diets was nearly double that for the starch and glucose diets. Serum calcium levels also were greater for the dextrin and caramel diets. Dry caecal weights of rats fed dextrin and caramel were more than double those fed the starch and glucose diets. The author postulated that dextrin and caramel were less easily metabolized than their parent substances, starch and glucose, and that this property contributed to the effects observed.

^{14}C-labelled beta-cyclodextrin homogenized in aqueous dextran was administered to 5 Wistar plus Long Evans F_1 hybrid male rats weighing about 200 g each. Individual animals received doses corresponding to their body weight through an oesophageal cannula. Three control animals received ^{14}C-labelled glucose. Blood levels of the compounds were measured at intervals up to 97 hours from tail vein samples. At 7, 12 and 24 hours after administration, selected animals were decapitated, and radioactivity was measured in stomach, small intestine and colon. In the case of the cyclodextrin, a maximum of only 5% of the administered activity could be found in blood even after 10 hours; after 96 hours the same residual radioactivity was found in the blood with both glucose and ß-cyclodextrin. This study suggests that ß-cyclodextrin cannot be absorbed either from the stomach or the small intestine; only the labelled open-chain dextrins and glucose formed from cyclodextrin by amylase action were absorbed (Szejtli et al., 1980).

TOXICOLOGICAL STUDIES

Special studies on nephrosis in the rat kidney due to alpha- and beta-cyclodextrin

Groups of 5 male and 5 female Sprague-Dawley rats weighing 150 to 160 g were administered cyclodextrins intravenously. The i.v. LD_{50} for rats was determined to be 0.79-1.0 g/kg bw with a close relationship between the acute toxicity and the nephrotoxic dose (Frank et al., 1976).

Groups of 4 100-124 g Sprague-Dawley rats received single s.c. doses of cyclodextrins of 0.225, 0.45 or 0.90 g/kg and were killed 12, 24, 48 or 96 hours later. Controls received saline injections. Kidneys were sectioned for light microscopy and histopathological observations (Frank et al., 1976).

In another experiment, groups of 4 100-125 g Sprague-Dawley rats were given 1, 2, 3, 4 or 7 daily s.c. injections of cyclodextrins at 0.225, 0.45, 0.675, 0.90, 0.1 or 1.0 g/kg bw. Controls received saline injections. Rats were killed 24 hours after the last injection and kidneys were sectioned for histopathological observations (Frank et al., 1976).

Renal toxicity due to the cyclodextrins was shown to result from a series of alterations in the vacuolar organelles of the proximal convoluted tubules. Intracellular concentration of toxin via the lysosomal pathway resulted in a change of the physiological function of the proximal tubule which ultimately leads to cell death (Frank et al., 1976).

Short-term studies

Rat

Groups of 10 male Wistar rats received diets with 6 or 15% protein from casein and 77 or 66% carbohydrate (75 and 65 g carbohydrate/kg bw). After 28 days, protein efficiency and weight gain/g of dry food were significantly lower for corn dextrin than for cornstarch, but were greater or equal to values for dextrose. Corn dextrin diets caused no unusual effect on liver weight or liver fat content; however, rats receiving corn dextrin exhibited a slight diarrhoea and caecal enlargement to about twice that in rats fed unmodified cornstarch (Reussner et al., (1963).

Groups of 6 Sprague-Dawley male weanling rats (initial weight 40-50 g), were fed for periods of 2-12 weeks on diets containing approximately 80 g dextrin/kg bw; diets contained 81% carbohydrate, 9% casein and 5% corn oil. Rates of gain with the dextrins over a 4-week period were about 15% less than that for autoclaved cornstarch; the latter weight was about double when the carbohydrate source was glucose or sucrose. Liver fat deposition was less for one of the dextrins, cornstarch or glucose, than for sucrose as the carbohydrate source. Liver fat deposition values were not reported for the other dextrin (Harper et al., 1953).

Groups of 5 or 10 male weanling Sprague-Dawley or Osborne-Mendel rats, weighing initially 40-50 g, were fed diets containing about 80 g carbohydrate/kg bw; diets consisted of 87% carbohydrate, 9% casein, 3% gelatin and 3% corn oil. Weight gain over a 4-week period with niacin supplementation was the same with either dextrin, starch or glucose as carbohydrate source, without niacin supplementation, growth rate decreased about 40% for starch and dextrin as the carbohydrate source, as compared to 60% decrease with glucose as the carbohydrate source, suggesting a lesser niacin requirement with starch and dextrin as carbohydrate source (Hundley, 1949).

Long-term studies

Groups of 9 male Sprague-Dawley rats (2 months of age) were fed diets with different sources of carbohydrate for a 20-month period. Diets consisted of rat chow mixed with 20%, by weight, of the various carbohydrate sources, including dextrin, sucrose, and dextrose. Rats

received approximately 10 g experimental carbohydrate/kg bw. Protein efficiency ratios calculated after 6 months feeding were nearly equal for the dextrin, dextrose and sucrose diets and significantly higher than for the basal rat chow diet. Weight gain after 20 months of feeding was about 5% less for dextrin than for dextrose or sucrose but about 5% more than on the basal rat chow (Cohen et al., 1967).

Comments

These substances are regarded as identical to the intermediates formed in the normal digestion of starch and normal constituents of food.

EVALUATION

Estimate of acceptable daily intake for man

Not specified.*

* The statement "ADI not specified" means that, on the basis of the available data (toxicological, biochemical, and other), the total daily intake of the substance, arising from its use or uses at the levels necessary to achieve the desired effect and from its acceptable background in food, does not, in the opinion of the Committee, represent a hazard to health. For this reason, and for the reasons stated in individual evaluations, the establishment of an acceptable daily intake (ADI) in mg/kg bw is not deemed necessary.

REFERENCES

Booher, L. E., Behan, I. & McMeans, E. (1951) Biological utilization of unmodified and modified food starches, J. Nutr., 45, 75-95

Cohen, L., Perkin, E. G. & Dobrilovic, L. (1967) The manifold effects of different dietary carbohydrates, Progr. Biochem. Pharmacol., 2, 182-202

Fournier, P. (1959) Le caramel et la dextrine préparés par action de la chaleur sèche sur le glucose et l'amidon possèdent les qualités physiologiques des composés de structure, C. R. Acad. Sci., 248, 3744-3746

Frank, D. W., Gray, J. E. & Weaver, R. N. (1976) Cyclodextrin nephrosis in the rat, Am. J. Pathol., 83(2), 367-382

Guerrant, N. B., Dutcher, R. A. & Tomey, L. F. (1935) The effect of the type of carbohydrate on the synthesis of B vitamins in the digestive tract of the rat, J. Biol. Chem., 110, 223-243

Harper, A. E. et al. (1953) Influence of various carbohydrates on the utilization of low protein rations by the white rat, J. Nutr., 51, 523-537

Hundley, J. M. (1949) Influence of fructose and other carbohydrates on the niacin requirement of the rat, J. Biol. Chem., 181, 1-9

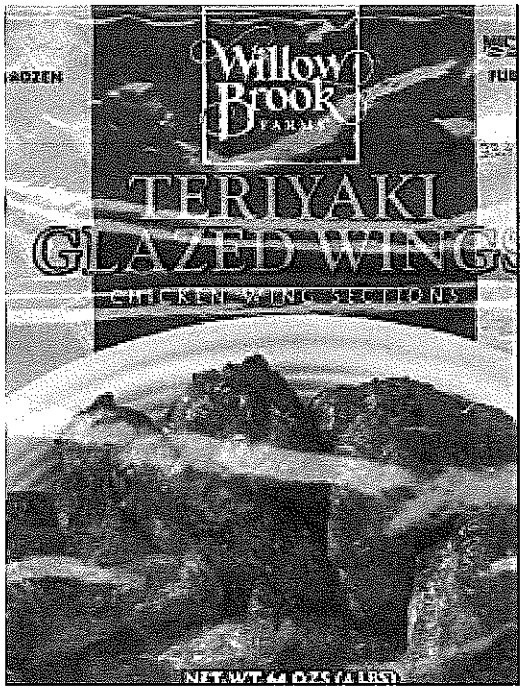
Reussner, G., Jr, Andros, J. & Thiessen, R., Jr (1963) Studies on the utilization of various starches and sugars in the rat, J. Nutr., 80, 291-298

Szejtli, J., Gerl'oczy, A. & F'Onagy, A. (1980) Intestinal absorption of the ^{14}C-labelled beta-cyclodextrin in rats, Arzneim., 30(5), 808-810

See Also:
Toxicological Abbreviations

Teriyaki Glazed Wings

Record ID:	10066276
Company:	Willow Brook Foods
Brand:	Willow Brook Farms
Category:	Processed Fish, Meat & Egg Products
Sub-Category:	Poultry Products
Country:	USA
Date Published:	21 Apr 2000
Launch Type:	New Variety/Range Extension
Price in local currency:	
Price in Euros:	



Product Description

These chicken wing sections are sold frozen in 64-oz. bags in supermarkets.

Product Analysis

Package Type:	Flexible
Package Material:	Plastic
Pack Size:	64.00 oz
New Product Count:	1
Storage:	Frozen
Bar Code:	0024593854499
Private Label:	No
Distribution (US records only):	National
Distribution Type (US records only):	Supermarket

Ingredients & Nutrition

Ingredients: Chicken wing sections, water, sugar, soy sauce (fermented soybeans, wheat, salt), dextrin, sodium phosphates, salt, spice extractives, glazed with: soy sauce (water, wheat, soybeans, sea salt), sugar, water, sake (rice, rice koji, water, salt), partially hydrogenated soybean oil, molasses, modified food starch, brown sugar, cellulose gum, caramel color, salt, spices, garlic powder).

Nutrition: Serving size 3 oz., servings per container about 13, calories 170, calories from fat 90, total fat 11g, saturated fat 3g, cholesterol 50mg, sodium 760mg, total carbohydrate 7g, dietary fiber 0g, sugars 5g, protein 12g, vitamin A 2%, vitamin C 0%, calcium 0%, and iron 4%.

Candy Bar Factory Candy Bars

Record ID:	10066182
Company:	Hershey Chocolate USA
Brand:	Hershey's
Category:	Confectionery
Sub-Category:	Chocolate Confectionery
Country:	USA
Date Published:	18 Apr 2000
Launch Type:	New Product
Price in local currency:	$2.00
Price in Euros:	€1.91

Product Description

Building, literally, on the trend of interactive, kid-friendly candies and chocolates, Hershey encourages kids to play with their food in the form of its new Candy Bar Factory Candy Bars. Kits include 1 specially designed Hershey's candy bar with 4 ready-to-fill sections, plus Reese's peanut butter filling, colored sprinkles, chocolate cookie bits, and white frosting. Kids can mix the ingredients to create their own personal candy bar. The 3-oz. bars will hit stores nationwide in late May with a suggested retail of $2. A kid-friendly website, www.candybarfactory.com, will complete the launch.

Product Analysis

Package Type:	Box
Package Material:	Board
Pack Size:	3.00 oz
New Product Count:	1
Storage:	Shelf stable
Bar Code:	0034000341009
Private Label:	No
Distribution (US records only):	National

Product Variants

Product Variant	Flavours	Positioning Claims
—	—	Novel, Children (5-12), Innovative Package

Ingredients & Nutrition

Ingredients: Milk chocolate: milk chocolate (milk chocolate contains sugar, milk, cocoa butter, chocolate, soya lecithin, an emulsifier, and vanillin, an artificial flavoring), reese's peanut butter filling: peanuts, sugar, hydrogenated vegetable oil (contains rapeseed, cottonseed, and soybean oils), peanut oil, salt, molasses, monoglycerides, and cornstarch, white frosting: sugar, partially hydrogenated soybean and cottonseed oils, water, high maltose corn syrup, wheat starch, contains 2% or less of: salt, distilled monoglycerides, artificial colorings (includes yellow 5 and yellow 6), polysorbate, artificial flavoring, nonfat milk, citric acid, and potassium sorbate, a preservative; chocolate cookie

bits: enriched flour (contains wheat flour, niacin, reduced iron, thiamin mononitrate, riboflavin, and folic acid, sugar, vegetable oil (contains partially hydrogenated soybean and/o cottonseed oil), cocoa processed with alkali, whey, chocolate, high fructose corn syrup, corn flour, sodium bicarbonate, salt, soya lecithin, and artificial and natural flavoring; sprinkles: sugar, cornstarch, partially hydrogenated vegetable oil (contains soybean and cottonseed oils), cocoa processed with alkali, dextrin, soya lecithin, confectionery glaze, artificial coloring (includes red 40 lake, yellow 6 lake, blue 1 lake, and yellow 5 lake, natural and artificial flavoring, and carnauba wax

Nutrition: Serving size 1 package (85g), servings per container 1, calories 440, calories from fat 220, total fat 24g, saturated fat 9g, cholesterol 10mg, sodium 160mg, total carbohydrate 47g, dietary fiber 3g, sugars 36, protein 8g, vitamin A 0%, vitamin C 0%, calcium 8%, iron 8%

Family Classics Enchilada Relaunch

Record ID:	10066380
Company:	Ruiz Food Products
Brand:	El Monterey
Category:	Meals & Meal Centers
Sub-Category:	Meal Centers, Pizza & Pies
Country:	USA
Date Published:	18 Apr 2000
Launch Type:	Relaunch
Price in local currency:	$6.99
Price in Euros:	

(Sorry, image for this product is currently unavailable)

Product Description

The company is relaunching the family size, 8-serving, 2.25-lb. boxes of Enchiladas in Beef, Cheese, and Chicken flavors. The suggested retail price for the product is $5.99 to $6.99 in supermarkets throughout the Western United States.

Product Analysis

Package Type:	Box
Package Material:	Board
Pack Size:	2.25 lb
New Product Count:	
Storage:	Frozen
Bar Code:	0071007301513
Private Label:	No
Distribution (US records only):	Regional
Distribution Type (US records only):	Supermarket

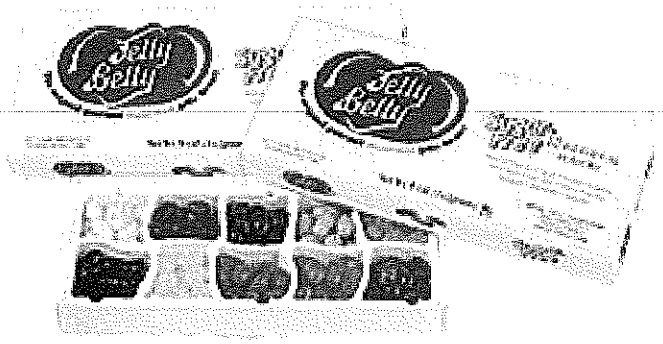
Ingredients & Nutrition

Ingredients: Beef Enchiladas: corn tortilla (corn masa (ground yellow corn, guar gum, cellulose gum, mono and diglycerides, trace of lime), water, modified corn starch, high amylose corn starch with dextrin), filling (water, shredded beef (cooked beef, beef broth, salt), onion, ground beef, bleached wheat flour enriched (niacin, reduced iron, thiamine mononitrate, riboflavin, folic acid), textured vegetable protein (soy flour, caramel color), lard (lard, BHT, citric acid), rendered bacon fat (bacon cured with water, salt sodium phosphate, sodium nitrate, smoke flavoring), may contain (sugar, sodium erythorbate, brown sugar, sodium ascorbate, potassium chloride, dextrose), ground chili pepper, salt, spice garlic powder), enchilada sauce (water, tomato paste (tomatoes), modified corn starch, red chili paste (red chili pepper, garlic powder, onion, spice), garnish (natural cheese (cheddar (pasteurized milk, salt, enzymes), bell peppers, olives)

Nutrition: Serving size 1 Enchilada (113g), servings per container 6, calories 150, calories from fat 60, total fat 7g, saturated fat 2.5g, cholesterol 15mg, sodium 450mg, total carbohydrate 16g, dietary fiber 2g, sugars 2g, protein 6g, vitamin A 20%, calcium 8%, vitamin C 10%, iron 6%

Jelly Bean Extensions

Record ID: 10065614
Company: Jelly Belly Candy
Brand: Jelly Belly
Category: Confectionery
Sub-Category: Sugar Confectionery
Country: USA
Date Published: 22 Mar 2000
Launch Type: New Product
Price in local currency:
Price in Euros:



Product Description

The company now offers sugar-free jelly beans in 10 flavors: Juicy Pear, Sizzling Cinnamon, Buttered Popcorn, Licorice, Cherry, Lemon, Tangerine, Green Apple, Strawberry, and Pineapple. Available nationally in boxes and in 3.5-oz. bags.

Product Analysis

Package Type: Box
Package Material: Board
Pack Size:
New Product Count: 10
Storage: Shelf stable
Bar Code: 0071567957847
Private Label: No
Distribution (US records only): National
Distribution Type (US records only): Gourmet store

Product Variants

Product Variant	Flavours	Positioning Claims
Juicy Pear	—	Low/No/Reduced Sugar
Sizzling Cinnamon	—	Low/No/Reduced Sugar
Buttered Popcorn	—	Low/No/Reduced Sugar
Licorice	—	Low/No/Reduced Sugar
Cherry	—	Low/No/Reduced Sugar
Lemon	—	Low/No/Reduced Sugar
Tangerine	—	Low/No/Reduced Sugar
Green Apple	—	Low/No/Reduced Sugar
Strawberry	—	Low/No/Reduced Sugar
Pineapple	—	Low/No/Reduced Sugar

Ingredients & Nutrition

Ingredients: Maltitol syrup, lactitol, modified food starch, hydrogenated starch hydrolysate, contains 2% or less of the following: citric acid, natural and artificial flavors, aspartame, acesulfame k, color added (yellow #6, blue #2, yellow #5, red 40, blue #1), tapioca dextrin, beeswax, carnauba wax, and confectioner's glaze.

Nutrition: Serving size 37 pieces, servings per box about 3.5, calories 120, total fat 0g, sodium 10mg, total carbohydrate 36g, sugar alcohol 32g, protein 0g, and iron 6%.

Honey Mustard Breast Fillets

Record ID:	10065500
Company:	Tyson Foods
Brand:	Tyson Chicken
Category:	Processed Fish, Meat & Egg Products
Sub-Category:	Poultry Products
Country:	USA
Date Published:	09 Mar 2000
Launch Type:	New Variety/Range Extension
Price in local currency:	$9.99
Price in Euros:	€9.55

Product Description

The company now offers a Honey Mustard variety of Chicken Breast Fillet. They retail in 2.9-lb. packages for $9.99 in supermarkets nationwide.

Product Analysis

Package Type:	Flexible
Package Material:	Plastic
Pack Size:	2.90 lb
New Product Count:	1
Storage:	Chilled
Bar Code:	0023700510280
Private Label:	No
Distribution (US records only):	National
Distribution Type (US records only):	Supermarket

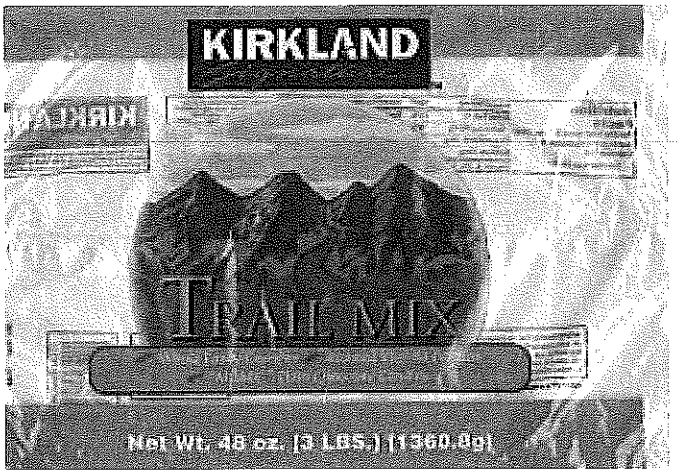
Ingredients & Nutrition

Ingredients: Chicken breast with rib meat, water, seasoning [salt, sugar, honey powder (honey, maltodextrin), maltodextrin, autolyzed yeast extract, flavoring (polysorbate 80, propylene glycol, spice extractive, and dimethyl polysiloxane), flavoring (polysorbate 80, spice extractive), disodium inosinate, disodium guanylate], and sodium phosphates. Coated with: water, dijon mustard (distilled vinegar and water, mustard seed, salt, white wine, citric acid, tartaric acid, spices), sugar, high fructose corn syrup, vinegar, honey, molasses, salt, fructose, tomato paste, modified corn starch, mustard seed, poppy seed, soy sauce powder [soy sauce (fermented soybeans, wheat, salt), dextrin], sodium benzoate, dehydrated garlic, spices, dehydrated onion, xanthan gum, chili pepper, tumeric, and caramel color.

Nutrition: Serving size 1 piece, servings per container about 15, calories 130, calories from fat 45, total fat 5g, saturated fat 1.5g, cholesterol 45mg, sodium 520mg, total carbohydrate 3g, dietary fiber 0g, sugars 3g, and protein 17g.

Trail Mix

Record ID:	10065362
Company:	CWC
Brand:	Kirkland Signature
Category:	Snacks
Sub-Category:	Snack Mixes
Country:	USA
Date Published:	08 Mar 2000
Launch Type:	New Variety/Range Extension
Price in local currency:	$6.69
Price in Euros:	€6.40



Product Description

Costco is selling under its Kirkland private label brand Trail Mix that contains whole fancy cashews, roasted Virginia peanuts, and M&Ms plain chocolate candies. It is sold in a 48-oz. plastic bag nationally.

Product Analysis

Package Type:	Flexible
Package Material:	Plastic
Pack Size:	48.00 oz
New Product Count:	1
Storage:	Shelf stable
Bar Code:	0096619348060
Private Label:	Yes
Distribution (US records only):	National
Distribution Type (US records only):	Club stores

Ingredients & Nutrition

Ingredients: Peanuts (roasted in peanut oil) and salt, raisins (coated with partially hydrogenated vegetable oil, cottonseed and soybean), M&M's Plain Chooclate Candies (sugar, chocolate, milk, cocoa butter, lactose, soy lecithin, salt, artificial flavors), sugar, less than 2% cornstarch, corn syrup, gum acacia, coloring (includes red 40, yellow 6, yellow 5, blue 1), dextrin, almonds (roasted in peanut oil, almond oil, or safflower oil) and salt, cashews (roasted in peanut oil), and salt.

Nutrition: Serving size about 3 tbsp., servings per container 48, total fat 7g, saturated fat 2g, cholesterol 0mg, sodium 39mg, total carbohydrate 16g, dietary fiber 2g, sugars 7g, protein 4g, vitamin A 0%, vitamin C 0%, calcium 11%, and iron 3%.

Nerds Gumballs

Record ID:	10065060
Company:	Nestlé USA
Brand:	Wonka
Category:	Confectionery
Sub-Category:	Gum
Country:	USA
Date Published:	03 Mar 2000
Launch Type:	New Product
Price in local currency:	$0.25
Price in Euros:	€0.24

Product Description

These gumballs are hollow and feature Wonka Nerds inside that you can hear when you shake the ball. Assorted flavors will retail in 2-packs featuring the Nerds logo on each ball. Suggested retail in stores nationwide is 25 cents when they hit in April.

Product Analysis

Package Type:	Flexible
Package Material:	
Pack Size:	0.88 oz
New Product Count:	1
Storage:	Shelf stable
Bar Code:	079200223168
Private Label:	No
Distribution (US records only):	National

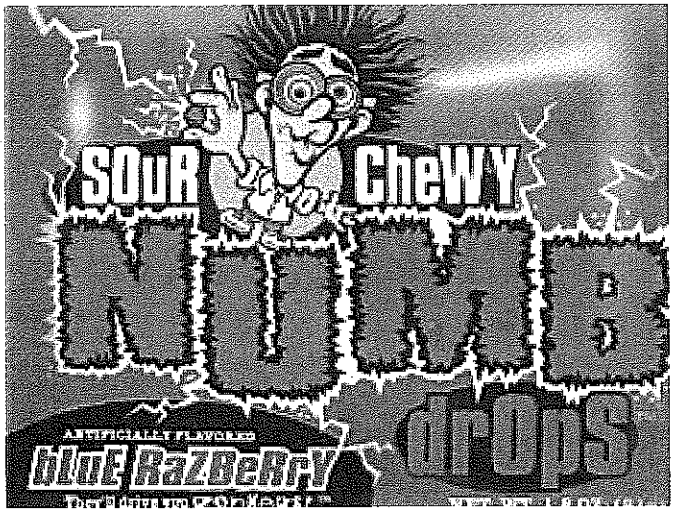
Ingredients & Nutrition

Ingredients: Sugar, dextrose, gum base, corn syrup; less than 2% of artificial and natural flavors, malic acid, confectioner's glaze, glycerin, tapioca dextrin, carnauba wax, BHT (to maintain freshness), color added, blue 1, blue 1 lake, blue 2 lake, carmine color, red 3, red 40, red 40 lake, yellow 5, yellow 5 lake, yellow 6, yellow 6 lake

Nutrition: Not indicated on pack

Sour Chewy Candies

Record ID:	10065124
Company:	Richardson Brands
Brand:	Numb Drops
Category:	Confectionery
Sub-Category:	Sugar Confectionery
Country:	USA
Date Published:	03 Mar 2000
Launch Type:	New Product
Price in local currency:	$0.59
Price in Euros:	€0.56



Product Description

Numb Drops have a sour shell outside and more chewy sour candy inside. Blue Razberry, Sour Watermelon, and Sour Apple flavors retail in 1.8-oz. bags for 59 cents.

Product Analysis

Package Type:	Flexible
Package Material:	Plastic
Pack Size:	1.80 oz
New Product Count:	3
Storage:	Shelf stable
Bar Code:	0086445650024
Private Label:	No
Distribution (US records only):	National

Product Variants

Product Variant	Flavours	Positioning Claims
Blue Razberry	—	—
Sour Watermelon	—	—
Sour Apple	—	—

Ingredients & Nutrition

Ingredients: Blue Razzberry: sugar, corn syrup, dextrose, citric acid, partially hydrogenated palm kernel oil, gum acacia, gelatin, mono- and diglycerides, egg albumen, natural honey, dextrin, artificial flavors, artificial colors (including red 40, blue 1), and confectioner's glaze.

Nutrition: Blue Razzberry: serving size 1 package, calories 200, calories from fat 10, total fat 1g, saturated fat 1g, cholesterol 0mg, sodium 75mg, total carbohydrate 48g, fiber 0g, sugars 38g, and protein less than 1g.

Country Store Soup Mixes

Record ID:	10065207
Company:	Williams Foods
Brand:	Williams
Category:	Soup
Sub-Category:	Dry Soup
Country:	USA
Date Published:	03 Mar 2000
Launch Type:	New Product
Price in local currency:	$3.99
Price in Euros:	€3.82

Product Description

Williams Country Store soup mixes require the addition of water and in some cases, specific ingredients like tomato sauce. They are being positioned as upscale dry soups that taste "...just like you remember." Six varieties are testing in Chicago, Boston, Milwaukee, Dallas, Baltimore, and Denver, including: Potato, Tortilla, Bean, Chicken & Noodle, Minestrone, and Vegetable. A 10.5-oz. bag makes 8 servings and retails for $3.99.

Product Analysis

Package Type:	Flexible
Package Material:	Plastic
Pack Size:	10.50 oz
New Product Count:	6
Storage:	Shelf stable
Bar Code:	0041149120044
Private Label:	No
Distribution (US records only):	Test market
Distribution Type (US records only):	Supermarket

Product Variants

Product Variant	Flavours	Positioning Claims
Potato	—	—
Tortilla	—	—
Bean	—	—
Chicken & Noodle	—	—
Minestrone	—	—
Vegetable	—	—

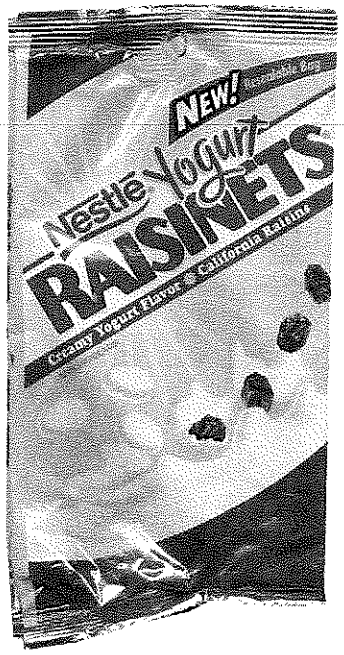
Ingredients & Nutrition

Ingredients: Bean: dehydrated navy and pinto beans, dehydrated vegetables (potatoes, onion, carrot, celery, garlic), modified corn starch, creamer (partially hydrogenated soybean oil, corn syrup solids, sodium caseinate, mono and diglycerides, dipotassium phosphate, lecithin), salt, hydrolyzed soy protein (disodium guanylate, sugar, malic acid), dextrose, maltodextrin, autolyzed yeast extract, natural and artificial flavors (fermented soy sauce, dextrin), chicken broth, guar gum, lactic acid, torula yeast, spices, caramel color, and disodium inosinate.

Nutrition: Bean: serving size 1/4 cup, servings per container about 8, calories 130, calories from fat 15, total fat 2g, saturated fat 0g, cholesterol 0mg, sodium 930mg, total carbohydrate 22g, dietary fiber 7g, sugars 1g, protein 6g, vitamin A 30%, vitamin C 2%, calcium 0%, and iron 8%.

Yogurt Raisinets

Record ID:	10065228
Company:	Nestlé USA
Brand:	Nestle
Category:	Confectionery
Sub-Category:	Chocolate Confectionery
Country:	USA
Date Published:	03 Mar 2000
Launch Type:	New Variety/Range Extension
Price in local currency:	$1.39
Price in Euros:	€1.33



Product Description

The company's classic Raisinets have always been covered in Nestle milk chocolate. Now a yogurt-covered version is also available. Both retail in 12.5-oz. stand-up bags in mass retailers nationwide. They will retail for $1.39.

Product Analysis

Package Type:	Flexible
Package Material:	Plastic
Pack Size:	12.50 oz
New Product Count:	1
Storage:	Shelf stable
Bar Code:	028000123772
Private Label:	No
Distribution (US records only):	National

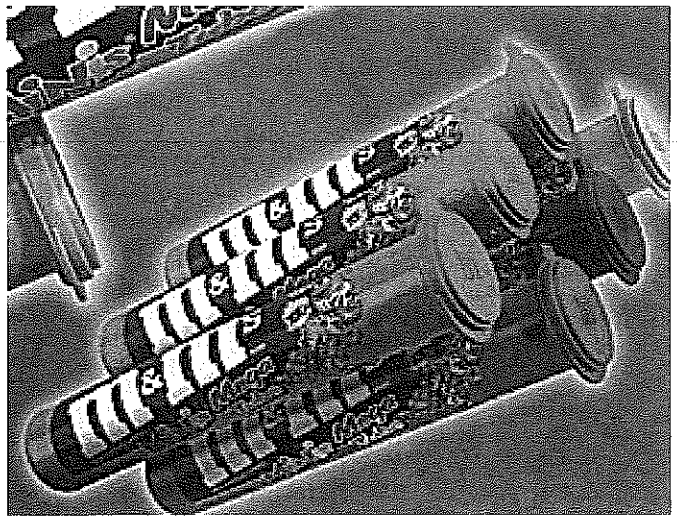
Ingredients & Nutrition

Ingredients: Sugar, raisins, palm kernel oil, nonfat milk, partially hydrogenated coconut oil, milkfat, soy lecithin, tapioca dextrin, hydrogenated palm oil, natural and artificial flavors, confectioner's glaze, peanut traces

Nutrition: Serving size 1/4 cup (45g), servings per container about 8, calories 210, calories from fat 90, total fat 10g, saturated fat 9g, cholesterol <5mg, sodium 30mg, total carbohydrate 29g, dietary fiber <1g, sugars 27g, protein 2g, vitamin A 0%, vitamin C 0%, calcium 6%, iron 0%

MINIs Mega Tubes

Record ID:	10064983
Company:	Masterfoods USA
Brand:	M&M's
Category:	Confectionery
Sub-Category:	Chocolate Confectionery
Country:	USA
Date Published:	02 Mar 2000
Launch Type:	New Packaging
Price in local currency:	
Price in Euros:	



Product Description

Now M&M's MINIs tiny chocolate candies come in 1.94-oz. Mega Tubes in 6 "collectable colors," 80% more than the original size. They hit stores nationwide in May.

Product Analysis

Package Type:	Tube
Package Material:	Plastic
Pack Size:	1.94 oz
New Product Count:	
Storage:	Shelf stable
Bar Code:	0040000004370
Private Label:	No
Distribution (US records only):	National

Ingredients & Nutrition

Ingredients: Milk chocolate, (sugar, chocolate cocoa butter, skim milk, milk fat, lactose, soy lecithin, salt, artificial flavor), sugar, less than 2%--cornstarch, corn syrup, coloring (includes yellow 5 lake, red 40 lake, blue 1 lake, yellow 6 lake, blue 2 lake, blue 1, blue 2, red 40, yellow 5, yellow 6), dextrin; may contain peanuts

Nutrition: Serving size 1 tube, calories 270, fat cal 120, total fat 13g (20%DV), sat fat 8g (40%DV), cholest 10mg (3%DV), sodium 35mg (1%DV), total carb 37g (12%DV), fiber 2g (8%DV), sugars 34g, protein 3g, vitamin A (2%DV) vitamin C (0%DV), calcium (6%DV), iron (2%DV)

Sour Flavor Extension

Record ID:	10064995
Company:	Masterfoods USA
Brand:	Skittles
Category:	Confectionery
Sub-Category:	Sugar Confectionery
Country:	USA
Date Published:	02 Mar 2000
Launch Type:	New Variety/Range Extension
Price in local currency:	
Price in Euros:	

Product Description

The company hopes to grab its fair share of the sour candy market by tweaking an original. Sour Skittles are "intense sour outside, real Skittles inside." Bags will hit mass retailers nationwide in May.

Product Analysis

Package Type:	Flexible
Package Material:	
Pack Size:	1.80 oz
New Product Count:	1
Storage:	Shelf stable
Bar Code:	04026606
Private Label:	No
Distribution (US records only):	National

Ingredients & Nutrition

Ingredients: Sugar, corn syrup, partially hydrogenated soybean oil, citric acid, fruit juice from concentrate (grape, strawberry, lemon lime, orange), less than 1%: dextrin, natural and artificial flavors, gelatin, food starch-modified, coloring (includes yellow 6 lake, red 40 lake, yellow 5 lake, blue 2 lake, blue 1 lake, yellow 5, red 40, yellow 6, blue 1), and ascorbic acid.

Nutrition: Serving size 1 pack, calories 200, fat calories 20, total fat 2g, saturated fat 0g, cholesterol 0mg, sodium 5mg, total carbohydrate 44g, dietary fiber 0g, sugars 37g, protein 0g, vitamin A 0%, vitamin C 0%, calcium 0%, and iron 0%.

National Starch
FOOD INNOVATION

*** MATERIAL SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER:	52-2655
PRODUCT NAME:	CRYSTAL TEX 627
COMPANY ADDRESS	National Starch Food Innovation National Starch LLC P.O. Box 6500, 10 Finderne Avenue Bridgewater, NJ 08807 USA
	EMERGENCY PHONES: MEDICAL: 866-374-2659 (Health & Safety Call Center-24 hours) TRANSPORT: CHEMTREC: 800-424-9300 (24 hours) CHEMTREC International: 703-527-3887 (call collect) Corporate Emergency Phone: 908-685-5100 (24 hours)
	MSDS Requests/Customer Service: See phone numbers in Section 16

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Possible physical irritant from dust particles. Potential for dust explosion.
White Powder. Starch Odor

EYE	Particulates may scratch eye surfaces and cause mechanical irritation.
SKIN CONTACT	Low order of toxicity.
INHALATION	This product can produce a nuisance dust which should be maintained below a time weighted average of 10 mg/m3.
INGESTION	Low oral toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY Dextrin

COMPONENT	CAS NUMBER	CONCENTRATION (% by weight)
None classified as hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).		

4. FIRST-AID MEASURES

EYE	Remove particles by irrigating with eye wash solution or clean water, holding the eyelids apart. If symptoms develop, obtain medical attention.
SKIN CONTACT	Wash skin with soap and water.
INHALATION	Remove to fresh air. Get medical attention if irritation persists.
INGESTION	None required.

5. FIREFIGHTING MEASURES

AUTOIGNITION	Not available
FLASH POINT	Not applicable
EXTINGUISHING MEDIA	Dry Chemical; CO2; Water Fog; Foam
SPECIAL FIREFIGHTING PROCEDURES	No special procedures are required.
FIRE & EXPLOSION HAZARDS	Minimum ignition temperature of dust cloud- approx. 390 C. Minimum explosive concentration- approx. 62 mg/l. Minimum energy to ignite cloud by electrical spark- approx. 0.045 joules.
HAZARDOUS COMBUSTION PRODUCTS	This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.
LOWER EXPLOSION LIMIT (%)	Not applicable
UPPER EXPLOSION LIMIT (%)	Not applicable

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES	Normal precautions for "nuisance dust" should be observed. Avoid prolonged inhalation of dust. Sweep up or vacuum up and place in suitable container for disposal.

For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE	Ambient.
SENSITIVITY TO STATIC ELECTRICITY	Yes
SENSITIVITY TO MECHANICAL IMPACT	No
OTHER PRECAUTIONS	Use care to minimize dust generation in normal use conditions. Avoid dispersing the powder in the air. Prevent buildup of powder on surfaces.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION REQUIREMENTS	General.
EYE PROTECTION REQUIREMENTS	Safety glasses recommended.
GLOVE REQUIREMENTS	Gloves are not normally required for forseeable conditions of use.

CLOTHING REQUIREMENTS	Not applicable.
CHANGE/REMOVAL OF CLOTHING	Not normally required.
WASH REQUIREMENTS	Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS	NIOSH approved dust mask.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE	Pure
PHYSICAL FORM	Powder.
COLOR	White
ODOR	Starch
ODOR THRESHOLD	Not available
MOLECULAR WEIGHT	> 10000
pH IN (1%) SOLUTION	Approximately 4
OXIDIZING PROPERTIES	Not applicable
SOLUBILITY IN WATER	Soluble
PARTITION COEFFICIENT (n-octanol/water)	Not applicable
VISCOSITY	Not applicable
SPECIFIC GRAVITY (WATER=1)	1.5
EVAPORATION RATE	Not applicable
VAPOR PRESSURE (mmHg)	Not applicable
VAPOR DENSITY (air = 1)	Not applicable
VOLATILES	None
VOLATILE ORGANIC COMPOUNDS	Not applicable
AUTOIGNITION	Not available
FLASH POINT	Not applicable

10. STABILITY AND REACTIVITY

STABILITY	Stable
HAZARDOUS DECOMPOSITION PRODUCTS	This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.

11. TOXICOLOGICAL INFORMATION

ROUTE OF ENTRY: Eye Contact; Skin Contact; Inhalation; Ingestion

CARCINOGEN	IARC (group)	NTP	OSHA Substance Specific Regulation
COMPONENT			
There is no evidence that this product poses a carcinogenic risk under normal conditions of handling and use.			

PRODUCT TOXICOLOGY

ACUTE (SHORT TERM) EFFECTS OF EXPOSURE

EFFECTS OF ACUTE EXPOSURE	Unlikely to cause harmful effects under recommended conditions of handling and use.

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

EFFECTS OF CHRONIC EXPOSURE	This product is considered as being non-toxic. Use of good industrial hygiene practices is recommended.
TARGET ORGANS	Not applicable.

12. ECOLOGICAL INFORMATION

POTENTIAL TO BIOACCUMULATE	Unknown.
AQUATIC TOXICITY	None Established

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS	Disposal should be in accordance with local, state or national legislation.
EMPTY CONTAINER WARNINGS	Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

14. TRANSPORTATION INFORMATION

This section provided for general information only. The shipping description below may not represent requirements for all modes of transportation, packaging, shipping methods or locations outside of the United States.

FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

DOT CLASSIFICATION Not regulated

The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.

15. REGULATORY INFORMATION

USA

TSCA	This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.
FDA	21CFR184.1277

SARA - Section 313 (Superfund Amendments and Reauthorization Act of 1986 - 40CFR 372)

	CAS NUMBER	CONCENTRATION (% by weight)

Contains no substances at or above the reporting threshold under Section 313.

CALIFORNIA PROPOSITION 65

WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

Unless a concentration is specified in Section 2 of the MSDS, the below chemical/s are present in trace amounts.

COMPONENT	CAS NUMBER
None reportable.	

16. OTHER INFORMATION

HMIS® Hazard Ratings

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs by OSHA's 29 CFR 1910.1200, we choose to provide them as a service to our customers using HMIS®. These ratings are to be used only with a fully implemented HMIS® program. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

NPCA recommends that employers must determine appropriate PPE for the actual conditions under which this product is used in their workplace. For information on PPE codes, consult the HMIS® Implementation Manual.

When two ratings are provided for Health, the first represents the material 'as supplied', and the second represents the material 'in use'.

* = chronic health hazard

HMIS® is a registered trademark of the National Paint and Coatings Association (NPCA).

Health	Flammability	Reactivity
1	1	0

MSDS DATE 21-September-2009

FOR INFORMATION CONTACT: For product information, contact:
National Starch LLC
National Starch Food Innovation
Customer Service: 1-800-859-8569
Technical Service Support: 1-800-743-6343

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.

National Starch
FOOD INNOVATION

ROQUETTE

*** MATERIAL SAFETY DATA SHEET ***

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER:	48-3085
PRODUCT NAME:	NUTRIOSE® FM06 dextrin
COMPANY ADDRESS	ROQUETTE 62080 Lestrem Cedex France
SUPPLIER	National Starch Food Innovation National Starch LLC P.O. Box 6500, 10 Finderne Avenue Bridgewater, NJ 08807 USA EMERGENCY PHONES: MEDICAL: 866-359-5657 (Health & Safety Call Center-24 hours) TRANSPORT: CHEMTREC: 800-424-9300 (24 hours) CHEMTREC International: 703-527-3887 (call collect) Corporate Emergency Phone: 908-685-5100 (24 hours) MSDS Requests/Customer Service: See phone numbers in Section 16

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Possible physical irritant from dust particles. Potential for dust explosion.
Off-white Powder. Negligible Odor

EYE	Particulates may scratch eye surfaces and cause mechanical irritation.
SKIN CONTACT	Low order of toxicity.
INHALATION	This product can produce a nuisance dust which should be maintained below a time weighted average of 10 mg/m3.
INGESTION	Low oral toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL FAMILY Dextrin

COMPONENT	CAS NUMBER	CONCENTRATION (% by weight)
None classified as hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).		

4. FIRST-AID MEASURES

EYE	Remove particles by irrigating with eye wash solution or clean water, holding the eyelids apart.
SKIN CONTACT	Wash skin with soap and water.
INHALATION	Remove to fresh air. Get medical attention if irritation persists.
INGESTION	None required.

5. FIREFIGHTING MEASURES

AUTOIGNITION	Not available
FLASH POINT	Not applicable
EXTINGUISHING MEDIA	Dry Chemical; CO2; Water Fog; Foam
SPECIAL FIREFIGHTING PROCEDURES	No special procedures are required.
FIRE & EXPLOSION HAZARDS	Minimum ignition temperature of dust cloud- approx. 390 C. Minimum explosive concentration- approx. 62 mg/l. Minimum energy to ignite cloud by electrical spark- approx. 0.045 joules.
HAZARDOUS COMBUSTION PRODUCTS	This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.
LOWER EXPLOSION LIMIT (%)	Not applicable
UPPER EXPLOSION LIMIT (%)	Not applicable

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES	Normal precautions for "nuisance dust" should be observed. Avoid prolonged inhalation of dust. Sweep up or vacuum up and place in suitable container for disposal.

For safety and environmental precautions, please review entire Material Safety Data Sheet for necessary information.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE	Ambient.
SENSITIVITY TO STATIC ELECTRICITY	Yes
SENSITIVITY TO MECHANICAL IMPACT	No
OTHER PRECAUTIONS	Use care to minimize dust generation in normal use conditions. Avoid dispersing the powder in the air. Prevent

buildup of powder on surfaces.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION REQUIREMENTS	General.
EYE PROTECTION REQUIREMENTS	Chemical safety glasses.
GLOVE REQUIREMENTS	Gloves are not normally required for forseeable conditions of use.
CLOTHING REQUIREMENTS	Not applicable.
CHANGE/REMOVAL OF CLOTHING	Not normally required.
WASH REQUIREMENTS	Wash before eating, drinking, or using toilet facilities.
RESPIRATOR REQUIREMENTS	NIOSH approved dust mask.

9. PHYSICAL AND CHEMICAL PROPERTIES

PURE SUBSTANCE OR MIXTURE	Pure
PHYSICAL FORM	Powder.
COLOR	Off-white
ODOR	Negligible
ODOR THRESHOLD	Not available
MOLECULAR WEIGHT	> 10000
pH IN (1%) SOLUTION	Approximately 5
OXIDIZING PROPERTIES	Not applicable
SOLUBILITY IN WATER	Soluble
PARTITION COEFFICIENT (n-octanol/water)	Not applicable
VISCOSITY	Not applicable
SPECIFIC GRAVITY (WATER=1)	1.5
EVAPORATION RATE	Not applicable
VAPOR PRESSURE (mmHg)	Not applicable
VAPOR DENSITY (air = 1)	Not applicable
VOLATILES	None
VOLATILE ORGANIC COMPOUNDS	Not applicable
AUTOIGNITION	Not available
FLASH POINT	Not applicable

10. STABILITY AND REACTIVITY

STABILITY	Stable
HAZARDOUS DECOMPOSITION PRODUCTS	This product does not undergo spontaneous decomposition. Typical combustion products are carbon monoxide, carbon dioxide, nitrogen and water.

11. TOXICOLOGICAL INFORMATION

ROUTE OF ENTRY Eye Contact; Skin Contact; Inhalation; Ingestion

CARCINOGEN	IARC (group)	NTP	OSHA Substance Specific Regulation

COMPONENT
There is no evidence that this product poses a carcinogenic risk under normal conditions of handling and use.

PRODUCT TOXICOLOGY

ACUTE (SHORT TERM) EFFECTS OF EXPOSURE

EFFECTS OF ACUTE EXPOSURE	Unlikely to cause harmful effects under recommended conditions of handling and use.

CHRONIC (LONG TERM) EFFECTS OF EXPOSURE

EFFECTS OF CHRONIC EXPOSURE	This product is considered as being non-toxic. Use of good industrial hygiene practices is recommended.
TARGET ORGANS	Not applicable.

12. ECOLOGICAL INFORMATION

POTENTIAL TO BIOACCUMULATE	Unknown.
AQUATIC TOXICITY	None Established

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS	Disposal should be in accordance with local, state or national legislation.
EMPTY CONTAINER WARNINGS	Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied.

14. TRANSPORTATION INFORMATION

This section provided for general information only. The shipping description below may not represent requirements for all modes of transportation, packaging, shipping methods or locations outside of the United States.

FOR MORE COMPLETE TRANSPORTATION REGULATORY INFORMATION PLEASE REFER TO THE SHIPPING DOCUMENTS ACCOMPANYING THE SHIPMENT OF THIS PRODUCT.

DOT CLASSIFICATION Not regulated

The information provided herein may not include the impact of additional regulatory requirements (eg, for materials meeting the definition of a hazardous waste under RCRA, hazardous substances under CERCLA, and/of marine pollutants under CWA or other similar federal, state or local laws) or any associated exceptions or exemptions under regulations applicable to the transport of this material.

15. REGULATORY INFORMATION

USA

TSCA	This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.
FDA	21CFR 170.30

SARA - Section 313 (Superfund Amendments and Reauthorization Act of 1986 - 40CFR 372)

	CAS NUMBER	CONCENTRATION (% by weight)
Contains no substances at or above the reporting threshold under Section 313.		

CALIFORNIA PROPOSITION 65

WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

Unless a concentration is specified in Section 2 of the MSDS, the below chemical/s are present in trace amounts.

COMPONENT	CAS NUMBER
None reportable.	

16. OTHER INFORMATION

HMIS® Hazard Ratings

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs by OSHA's 29 CFR 1910.1200, we choose to provide them as a service to our customers using HMIS®. These ratings are to be used only with a fully implemented HMIS® program. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

NPCA recommends that employers must determine appropriate PPE for the actual conditions under which this product is used in their workplace. For information on PPE codes, consult the HMIS® Implementation Manual.

When two ratings are provided for Health, the first represents the material 'as supplied', and the second represents the material 'in use'.

* = chronic health hazard

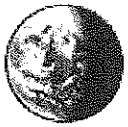
HMIS® is a registered trademark of the National Paint and Coatings Association (NPCA).

Health	Flammability	Reactivity
1	1	0

MSDS DATE	11-September-2009
FOR INFORMATION CONTACT:	For product information, contact: National Starch LLC National Starch Food Innovation Customer Service: 1-800-859-8569

Technical Service Support: 1-800-743-6343

ADDITIONAL INFORMATION: The information given and the recommendations made herein apply to our product(s) alone and are not combined with other product(s). Such are based on our research and on data from other reliable sources and are believed to be accurate. No guaranty of accuracy is made. It is the purchaser's responsibility before using any product to verify this data under their own operating conditions and to determine whether the product is suitable for their purposes.



nerac@nerac.com
12/19/2006 04:36 PM

To scott.grare@nstarch.com;
cc
bcc Scott Grare/US/NSC/ICI
Subject Profile\Topic information

Scott,
These are the databases and the strategy used for dextrin toxicity.

Andy Rice
For: AJR (12-19-06)
PROFILE# 1332941 Contact# 000142.00 AJR Date: 12-19-2006

Profile Title: TOPICS

Profile Recipients: Mr. Scott Grare
Sr. Regulatory Co-Ordinator
National Starch & Chemical
10 Finderne Avenue
Bridgewater, NJ 08807

Topic Title: COST CENTER 513080101 DEXTRIN TOXICITY

Topic 006 AJR Date: 12-19-2006

Strategy 01 AJR Date: 12-19-2006 Hit Limit: 025 Copies: 001

Data Base(s): GEO, EMB, CSN, FDR, APN, WRA, USG, OCA, SGL, PAB
CBN, AAN, CPI, EDB, CON, IPA, LSC, DIS, AGR, STD
FST, CAB, PSY, TOL, MED, BIO, CCR, MOS, NPU, USF

	T	F	TERM
001	04	01	CALOREEN\TD
002	03	01	DEXTRIN\TD
003	02	01	DEXTRINE\TD
004	01	98	9004-53-9\RF\RN
005	06	01	FOOD$\TD
006	05	01	FEED$\TD
007	04	01	SOIL$\TD
008	03	01	ANIMAL$\TD
009	02	01	LIVESTOCK\TD
010	01	98	CROP$\TD
011	99	01	SAFETY\TD
012	99	01	TOXIC\TD
013	99	01	TOXICITY\TD
014	99	01	HEALTH\TD
015	99	01	PERSISTENCE\TD
016	99	98	ENVIRONMENTAAL IMPACT\TD

arice@nerac.com
12/19/2006 04:43 PM
Please respond to
arice@nerac.com

To Scott Grare/US/NSC/ICI@ICI
cc
bcc
Subject DEXTRIN TOXICITY

nerac
CRITICAL RESEARCH | PATENTS & ALERTS

DEXTRIN TOXICITY
Research Report
Report Number: 09700867-1
View Report Strategies
December 19, 2006
Project Leader: Andrew J. Rice | Read Bio

Report Wrap-up

Dear Scott,

This is in response to your question on dextrin toxicity for USDA Organic filing. I have included all results found. Under separate cover I sent all the databases used and the strategy.

If you have any questions please call or email me.

Regards,

Andy Rice
Analyst, Chemistry
Nerac, Inc.
One Technology Drive
Tolland, CT 06084 USA
p: 1.860.872.7000, ext. 1206
f: 1.860.872.6026
arice@nerac.com
www.nerac.com

List of Titles

1. Fungi associated with rotten blackplum (Vitex doniana) and aflatoxin B-1 production by isolates of Aspergillus flavus.
2. Analysis of parameters related to the effect of seed oil of Hippophae rhamnoides L. on redox substance in subacute senescence-accelerated mice
3. Hippocampal cell proliferation is reduced following prenatal ethanol exposure but can be rescued with voluntary exercise
4. Evaluation of the Health Aspects of Dextrin and Corn Dextrin as Food Ingredients.
5. Scientific Literature Reviews on Generally Recognized as Safe (GRAS) Food Ingredients - Dextrin and Corn Dextrin.
6. Acute toxicity and mutagenicity studies of indigestible dextrin, and its effect on bowel movement of the rat
7. Indirect food additives: Adjuvants, production aids, and sanitizers
8. Use of certain binders in meat and poultry products and transfer of binders in text to the tables of approved substances
9. FOUR ITEMS PROPOSED AS MEAT BINDERS
10. Dextrin. Proposed affirmation of GRAS status as a direct and indirect human food ingredient.
11. Taste and health drive markets.
12. National Starch and Chemical prosecuted for dextrine plant explosion.
13. Toxicities of TNT and cyclodextrin mixtures using bacterial and phytoplanktonic ecotoxicity tests
    MONOGRAPH TITLE
    -Proceedings of the 6. symposium and exhibition on groundwater and soil remediation
14. New drugs of 2003
15. Glucose polymer supplementation of feeds for very low birth weight infants
16. Twenty-Eight-Day Repeated-Dose Oral Toxicity Study of Water-Miscible Coenzyme Q10 Preparation (Q10EP40) in Rats
17. Postprandial glucose and insulin responses to dextrin-containing medical nutritional bars in persons with type 2 diabetes mellitus.
18. Fat replacers and fat mimetics: The development of reduced-fat foods.
19. Substitution of dietary fats - a survey.
20. Alcohol feeding and endotoxin modulate apoptotic effectors in rat pancreas.
21. Effect of indigestible dextrin contained food, food for specified health use, on glucose and lipid metabolism.
22. Short-term memory impairment and reduced hippocampal c-Fos expression in an animal model of fetal alcohol syndrome
23. A new model of fatty liver disease: Interaction of chronic alcohol and

environmental tobacco smoke exposure in the ApoE-/-hypercholesterolemic mouse.

24. A dose-ranging phase I/II study of dextrin sulphate gel as a novel vaginal microbicide: Data from 50 HIV-negative women.
25. INITIAL SUBMISSION: EVALUATION OF DERMAL EFFECTS OF ERIONYL BLACK GD IN HUMANS WITH COVER LETTER DATED 100992
26. INITIAL SUBMISSION: ACUTE EYE IRRITATION/CORROSION STUDY OF CALCOZINE BLACK CSP POWDER IN NEW ZEALAND WHITE RABBITS WITH COVER LETTER DATED 051592
27. Starch-dextrin solution as a novel control method for two spotted mite (Tetranychus urticae) and powdery mildew (Sphaerotheca fuliginea) on cucumber and whitefly (Trialeurodes vaporariorum) on tobacco.
28. Provisional instructions for using Fenadek (micronized niclosamide plus dextrin) against cestodes of sheep.
29. Change in starch degrading enzyme activity during germination of Dongjinbyeo and red rice under humid upland and submerged paddy conditions.
30. Isolation of amylolytic bacteria from soil and water samples and some characteristics of their amylolytic enzymes.

The order of the content within this report was determined manually by an Analyst.

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1.

Fungi associated with rotten blackplum (Vitex doniana) and aflatoxin B-1 production by isolates of Aspergillus flavus.

98-41 98-466914 NDN- 007-0517-6995-3 BIO Thomson Scientific

AUTHORS

-Bankole, S. A.; Eseigbe, D. A.

JOURNAL NAME

-Chemie Mikrobiologie Technologie der Lebensmittel

VOLUME

17

NUMBER

3-4

PUBLICATION DATE

-1995

PP

74-78

ISSN

-0366-7154

AUTHOR AFFILIATION

-Microbiol. Unit, Dep. Biol. Sci., Ogun State Univ., P.M.B. 2002, Ago-Iwoye, Nigeria
LITERARY INDICATOR
-RESEARCH ARTICLE
PRINT PRODUCT NUMBER
-Biological Abstracts Vol. 100 Iss. 009 Ref. 132971
LANGUAGE
-English
Four species of yeasts and eight filamentous fungi, majority of which are known to be potentially mycotoxigenic, were isolated from rotten blackplum (Vitex doniana) fruits collected from fruit trees, depots and waste baskets in Nigeria. Four of the six isolates of Aspergillus flavus were found to be aflatoxigenic in a nutrient medium, producing primarily aflatoxin B-1. The toxigenic A. flavus isolates produced significantly higher mycelia weight and aflatoxin B-1 on juice medium supplemented with different carbon sources (fructose, glucose, sucrose, starch and dextrin) than the unsupplemented juice medium. The supplementation of juice medium with 1-sorbose as carbon source resulted in lower mycelia weight and aflatoxin content compared to the plain juice. All the A. flavus isolates produced aflatoxin B-1 at 15-40 degree C, but 25-30 degree C was found to be optimum. The results suggest that serious health hazard is posed to livestock fed with deteriorating blackplum.

2.
Analysis of parameters related to the effect of seed oil of Hippophae rhamnoides L. on redox substance in subacute senescence-accelerated mice
06-36 2006393607 NDN- 012-2652-9847-6 EMB Elsevier
AUTHORS
-Liu, C.; Xu, J.; Ye, C. -Q.; Huang, C.
JOURNAL NAME
-Chinese Journal of Clinical Rehabilitation
ABBREVIATED JOURNAL TITLE
-CHIN. J. CLIN. REHAB.
CITATION INFORMATION
-10/23 (133-135)
PUBLICATION DATE
-20 JUN 2006
DOCUMENT TYPE
-Journal

ISSN
-1671-5926
PUBLICATION DATE
-2006
CODEN
-ZLKHA
AUTHOR ADDRESS
-C. Huang, Department of Science, Nanjing University, Nanjing 210093 Jiangsu Province
COUNTRY OF AUTHOR
-China
LITERARY INDICATOR
-Article
ASSIGNEE COUNTRY
-020; 030; 037
PUBLICATION COUNTRY
-China
LANGUAGE
-CHINESE
Aim: To quantitively describe the effect of seed oil of Hippophae rhamnoides L. on redox substance of brain in male and female subacute senescence-accelerated mice (SSA-mice). Methods: The experiment was conducted in the animal room of the Pharmaceutical Co., Ltd of Nanjing University from April to November 2004. A total of 128 Kunming mice female and male in half were selected and the 64 male mice were randomly divided into eight groups: 2, 4, 6, 8, 10 and 14 mL/kg seed oil groups, model group and blank control group. The mice in the seed oil groups were intragastricly infused with seed oil and dextrin with a proportion of 1:9,2:8,3:7,4:6,5:5 and 7:3, respectively; the control group was infused with distilled water, and the model group with dextrin with the same dosage of 5 mL/kg, once every two days. Except the control group, the SSA-mice models were made successfully by injected D-galactose once a day. The 64 female mice were treated in the same way as the male mice. 45 days later, the content of malondialdehyde (MDA) and reduced glutathione hormone (GSH) in brain tissues were assessed to set up the does-effect function models. Results: All the 128 mice were involved in the result analysis without drop. 1The content of GSH in brain tissues of the female and male model groups were all obviously lower than the control groups (P < 0.05), and the GSH in the female and male six dosages groups were all higher than the model groups, there were significant difference among the 8, 10 and 14 mL/kg groups and the model groups (P < 0.05). Female and male model groups had higher concentration of MDA compared with the control groups (P < 0.05), except

the 2 mL/kg group, the content of MDA in the 5 dosages groups were lower than the model groups, but there were only significant difference among the 8, 10 and 14 mL/kg groups and the model groups (P < 0.05). 2The best dosage was found by using the does-effect function with the equation y = A<inf>2</inf> + (A<inf>1</inf>-A<inf>2</inf>)/(1 + (x/X<inf>0</inf>)^p. Female mice were less sensitive to drug than male mice. Conclusion: The seed oil of Hippophae rhamnoides L. can obviously inhibit the senescence of mice induced by D-galactose; the higher dosage has more obvious effect in this experiment, and its effect on male mice was superior to that on female ones.

3.

Hippocampal cell proliferation is reduced following prenatal ethanol exposure but can be rescued with voluntary exercise

06-15 2006138919 NDN- 012-2627-8196-1 EMB Elsevier

AUTHORS

-Redila, V. A.; Olson, A. K.; Swann, S. E.; Mohades, G.; Webber, A. J.; Weinberg, J.; Christie, B. R.

JOURNAL NAME

-Hippocampus

ABBREVIATED JOURNAL TITLE

-HIPPOCAMPUS

CITATION INFORMATION

-16/3 (305-311)

DOCUMENT TYPE

-Journal

COPYRIGHT

ISSN

-1050-9631; 1098-1063

PUBLICATION DATE

-2006

CODEN

-HIPPE

EMAIL

-bchristie@psych.ubc.ca

AUTHOR ADDRESS

-Dr. B.R. Christie, Department of Psychology, University of British Columbia, 2136 West Mall, Vancouver, BC V6T 1Z4

COUNTRY OF AUTHOR

-Canada
LITERARY INDICATOR
-Article
ASSIGNEE COUNTRY
-005; 008; 021; 052
PUBLICATION COUNTRY
-United States
LANGUAGE
-ENGLISH
The ingestion of ethanol during pregnancy has a number of deleterious consequences for the unborn offspring, producing structural and functional deficits that affect the brain and many other organs into adulthood. The hippocampus is a brain area that is particularly sensitive to ethanol's adverse effects. In a previous study we showed that voluntary exercise can ameliorate deficits in long-term potentiation and behavior that occur following prenatal ethanol exposure (Eur J Neurosci, 2005, 21, 1719-1726). In the present study, we investigated the effects of prenatal ethanol exposure on neurogenesis in adulthood, and tested the hypothesis that voluntary exercise would ameliorate any deficits observed. Sprague-Dawley females were administered one of three diets throughout gestation: (i) ethanol (E), a liquid diet containing 36.5% ethanol-derived calories; (ii) pair-fed (PF), a liquid control diet, with maltose-dextrin isocalorically substituted for ethanol, in the amount consumed by an E partner (g/kg body wt/day of gestation); and (iii) ad-libitum-fed control (C), normal laboratory chow and water, ad libitum. The offspring were housed individually at postnatal day (PND) 35, and at PND 50 were randomly assigned to cages either with or without an exercise wheel. BrdU (200 mg/kg, I.P.) was injected on PND 57, and animals terminated either 24 h (proliferation) or 4 weeks (neurogenesis) later. Our results demonstrate that prenatal ethanol exposure significantly decreases both cell proliferation and neurogenesis in the adult dentate gyrus. Animals in the PF condition also showed reduced neurogenesis. In contrast, all animals that engaged in voluntary exercise showed a significant increase in cell proliferation and neurogenesis. These results indicate that prenatal ethanol exposure can suppress both cell proliferation and neurogenesis, and that these effects may be, at least in part, nutritionally mediated. Importantly, voluntary exercise appears to have beneficial effects for these long-lasting deficits in hippocampal volume and cell number that have been observed in animals exposed to ethanol in utero.

4.
Evaluation of the Health Aspects of Dextrin and Corn Dextrin as Food Ingredients.
76-00 PB-254 538/2 NDN- 059-0051-3104-6 USG NTIS
PUBLICATION DATE
-1975
23p
PAGES
CORPORATE AUTHOR
-Federation of American Societies for Experimental Biology, Bethesda, Md. Life Sciences Research Office.
CORPORATE AUTHOR CODE
-401 196
SPONSOR
-Food and Drug Administration, Washington, D.C. Bureau of Foods.
MONITOR
-FDABF, GRAS-371,; FDA/HFF, 76/65
CONTRACT OR GRANT NUMBER
-Contracts FDA-72-85, FDA-75-2004
ITEM DESCRIPTION
-FDABF-GRAS-371. FDA/HFF-76/65. Dextrin and Corn Dextrin. 1975, 23p PC$3.50/MF$3.00
REPORT NUMBER
-SCOGS-75
NTIS PRICE
-PC A02; MF A01
SUPPLEMENTARY NOTE
-Report of Select Committee on GRAS Substances.
ISSUE OF ORIGINATION
-u7619
The report, by a group of scientists designated the Select Committee on GRAS Substances (SCOGS), provides an independent evaluation of the safety of food ingredients, when used in food at present or projected levels of use. For individual reports, see below:

5.
Scientific Literature Reviews on Generally Recognized as Safe (GRAS) Food Ingredients - Dextrin and Corn Dextrin.
74-00 PB-228 539/3 NDN- 059-0038-0916-3 USG NTIS
PUBLICATION DATE

-Jan 74
72p
PAGES
DOCUMENT TYPE
-Final rept. 1920-1973.
CORPORATE AUTHOR
-Food and Drug Research Labs., Inc., East Orange, N.J.
ITEM DESCRIPTION
-FDABF-GRAS-201. Dextrin and Corn Dextrin. Jan 74, 72p,
PC$3.75/MF$1.45
REPORT NUMBER
-FDABF-GRAS-201
NTIS PRICE
-PC A04; MF A01
ISSUE OF ORIGINATION
-u7409
Presents five reports which summarize literature from 1920 to 1973. Literature from 1920 to 1973 relating to the safety of food additives is summarized. Chemical information, biological data, and biochemical aspects are discussed. For individual reports, see below:

6.
Acute toxicity and mutagenicity studies of indigestible dextrin, and its effect on bowel movement of the rat
93-11 0508567 01 NDN- 086-0050-1864-2 BBS Biosis
AUTHORS
-WAKABAYASHI, S.; SATOUCHI, M.; UEDA, Y.; OHKUMA, K.
JOURNAL NAME
-JOURNAL OF THE FOOD HYGIENIC SOCIETY OF JAPAN
VOL.33, NO.6, P.557-562
PUBLICATION DATE
-1992
CORPORATE AUTHOR
-MATSUTANI CHEM. INDUSTRY CO. LTD., RES. INST., 5-3 KITAITAMI, ITAMI, HYOGO 664, JPN
LANGUAGE
-JAPANESE
Recently we developed a new water-soluble dietary fiber, an indigestible dextrin (PF-C) obtained through heat and enzyme treatment of potato starch. The physiological functions of PF-C, such as improvement of glucose

tolerance and lowering of serum cholesterol level, have been confirmed. We conducted acute toxicity and mutagenicity studies, and further, we examined the effect of PF-C on bowel movement in rats as part of a safety evaluation. The results can be summarized as follows. (1) The oral LD50 value of PF-C in mice was estimated to be more than 20.0 g/kg body weight. (2) No mutagenicity was observed in Salmonella typhimurium TA98, TA100, TA1535, TA1537, and Escherichia coli WP2uvrA-. (3) The excretion ratio in feces after single administration of PF-C was estimated to be 36% in rats. (4) A periodical increase of cecum weight and a decrease in pH in cecum contents were observed in rats fed a PF-C-supplemented diet. (5) Transit time of food was significantly shorter in rats fed a PF-C-supplemented diet than that in control rats.

7.

Indirect food additives: Adjuvants, production aids, and sanitizers

92-39 0471334 51 NDN- 086-0046-1141-3 BBS Biosis

AUTHORS

-ANON

JOURNAL NAME

-FEDERAL REGISTER

VOL.57, NO.184, Sept. 22, P.43613-43614

PUBLICATION DATE

-1992

NAMED COMPANY

-EDWARDS COUNCILOR CO INC, VIRGINIA BEACH, VA

LANGUAGE

-ENGLISH

8.

Use of certain binders in meat and poultry products and transfer of binders in text to the tables of approved substances

90-00 0284630 51 NDN- 086-0027-6617-7 BBS Biosis

AUTHORS

-ANON

JOURNAL NAME

-FEDERAL REGISTER

VOL.55, NO.165, Aug. 24, P.34678-34699
PUBLICATION DATE
-1990
LANGUAGE
-ENGLISH
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9.
FOUR ITEMS PROPOSED AS MEAT BINDERS
89-00 0165017 51 NDN- 086-0015-7004-2 BBS Biosis
AUTHORS
-ANON
JOURNAL NAME
-FOOD PRODUCTION MANAGEMENT
VOL.111, NO.6, DEC., 1988, P.24
PUBLICATION DATE
-1988
LANGUAGE
-ENGLISH
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10.
Dextrin. Proposed affirmation of GRAS status as a direct and indirect human food ingredient.
79-10 79-3-10-u0723-FSTA NDN- 091-0017-5382-0 FST IFIS
JOURNAL NAME
-Federal Register
44 (60, March 27) 18246-18249
PUBLICATION DATE
-1979
CORPORATE AUTHOR
-United States of America, Food & Drug Administration
PUBLISHER
-Washington, DC, USA
LANGUAGE
-English
A summary is given of a literature review relating to the safety of dextrin. There is no evidence to suggest a hazard to the public when dextrin is used at current levels or at levels which might reasonably be expected in the

future. Therefore it is proposed to reaffirm the generally recognized as safe (GRAS) status of dextrin as a direct and indirect human food ingredient.

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11.

Taste and health drive markets.

22-26 TCD2226032416 NDN- 094-0088-0875-3 CBN Elsevier

JOURNAL NAME

-Chemical Market Reporter

PUBLICATION DATE

-2006-07-03

DOCUMENT TYPE

-Journal

ISSN

-1092-0110

CODEN

-CMREF6

USA

NAMED COMPANY

-National Starch Food Innovation

ITEM DESCRIPTION

-Word count 200-899

LANGUAGE

-English

National Starch Food Innovation has launched Nutriose, a tasteless, dextrin-based soluble fibre product for use in beverages and dairy products. There is brief discussion of the product and its applications.

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12.

National Starch and Chemical prosecuted for dextrine plant explosion.

13-33 TCD1333040584 NDN- 094-0026-5236-3 CBN Elsevier

JOURNAL NAME

-Performance Chemicals International (PCI)

VOLUME

12

NUMBER
6
PUBLICATION DATE
-1997-07-31
PP
6
DOCUMENT TYPE
-Journal
ISSN
-0950-3870
UK
NAMED COMPANY
-National Starch and Chemical
ITEM DESCRIPTION
-word count 10-99
LANGUAGE
-English
National Starch and Chemical is to be prosecuted by the UK's Health and Safety Executive (HSE) following its study into explosion at the company's dextrine plant in Goole, UK, in Sep 1996. The HSE claims that National Starch did not ensure the safety of its workforce at the plant, as far as was reasonably practicable.

13.
Toxicities of TNT and cyclodextrin mixtures using bacterial and phytoplanktonic ecotoxicity tests
MONOGRAPH TITLE
-Proceedings of the 6. symposium and exhibition on groundwater and soil remediation
98-12 98:053882 98001938535 NDN- 108-0657-7339-3 EDB NTIS
AUTHORS
-Sunahara, G. L.; Hawari, J.; Fung, C. Y.; Dodard, S.; Renoux, A. Y., (National Research Council of Canada, Biotechnology Research Institute, Montreal, PQ (Canada)); Thiboutot, S.; Ampleman, G, (Defence Research Establishment, Valcartier, PQ (Canada))
PUBLICATION DATE
-1997; Conference; Nonconventional Literature: No Copies Supplied
PP
209-225
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AUTHOR AFFILIATION
-National Research Council of Canada, Biotechnology Research Institute, Montreal, PQ (Canada); Defence Research Establishment, Valcartier, PQ (Canada)
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-Environment Canada, Ottawa, ON (Canada); Waterloo Centre for Groundwater Research Waterloo, ON (Canada); National Energy Board, Calgary, AB (Canada); Alberta Environmental Protection, Edmonton, AB (Canada); LG Conference Services, (Canada); Water Technology International Corp., (Canada); National Research Council of Canada, Ottawa, ON (Canada); Hatch Associates Limited, (Canada); Ministere de l'Environnement et de la Faune du Quebec, Sainte-Foy, PQ (Canada); Canadian Association of Petroleum Producers, Calgary, AB (Canada)
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-6. symposium and exhibition on groundwater and soil remediation
CONFERENCE LOCATION
-Montreal (Canada)
ANNOUNCEMENT CODE
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INCOMING TAPE SERIAL NUMBER
-CA9800734
ANNOUNCEMENT IDENTIFICATION
-CANM-98:000734; EDB-98:053882
LANGUAGE
-English
Soil additives, such as cyclodextrins were studied in an effort to determine

their potential ecotoxicological effects in increasing the bioavailability of TNT and and some of its related breakdown products, which are known to be carcinogenic and mutagenic to animals and potentially to humans. Six different CDs, alone and in combination with TNT, were examined by using bacterial bioluminescence and the green algal 96h growth inhibition test. Using the Microtox sup T M test and different CD-TNT combinations, results indicated that alpha -CD had a synergistic effect on apparent TNT toxicity, whereas gamma -CD-TNT combination had an antagonistic effect. Other CDs had no apparent effect on TNT toxicity. In the algal test, beta CD tended to have additive interactions with TNT, while other CDs tended to have no apparent effect on algal growth inhibition. Evaluation of these results led to the conclusion that among the CDs tested, certain gamma - and beta -CDs may be candidates for increasing bioavailability of TNT from soil.

14.
New drugs of 2003
04-12 1291887 NDN- 118-0138-5983-0 IPA Thomson Scientific
AUTHORS
-Hussar, DA
JOURNAL NAME
-Journal of the American Pharmacists Association
VOLUME
44
NUMBER
2
PUBLICATION DATE
-2004
PP
168-210
6
REFERENCES
DOCUMENT TYPE
-Review
ISSN
-1086-5802
CODEN
-JPHAF8
AUTHOR AFFILIATION
-Univ Sci Philadelphia, Coll Pharm, 600 S 43rd St, Philadelphia, PA 19104, USA d.hussar@usip.edu

TRADE NAME
-Cubicin; Vardenafil hydrochloride; Fuzeon; Emtriva; Reyataz; Alinia; Inspra; Crestor; Strattera; Namenda; Relpax; Humira; Amevive; Raptiva; Xolair; Emend; Aloxi; Uroxatral; Cialis; Somavert; Iressa; Velcade; Bexxar; Corixa; Solage; Aldurazyme; Zavesca; Extraneal
LANGUAGE
-English
Objectives: To provide information regarding the most important properties of the new therapeutic agents marketed in 2003. Data Sources: Product labeling supplemented selectively with published studies and drug information reference sources. Study Selection: By the author. Data Extraction: By the author. Data Synthesis: The 28 new therapeutic agents marketed in the United States during 2003 are reviewed in this article: adalimumab, agalsidase beta, alefacept, alfuzosin hydrochloride, aprepitant, atazanavir sulfate, atomoxetine hydrochloride, bortezomib, daptomycin, efalizurnab, eletriptan hydrobromide, emtricitabine, enfuvirtide, eplerenone, gefitinib, icodextrin, laronidase, memantine hydrochloride, mequinol/tretinoin, miglustat, nitazoxanide, omalizumab, palonosetron hydrochloride, pegvisomant, rosuvastatin calcium, tadalafil, tositumomab and iodine 1 131 tositumomab, and vardenafil hydrochloride. Indications and information on dosage and administration for these agents are reviewed, as are the most important pharmacokinetic properties, adverse events, drug interactions, and other precautions. Practical considerations for the use of the new agents are also discussed. When possible, the properties of the new drugs are compared with those of older drugs marketed for the same indications. Conclusion: A number of the new therapeutic agents marketed in 2003 have important advantages over older medications. An understanding of the properties of these agents is important for the pharmacist to effectively counsel patients about their use and to serve as a valuable source of information for other health professionals regarding these drugs.

15.
Glucose polymer supplementation of feeds for very low birth weight infants
84-00 547060 NDN- 118-0110-0922-2 IPA Thomson Scientific
AUTHORS
-Raffles, A.; Schiller, G.; Erhardt, P.; Silverman, M.
JOURNAL NAME
-British Medical Journal
VOLUME

286
PUBLICATION DATE
-Mar 19 1983
PP
935-936
12
REFERENCES
ISSN
-0959-8146
PUBLICATION DATE
-1983
CODEN
-BMJOAE
AUTHOR AFFILIATION
-Royal Postgraduate Med. School, Hammersmith Hosp., London, W12 0HS, England
PUBLICATION COUNTRY
-England
TRADE NAME
-Caloreen
LANGUAGE
-English
A randomized, controlled, crossover study was designed to investigate the use of a glucose polymer (Caloreen; dextrin; I), 6 g/kg/day administered by nasogastric tube, as a food supplement for 14 infants of a very low birth weight (/LT/ 1.5 kg). Seven day periods of supplementation were alternated with 7 day periods of normal feeding. Adding I significantly increased the rate of weight gain in the infants from 105 g/wk to 140 g/wk; growth rates in terms of length and head circumference were not affected. No adverse effects were noted. It was concluded that I is a useful energy supplement for very low birth weight infants.

16.
Twenty-Eight-Day Repeated-Dose Oral Toxicity Study of Water-Miscible Coenzyme Q10 Preparation (Q10EP40) in Rats
05-11 6494409 NDN- 122-0279-3658-4 LSC CSA
AUTHORS
-Tanaka, Hozumi; Nagata, Kumiko; Oda, Shigeto; Edamoto, Hiroshi; Kitano, Mitsuaki; Oya, Kozo; Hosoe, Kazunori
ABBREVIATED JOURNAL TITLE

-Journal of Health Science J. Health Sci.
vol. 51, no. 3, pp. 346-356
PUBLICATION DATE
-2005-00-00
DOCUMENT TYPE
-Journal Article
BIBLIOGRAPHIC LEVEL
-Analytical, Serial
ISSN
-1344-9702
AUTHOR AFFILIATION
-Research & Development Group, Functional Foods Development Division, Kaneka Corporation, 1-8 Miyamae-machi, Takasago-cho, Takasago, Hyogo 676-8688, Japan; E-mail: Hozumi-1.-Tanaka@kn.kaneka.co.jp
LANGUAGE
-English
Q10EP40, a new water-miscible and emulsified floury preparation for dietary supplements, consists of coenzyme Q10 (CoQ10), fatty acid ester of glycerin, casein, dextrin and sodium carbonate. The safety of CoQ10 bulk substance itself has been evaluated by several subacute and chronic toxicity studies in animals. However, the safety of CoQ10 preparation produced with food ingredients has not yet been fully confirmed. The present study was conducted to evaluate the toxicity of Q10EP40 in Sprague- Dawley rats with gavage administration at concentrations of 500, 1000 or 2000 mg/kg for 28 days. No deaths were observed in any group, and there were no adverse effects on general condition, behavior, body weight or food consumption, results of urinalysis, hematology, blood chemistry, ophthalmological examination, gross pathological examination or histopathological examination, or organ weights. On the basis of these findings, the no-observed-adverse effect level (NOAEL) for Q10EP40 in Sprague-Dawley rats is considered to be 2000 mg/kg/day.

17.
Postprandial glucose and insulin responses to dextrin-containing medical nutritional bars in persons with type 2 diabetes mellitus.
04-43 04-478627 NDN- 199-0131-4839-0 BIO Thomson Scientific
AUTHORS
-Nicholson, Sue; Cockram, David; Dawson, Michelle; Garvey, W. Timothy; Ruey, Peter; Wallace, Penny; Wolf, Bryan
JOURNAL NAME

-Diabetes
VOLUME
50
NUMBER
Supplement 2
PUBLICATION DATE
-June, 2001
PP
A366.
DOCUMENT TYPE
-Meeting
ISSN
-0012-1797
ADDRESS
-Columbus, OH, USA
MEDIUM
-print
CONFERENCE DATE
-June 22-26, 2001
CONFERENCE TITLE
-61st Scientific Sessions of the American Diabetes Association
LANGUAGE
-ENGLISH
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18.

Fat replacers and fat mimetics: The development of reduced-fat foods.

03-35 03-349043 NDN- 199-0063-8781-5 BIO Thomson Scientific
AUTHORS
-Ragotzky, Klaus
JOURNAL NAME
-Schriftenreihe des Bundesministeriums fuer Ernaehrung Landwirtschaft und Forsten Reihe A Angewandte Wissenschaft
NUMBER
484
PUBLICATION DATE
-1999
PP
33-47.
DOCUMENT TYPE
-Literature Review

ISSN
-0723-7847
ADDRESS
-UNION Deutsche Lebensmittelwerke GmbH, Dammtorwall 15, 20335, Hamburg, Germany
MEDIUM
-print
LANGUAGE
-GERMAN
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19.
Substitution of dietary fats - a survey.
03-35 03-349042 NDN- 199-0063-8780-7 BIO Thomson Scientific
AUTHORS
-Zunft, Hans-Joachim F.
JOURNAL NAME
-Schriftenreihe des Bundesministeriums fuer Ernaehrung Landwirtschaft und Forsten Reihe A Angewandte Wissenschaft
NUMBER
484
PUBLICATION DATE
-1999
PP
1-31.
DOCUMENT TYPE
-Literature Review
ISSN
-0723-7847
ADDRESS
-Institut fuer Ernaehrungswissenschaft der Universitaet Potsdam, Arthur-Scheunert-Allee 114-116, 14558, Bergholz-Rehbruecke, Germany
MEDIUM
-print
LANGUAGE
-GERMAN
The provision of low-fat or reduced-fat foods can contribute to lowering the intake of fat and energy. However, simply reducing the fat content causes losses in the sensory, culinary and technological properties of food. This makes fat replacers important, which can be categorized either as fat substitutes or fat mimetics. Fat substitutes have similar physical properties like fats (e.g. hydrophobia, melting points, appearance, temperature

resistance). This group of substances includes special triglycerides, carbohydrate esters, retro fats and trialkylglycerine ethers. Their content of absorbable energy is negligible. Fat mimetics mainly simulate the sensory properties of dietary fats. These include microparticulated proteins as well as carbohydrates (e.g. inulin, starch and dextrins, highly water-absorbent swelling substances). Being toxicologically harmless and with increasing sensory properties, they are bound to determine the future in the substitution of fat.

20.
Alcohol feeding and endotoxin modulate apoptotic effectors in rat pancreas.
02-32 02-338630 NDN- 199-0009-3593-2 BIO Thomson Scientific
AUTHORS
-Gates, Lawrence K., Jr.; Fortunato, Franco
JOURNAL NAME
-Gastroenterology
VOLUME
116
NUMBER
4 PART 2
PUBLICATION DATE
-April, 1999
PP
A1123.
DOCUMENT TYPE
-Meeting
ISSN
-0016-5085
ADDRESS
-Univ of Kentucky, Lexington, KY, USA
SPONSOR
-American Gastroenterological Association
CONFERENCE DATE
-May 16-19, 1999
CONFERENCE TITLE
-Digestive Disease Week and the 100th Annual Meeting of the American Gastroenterological Association
LANGUAGE
-ENGLISH

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21.

Effect of indigestible dextrin contained food, food for specified health use, on glucose and lipid metabolism.

02-29 02-290101 NDN- 199-0004-5064-3 BIO Thomson Scientific

AUTHORS

-Matsuoka, A.; Tokunaga, K.

JOURNAL NAME

-Journal of the Japan Diabetes Society

VOLUME

42

NUMBER

1

PUBLICATION DATE

-1999

PP

61-65.

DOCUMENT TYPE

-Article

ISSN

-0021-437X

LANGUAGE

-JAPANESE

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22.

Short-term memory impairment and reduced hippocampal c-Fos expression in an animal model of fetal alcohol syndrome

08-43 PREV200510182698 NDN- 244-0350-6685-5 BIO Thomson Scientific

AUTHORS

-Clements, Koreen M.; Girard, Todd A.; Ellard, Colin G.; Wainwright, Patricia E.

JOURNAL NAME

-Alcoholism Clinical and Experimental Research

VOLUME

29

NUMBER

6
PUBLICATION DATE
-2005, JUN 2005
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1049-1059
DOCUMENT TYPE
-Article
ISSN
-0145-6008
ADDRESS
-Email: kmfrisa@uwaterloo.ca; Univ Waterloo, Dept Psychol, Waterloo, ON N2L 3G1, Canada
LANGUAGE
-English
Background: Previous work in our laboratory has shown that exposure to ethanol during the brain growth spurt impairs spatial short-term memory in rats on the delayed matching-to-place (DMP) version of the Morris water maze. The objectives of this study were to ascertain whether this impairment could: 1) be prevented by increasing the length of encoding time and 2) be related to hippocampal c-Fos expression.Methods: Using an artificial rearing model, male Long-Evans rats were fed 6.5g/Kg/day of ethanol from postnatal days 6-9, with controls fed an isocaloric amount of maltose dextrin. As adults, rats in each treatment condition were trained and subsequently tested on either the DMP version of the Morris water maze, or on a random platform version (RAN) that incorporated the same performance requirements, but disallowed spatial learning. Brains were processed for c-Fos expression.Results: Ethanol-exposed rats showed longer search trials during training and took longer to learn the DMP task. When the delay between search and recall trials was increased from 60 see to 120 min, the performance of ethanol-exposed rats was impaired compared with that of controls after a 10 see, but not after a 45 see, encoding time. Brain c-Fos expression was increased in hippocampus, prefrontal cortex and visual cortex in rats trained on the DMP compared to the RAN task. Furthermore, in the DMP-trained rats, hippocampal c-Fos expression was lower in ethanol-exposed rats.Conclusions: These results suggest that the short-term memory impairment of ethanol-exposed rats 1) can be improved slightly by an increase in encoding time and 2) is related to a decrease in c-Fos expression in the hippocampus.

23.

A new model of fatty liver disease: Interaction of chronic alcohol and environmental tobacco smoke exposure in the ApoE-/-hypercholesterolemic mouse.

08-40 PREV200510148046 NDN- 244-0347-2033-8 BIO Thomson Scientific

AUTHORS

-Bailey, Shannon M.; Pawar, Soniya; Robinson, Gloria; Cakir, Yavuz; George, Shakeeta; Goldsmith, Michael; Chhieng, David; Pinkerton, Kent; Ballinger, Scott

JOURNAL NAME

-Hepatology

VOLUME

40

NUMBER

4, Suppl. 1

PUBLICATION DATE

-2004, OCT 04

PP

273A

DOCUMENT TYPE

-Meeting

ISSN

-0270-9139

ADDRESS

-Univ Alabama, Birmingham, AL USA

SPONSOR

-Amer Assoc Study Liver Dis

CONFERENCE DATE

-October 29 -November 02, 2004

CONFERENCE TITLE

-55th Annual Meeting of the American-Association-for-the-Study-of-Liver-Diseases (AASLD)

LANGUAGE

-English

24.

A dose-ranging phase I/II study of dextrin sulphate gel as a novel vaginal microbicide: Data from 50 HIV-negative women.

05-15 05-211738 NDN- 244-0162-6278-8 BIO Thomson Scientific

AUTHORS

-Van Damme, L.; Nunn, A. J.; McCormack, S.; Low-Beer, N.; Lacey, C. J. N.;

Jespers, V.; Gabe, R.; Chapman, A.
JOURNAL NAME
-International Journal of STD & AIDS
VOLUME
12
NUMBER
Supplement 2
PUBLICATION DATE
-2001
PP
36.
DOCUMENT TYPE
-Meeting
ISSN
-0956-4624
ADDRESS
-Clinical Trials Centre, Imperial College St Mary's, London, UK
SPONSOR
-International Union Against Sexually Transmitted Infections, ISSTDR
MEDIUM
-print
CONFERENCE DATE
-June 24-27, 2001
CONFERENCE TITLE
-International Congress of Sexually Transmitted Infections
LANGUAGE
-ENGLISH
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25.
INITIAL SUBMISSION: EVALUATION OF DERMAL EFFECTS OF ERIONYL BLACK GD IN HUMANS WITH COVER LETTER DATED 100992
02-01 TSCATS/451169 NDN- 252-0048-4718-9 TOX Nat Lib of Medicine
PUBLICATION DATE
-1992
CLASSIFICATION
-TSCA Sect. 8ECP Rec 11/02/92
SOURCE OF ABSTRACT
-EPA/OTS; Doc #88920010521
DOCUMENT ORDER NUMBER
-NTIS/OTS0571841

SOURCE OF ARTICLE
-TSCATS
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26.
INITIAL SUBMISSION: ACUTE EYE IRRITATION/CORROSION STUDY OF CALCOZINE BLACK CSP POWDER IN NEW ZEALAND WHITE RABBITS WITH COVER LETTER DATED 051592
02-01 TSCATS/425631 NDN- 252-0047-5900-4 TOX Nat Lib of Medicine
PUBLICATION DATE
-1992
CLASSIFICATION
-TSCA Sect. 8ECP Rec 05/21/92
SOURCE OF ABSTRACT
-EPA/OTS; Doc #88920002768
DOCUMENT ORDER NUMBER
-NTIS/OTS0539527
SOURCE OF ARTICLE
-TSCATS
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27.
Starch-dextrin solution as a novel control method for two spotted mite (Tetranychus urticae) and powdery mildew (Sphaerotheca fuliginea) on cucumber and whitefly (Trialeurodes vaporariorum) on tobacco.
91-03 911155602 NDN- 072-0103-7263-8 CAB CAB International
AUTHORS
-Pickford, R. J. J.; Mathieson, I. C.
PUBLICATION DATE
-1990
PP
361-366
DOCUMENT TYPE
-Conference
COLLECTION TITLE
-Brighton Crop Protection Conference, Pests and Diseases - Vol. 1.
ISBN

-0-948404-46-9
AUTHOR AFFILIATION
-Research and Development Department, Humber Growers Ltd., Brough, North Humberside, UK.
SUPPLEMENTARY NOTE
-3 ref.
SUBFILE
-Review of Agricultural Entomology, (0E Vol. 079 Abs. No. 09065); Review of Plant Pathology, (0M Vol. 070 Abs. No. 06843); Horticultural Abstracts, (0C Vol. 062 Abs. No. 00291)
SUBFILE CODE
-0C; 0E; 0M
PUBLISHER
-Thornton Heath, UK; British Crop Protection Council
LANGUAGE
-English
In greenhouse experiments, starch-dextrin solution was as effective as fenbutatin oxide against Tetranychus urticae on cucumber and also reduced Sphaerotheca fuliginea pustule formation by 57%; spore germination was also reduced. The solution was also effective in preventing eggs of Trialeurodes vaporariorum on tobacco from hatching and in killing larvae of the pest.

28.
Provisional instructions for using Fenadek (micronized niclosamide plus dextrin) against cestodes of sheep.
90-04 902224389 NDN- 072-0094-3591-7 CAB CAB International
JOURNAL NAME
-Veterinariya (Moskva)
NUMBER
7
PUBLICATION DATE
-1990
PP
73-74
DOCUMENT TYPE
-Journal
CORPORATE AUTHOR
-USSR, Chief Veterinary Directorate
SUBFILE

-Index Veterinarius, (0I Vol. 058 Abs. No. 00012); Helminthological Abstracts, (0H Vol. 060 Abs. No. 01570)
SUBFILE CODE
-0H; 0I
LANGUAGE
-Russian
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29.
Change in starch degrading enzyme activity during germination of Dongjinbyeo and red rice under humid upland and submerged paddy conditions.
00-08 20002303025 NDN- 191-0636-6855-9 CAB CAB International
AUTHORS
-Lee, K. H.; Hong, K. S.; Han, S. S.; Cho, K. Y.
JOURNAL NAME
-Korean Journal of Weed Science
VOLUME
19
NUMBER
2
PUBLICATION DATE
-1999
PP
167-175
16
REFERENCES
DOCUMENT TYPE
-Journal article
ISSN
-0253-7468
AUTHOR AFFILIATION
-KRICT, P.O.Box 107, Yusung, Taejon 305-600, Korea Republic.
ORGANISM DESCRIPTOR
-Oryza sativa; Oryza
LANGUAGE OF ABSTRACT
-English
LANGUAGE
-Korean
Changes in the activity of starch degrading enzymes (alpha -amylase, debranching enzyme alpha -dextrin endo-1,6- alpha -glucosidase and alpha -glucosidase) were studied during the germination of rice cv. Dongjinbyeo

and red rice (Oryza sativa) under humid upland and submerged paddy conditions in Korea Republic. Weedy rice (red rice) seeds germinated very slowly and irregularly under submerged paddy conditions, achieving 23% germination after 10 days, compared to 95% Dongjinbyeo germination. Red rice seedling growth was weaker under submerged paddy than under humid upland conditions. In both humid upland and submerged paddy conditions, Dongjinbyeo alpha -amylase activity gradually increased during germination. Red rice alpha -amylase activity increased at 4 days after sowing (DAS) under humid upland conditions, but enzyme activity was low at 10 DAS under submerged paddy conditions. Debranching enzyme activity of Dongjinbyeo increased gradually after sowing under both conditions. Red rice debranching enzyme activity was one fifth of that of Dongjinbyeo under humid upland conditions and showed less activity under submerged paddy conditions. Dongjinbyeo alpha -glucosidase activity increased continuously after sowing under both conditions. However, alpha -glucosidase activity of red rice much more rapidly from 4 to 10 DAS, reaching activity levels twice that of Dongjinbyeo under humid upland conditions. The observed differences between Dongjinbyeo and red rice starch degrading enzyme activity during germination may contribute towards the better germinability of Dongjinbyeo than red rice under submerged paddy conditions.

30.
Isolation of amylolytic bacteria from soil and water samples and some characteristics of their amylolytic enzymes.
97-03 971902833 NDN- 191-0580-1497-5 CAB CAB International
AUTHORS
-Albayrak, N.; Donmez, S.; Balk, M.
JOURNAL NAME
-Turkish Journal of Biology
VOLUME
20
NUMBER
SUPPL
PUBLICATION DATE
-1996
PP
47-54
17
REFERENCES
DOCUMENT TYPE

-Journal article
ISSN
-1010-7576
AUTHOR AFFILIATION
-Ankara Universitesi, Gida Muhendisligi Bolumu, Diskapi, Ankara, Turkiye.
ORGANISM DESCRIPTOR
-bacteria; Bacillus subtilis
LANGUAGE OF ABSTRACT
-English
LANGUAGE
-Turkish
From different samples, 17 amylolytic bacteria were isolated and classified according to their total amylolytic activity on liquid and solid media. A hot-spring isolate Bacillus subtilis (5 alpha -2) showed the highest activity with 24 U/ml alpha -amylase and 13 U/ml pullulanase activity at 40 and 32 hours on yeast extract-pepton-soluble starch broth, respectively. The effects of different C sources on amylase activity were tested and dextrin and pullulan were the most effective with the 36 U/ml alpha -amylase and 23 U/ml on pullulan. The optimum temperature was 50 deg C for alpha -amylase and 60 deg C for pullulanase activities. alpha -amylase lost 23% and pullulanase 5% of their activity at the end of incubation for 2 hours in a water bath at 100 deg C. Optimum pH was 5 for alpha -amylase and 4-6 for pullulanase activity. Crude enzyme solution lost 5% of its amylase activity after 4 days at 4 deg C.

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ISI Web of Knowledge Search Criteria

Results Topic=(Dextrin OR Dextrine OR 9004-53-9) AND Topic=(Food OR Feed OR Soil OR Animal OR Livestock OR Crops OR Safety OR Toxic OR Toxicity OR Health OR Persistence OR Environmental impact)
Refined by: Subject Areas=(FOOD SCIENCE & TECHNOLOGY OR GOVERNMENT & LAW OR NUTRITION & DIETETICS) AND General Categories=(SCIENCE & TECHNOLOGY) AND Document Type=(ARTICLE OR PATENT OR REVIEW)
Timespan=Latest 5 years.

Record 1 of 25

Title Processed food composition containing dextrin.

Patent Number(s) WO2009005107-A1

Assignee(s) San-Ei Gen FFI Inc.

Inventor(s) Hosomi T; Mitsunaga K; Iwai K; Tomita C; Ito D; Konda T; Muramori K; Oshita J; Hirai C; Nagayasu K; Wada S; Toyoizumi S; Fujita Y; Nakajima K; Maruoka H; Miyawaki A

Author(s) [Anon]

Source PCT International Patent Application 2009

Times Cited 0

Abstract A processed food composition containing dextrin is described. The dextrin has a blue value of 0.4-1.2 and a 30 wt.% aqueous solution of it, prepared with distilled water at 80degreesC, has a jelly strength of >=4 N/cm2 after standing for 24 h at 5degreesC. A 30 wt.% aqueous solution of the dextrin, prepared with distilled water at 25degreesC, has a viscosity of <=100 mPa s at 25degreesC after standing at that temp. for 5 min. The ratio between the jelly strength values of 30 wt.% aqueous solutions of the dextrin prepared using distilled water at 80 and 25degreesC, after standing for 24 h at 5degreesC, is <=2. Examples of the processed food composition include: a fatty tissue substitute; a processed meat product prepared using the fatty tissue substitute in place of a fatty meat; an emulsion-like food; an emulsion food; a cheese-like food; a processed food prepared using the cheese-like food in place of cheese; a sugar confectionery product; and a beverage.

Record 2 of 25

Title Processed food composition containing dextrin.

Patent Number(s) WO2009004711-A1

Assignee(s) San-ei Gen FFI Inc.

Inventor(s) Hosomi T; Mitsunaga K; Iwai K; Tomita C; Ito D; Konda T; Muramori K; Oshita J; Hirai C; Nagayasu K; Wada S; Toyoizumi S

Author(s) [Anon]

Source PCT International Patent Application 2009

Times Cited 0

Abstract A processed food composition containing dextrin is described. Preferably, the dextrin preparation has a blue value in the range 0.4-1.2, a jelly strength of >=4 N/cm2 and a viscosity of 100 mPa s under specified conditions. The preparation may be used as a low fat emulsified food or a fat replacer in various foods, including processed meats and cheese substitutes.

Record 3 of 25

Title Nutrient-driven incretin secretion into intestinal lymph is different between diabetic Goto-Kakizaki rats and Wistar rats

Author(s) Kindel, TL; Yang, Q; Yoder, SM; Tso, P

Source AMERICAN JOURNAL OF PHYSIOLOGY-GASTROINTESTINAL AND LIVER PHYSIOLOGY 296 (2):G168-G174 2009

Times Cited 1

Abstract Kindel TL, Yang Q, Yoder SM, Tso P. Nutrient-driven incretin secretion into intestinal lymph is different between diabetic Goto-Kakizaki rats and Wistar rats. Am J Physiol Gastrointest Liver Physiol 296: G168-G174, 2009. First published December 4, 2008; doi:10.1152/ajpgi.90506.2008.-The incretin hormones gastric inhibitory polypeptide (GIP) and glucagon-like peptide-1 (GLP-1) augment postprandial glucose-mediated insulin release from pancreatic beta-cells. The Goto-Kakizaki (GK) rat is a widely used, lean rodent model of Type 2 diabetes; however, little is known regarding the incretin secretion profile to different nutrients in these rats. We have recently shown that lymph is a sensitive medium to measure incretin secretion in rodents and probably the preferred compartment for GLP-1 monitoring. To characterize the meal-induced incretin profile, we compared lymphatic incretin concentrations in the GK and Wistar rat after enteral macronutrient administration. After cannulation of the major mesenteric lymphatic duct and duodenum, each animal received an intraduodenal bolus of either a fat emulsion, dextrin, a mixed meal, or saline. Lymph was collected for 3 h and analyzed for triglyceride, glucose, GLP-1, and GIP content. There was no statistical difference in GIP or GLP-1 secretion after a lipid bolus between GK and Wistar rats. Dextrin and a mixed meal both increased incretin concentration area under the curve, however, significantly less in rats compared with Wistar rats (dextrin GIP: 707 +/- 106 vs. 1,373 +/- 114 pg.ml(-1).h, respectively, P < 0.001; dextrin GLP-1: 82.7 +/- 24.3 vs. 208.3 +/- 26.3 pM/h, respectively, P = 0.001). After administration of a carbohydrate-containing meal, GK rats were unable to

mount as robust a response of both GIP and GLP-1 compared with Wistar rats, a phenomenon not seen after a lipid meal. We propose a similar, glucose-mediated incretin secretion pathway defect of both K and L cells in GK rats.

ISSN 0193-1857

DOI 10.1152/ajpgi.90506.2008

Record 4 of 25

Title A Review of the Role of Soluble Fiber in Health with Specific Reference to Wheat Dextrin

Author(s) Slavin, JL; Savarino, V; Paredes-Diaz, A; Fotopoulos, G

Source JOURNAL OF INTERNATIONAL MEDICAL RESEARCH 37 (1):1-17 2009

Times Cited 0

Abstract Dietary fiber is widely recognized to have a beneficial role in overall health, but only at adequate levels (25-38 g/day for healthy adults). Wheat dextrin in particular is a soluble fiber that can easily be added to the diet and is widely used in the food industry. There is some debate about whether increased intake of soluble fibers leads to health benefits. This paper reviews the evidence regarding the physiological effects and potential health benefits of the addition of soluble dietary fibers, with specific reference to wheat dextrin, based on a search of PubMed. The evidence suggests that soluble fibers help to regulate the digestive system, may increase micronutrient absorption, stabilize blood glucose and lower serum lipids, may prevent several gastrointestinal disorders, and have an accepted role in the prevention of cardiovascular disease. It is concluded that supplementation with soluble fibers (e.g. wheat dextrin) may be useful in individuals at risk of a lower than recommended dietary fiber intake.

ISSN 0300-0605

Record 5 of 25

Title Safety studies of LP20 powder produced from heat-killed Lactobacillus plantarum L-137

Author(s) Hirose, Y; Murosaki, S; Yamamoto, Y; Muroyama, K; Miwa, Y; Fujishima, A; Lynch, B

Source REGULATORY TOXICOLOGY AND PHARMACOLOGY 54 (3):214-220 2009

Times Cited 0

bstract The safety of LP20 and its prototype, a powder, with potential use in food, produced from a mixture of dextrin and heat-killed actobacillus plantarum L-137, was assessed in an acute study in mice, and in an in vitro bacterial reverse mutation assay, an in vitro chromosome aberration assay, and an in vivo mouse micronucleus assay. LP20 prototype was not acutely toxic when administered to male and female Slc:ICR mice by single gavage at 2000 mg/kg bw. Dosing was not associated with mortality, clinical signs, changes in bodyweight, or macroscopic abnormalities. The LD50 in mice was greater than 2000 mg/kg bw. There was no evidence of genotoxicity of LP20 in the Ames assay (0-5000 mu g/plate) or in the in vitro chromosome aberration assay with Chinese hamster lung fibroblasts (0-5000 mu g/mL). Administration of two consecutive daily doses of 500, 1000, or 2000 mg/kg bw by gavage to male CrIj:CD-1 mice was not associated with an increased incidence of micronuclei and did not alter the ratio of polychromatic to normochromatic erythrocytes. These studies show that LP20 powder is not acutely toxic and is without genotoxic activity both in vitro and in vivo. (C) 2009 Elsevier Inc. All rights reserved.

ISSN 0273-2300

DOI 10.1016/j.yrtph.2009.03.007

Record 6 of 25

Title [Thickening composition for liquid food, and method for producing the same.]

Patent Number(s) JP2009000055-A

Assignee(s) Morinaga Milk Industry Co. Ltd.

Inventor(s) Miyazaki K; Saito F; Takeda Y

Author(s) [Anon]

Source Japanese Patent Application 2009

Times Cited 0

Abstract A thickening composition for liquid foods is described which comprises trisodium citrate, xanthan gum, carrageenan and dextrin. A method for the production of the thickener is also disclosed.

Record 7 of 25

le [Oil and fat-containing granule and method for producing the same.]

Patent Number(s) JP2009011269-A

\ssignee(s) Japan Tobacco Inc.

Inventor(s) Kurayama T; Tsuji M

Author(s) [Anon]

Source Japanese Patent Application 2009

Times Cited 0

Abstract A granular food composition containing 30-50 wt.% oil and fat, an oil and fat-absorbing base material, a granulating base material and polyol is described. The oil and fat-absorbing base material is, preferably, dextrin whose loose apparent relative density is <=50 and/or crystalline cellulose, and the granulating base material is, preferably, dextrin whose loose apparent specific gravity is >=30. The granular food composition contains 30-50 wt.% oil and fat, dextrin and/or crystalline cellulose, and polyol. Ooze of the oil and fat is 35 wt.% or lower for total amount of the oil and fat (preferably, <=25 wt.%, more preferably, <=15 wt.%).

Record 8 of 25

Title [Blood glucose level rise-suppressing agent for ingestion after eating, and food in which blood glucose level rise-suppressing agent for ingestion after eating is formulated, containing the same agent.]

Patent Number(s) JP2009046448-A

Assignee(s) Japan Tobacco Inc.

Inventor(s) Hamamoto T; Tsumura S; Terasawa H

Author(s) [Anon]

Source Japanese Patent Application 2009

Times Cited 0

Abstract A preparation containing indigestible dextrin, which may be consumed after eating a meal to suppress a rise in blood glucose level after eating, is described.

Record 9 of 25

tle Mineral-absorption promoter, food and feed.

Patent Number(s) US20090232961-A1

Assignee(s) Matsutani Chemical Industry Co. Ltd.

Inventor(s) Ichihara T; Miyazato S; Tagami H; Kishimoto Y; Hara H

Author(s) [Anon]

Source United States Patent Application Publication 2009

Times Cited 0

Abstract A composition for improving absorption of minerals in the gastrointestinal tract and foods and feeds containing it are described. The a.i. of the composition is dextrin that shows good resistance to the digestive enzymes of mammals or a derivative of this carbohydrate.

Record 10 of 25

Title Branched dextrin, process for production thereof, and food or beverage.

Patent Number(s) WO2009113652-A1

Assignee(s) Matsutani Chemical Industry Co. Ltd.

Inventor(s) Shimada K; Uehara Y; Yoshikawa Y; Matsuda I; Yamada T

Author(s) [Anon]

Source PCT International Patent Application 2009

Times Cited 0

Abstract An indigestible dextrin with a low osmotic pressure and a method for preparing the dextrin are disclosed. The branched dextrin is characterized by having glucose or isomaltooligosaccharide bound to a non-reducing terminal of dextrin via an alpha-1,6-glucoside bond with a DE of 10-52. The process is characterized by allowing maltose-producing amylase and transglucosidase (enzymic unit ratio = 2:1-44:1) to act on an aqueous solution to produce a branched dextrin.

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cord 11 of 25

Title Effect of dietary protein and carbohydrate levels on growth, nutrient utilization and body composition in fingerling rohu, Labeo rohita (Hamilton)

Author(s) Satpathy, BB; Ray, AK

Source JOURNAL OF APPLIED ICHTHYOLOGY 25 (6):728-733 2009

Times Cited 0

Abstract P>Twelve experimental diets (D-1 to D-12) in a 4 x 3 factorial design having four protein levels (25, 35, 40 and 45%) and three carbohydrate levels (15, 25 and 35%) were formulated and fed to fingerling rohu, Labeo rohita (5.48 +/- 0.02 g) for 60 days in three replicates at 2% BW per day. The best performance of fish in terms of weight gain (%), specific growth rate (SGR; % per day), feed conversion ratio (FCR) and protein efficiency ratio (PER) was recorded with diet D-9 containing 40% protein and 35% dextrin as a source of dietary carbohydrate. In general, lower protein consumption per kilogram BW was observed at all protein levels with the rise of the dextrin level. The apparent digestibilities of protein and lipid were not affected by the dietary treatments. At the end of the experiment the body composition of animals from all treatments showed lower percentages of moisture and higher percentages of protein as compared to the initial values. A consistent rise in protein retention efficiency was noted in fish fed diets with increasing dextrin levels. The highest protein sparing effect was found in fish fed the diet containing 40% protein and 35% dextrin.

ISSN 0175-8659

DOI 10.1111/j.1439-0426.2009.01326.x

Record 12 of 25

Title [Peptide nutritious composition.]

Patent Number(s) JP2009131184-A

Assignee(s) Terumo Corp.

Inventor(s) Nishitani H; Hattori A; Nagasaka Y

Author(s) [Anon]

Source Japanese Patent Application 2009

Times Cited 0

Abstract A liquid nutrients composition is described which is suitable for improving the nutritional status of malnourished people or people who have undergone surgery. It includes peptide (a N source), carbohydrate (dextrin of DE 10-20 derived from tapioca or waxy corn starch), minerals and vitamins, but does not include lipids. The composition has a viscosity of <=30 mPa s. It shows no turbidity even during refrigeration (>=50% transmittance at 720 nm after storage for 8 wk at 4degreesC), and thus does not require warming after cold storage before it can be ingested.

Record 13 of 25

Title [Powder composition for food.]

Patent Number(s) JP2009136282-A

Assignee(s) Kao Corp.

Inventor(s) Saito A; Kimura T

Author(s) [Anon]

Source Japanese Patent Application 2009

Times Cited 0

Abstract A powder preparation for food use contains a polyoxyethylene sorbitan fatty acid ester and a dextrin. Its specific vol. is 2-9.6 cm3/g and it has powder properties permitting uniform distribution in a food.

Record 14 of 25

Title [Nutritional supplement and health food.]

Patent Number(s) JP2009159873-A

Assignee(s) Nissin Foods Holdings Co. Ltd.

Inventor(s) Matsushiro S; Ueda N; Okujima M

Author(s) [Anon]

Source Japanese Patent Application 2009

Times Cited 0

Abstract A nutritional supplement and health food that each enable natural ingestion of a necessary type and amount of specific components, such as vitamins and amino acids, are described. The nutritional supplement and health food are produced by: using wheat flour and/or starch as the main raw material; adding prescribed nutritional components or a food material, saccharide and/or dextrin, a leavening agent and water to the main raw material; kneading the product to produce a dough; and heat-drying the dough using microwaves.

Record 15 of 25

Title Antioxidant effect of natural plant extracts on the microencapsulated high oleic sunflower oil

Author(s) Ahn, JH; Kim, YP; Seo, EM; Choi, YK; Kim, HS

Source JOURNAL OF FOOD ENGINEERING 84327-334 2008

Times Cited 3

Abstract This study demonstrates that natural plants extract (NPE) such as rosemary, broccoli sprout and citrus can effectively inhibit the lipid oxidation of microencapsulated high oleic sunflower oil (MEHS). By employing a dextrin-coating method with supplements such as milk protein isolates (MPI), soy lecithin and sodium triphosphate emulsifier in the presence of NPE, MEHS with high microencapsulation efficiency was obtained. Similar to that of high oleic sunflower oil (HS) in liquid state, lipid oxidation of MEHS was remarkably reduced under the accelerated storage condition in the presence of a mixture of NPEs rather than a single component of NPE. Specifically, induction period of MEHS was significantly elongated in the presence of NPE when tested by using the Rancimat method, and the peroxide value (POV) and p-anisidine value (ASV) were also significantly lowered by addition of NPE even after storage for 30 days at 60 +/- 1 degrees C. Based on the results, it is anticipated that NPEs find wide applications as an antioxidant for the elevated quality of microencapsulated oil products in food industries. (C) 2007 Elsevier Ltd. All rights reserved.

ISSN 0260-8774

DOI 10.1016/j.jfoodeng.2007.05.029

Record 16 of 25

Title Modulation of maltose preference by selection from dextrin, maltose and glucose diets in zinc-deficient rats

Author(s) Horikawa, Y; Uehara, D; Matsuda, K; Sakaia, SF; Tamaki, N

Source JOURNAL OF NUTRITIONAL SCIENCE AND VITAMINOLOGY 54 (3):203-209 2008

Times Cited 1

Abstract This study examined whether the chain length of glucose in the diet could affect the selection of foods by Zn-adequate and Zn-deficient rats. Dextrin, maltose and glucose were used as sources of carbohydrate in the diet and the selection patterns of the rats were analyzed for 28 d by a 3-choice selection. Diets provided as a set of three either Zn-adequate or Zn-deficient diets were rotated daily. The Zn-adequate control rats selected widely from the three diets throughout the 28 d. In contrast, rats fed a Zn-deficient diet selected exclusively and continuously the dextrin diet or dextrin and glucose diets from the three diets over the experimental periods. The average daily total food intakes of rats fed a Zn-deficient diet were very significantly decreased. The selections of dextrin, maltose and glucose diets in the 3-choice methods of the control rats were 5.7 +/- 1.6(b), 5.8 +/- 2.0(b) and 2.7 +/- 0.9(a) g/d, respectively ($p < 0.05$), and those of the Zn-deficient rats were 6.4 +/- 2.51, 0.8 +/- 1.3(a) and 2.6 +/- 1.41(b) g/d, respectively ($p < 0.05$). The ratios of the selected maltose-diet in the Zn-adequate control and the Zn-deficient rats were 40.8 +/- 13.8 and 9.0 +/- 15.60%, respectively ($p < 0.01$) and those of the dextrin-diet were 40.3 +/- 11.4 and 63.0 +/- 22.3%, respectively ($p < 0.05$). The decreased preference for the maltose-diet in the Zn-deficient rats may reflect the increased selection of the dextrin-diet.

ISSN 0301-4800

Record 17 of 25

Title [Additive for cooked rice, and cooked rice food.]

Patent Number(s) JP2008005718-A

Assignee(s) QP Corp.

Inventor(s) Suda M

Author(s) [Anon]

Source Japanese Patent Application 2008

Times Cited 0

Abstract An additive for cooked rice is described. It comprises plant sterols and egg yolk lipoprotein, as well as dextrin to make the plant sterols adhere to the cooked rice. The cooked rice product prepared using the additive is also disclosed.

Record 18 of 25

Title Nutriose, a low-GR soluble fibre with an outstanding tolerance factor.

Author(s) Lefrance-Millot, C.

Source NutraCos 7 (3):14-16 2008

Times Cited 0

Abstract Properties and benefits of Nutriose(R) 06, a resistant dextrin derived from wheat or maize, are discussed, in relation to: high dietary fibre content; high digestive tolerance; low glycaemic response; and stability in food processes.

ISSN 1720-4011

Record 19 of 25

Title Impact of sugar replacers on cognitive performance and function in rats

Author(s) Rozan, P; Deremaux, L; Wils, D; Nejdi, A; Messaoudi, M; Saniez, MH

Source BRITISH JOURNAL OF NUTRITION 100 (5):1004-1010 2008

Times Cited 0

Abstract Glycaemic responses to the dextrin NUTRIOSE (R) 6 (Dex) and the MALTISORB (R) maltitol (Mal) have been studied previously but their effects oil vigilance and cognitive performances are still not known. The present Study assesses dose-related glycaemic responses following Dex administration and the hypothesis that Dex and Mal could modulate the glycaemic response. improve vigilance Under stress conditions and improve cognitive performances in Fats. The glycaemic responses following Des and corn syrup GLUCIDEX (R) IT 21 (CoS) solutions at 0.3, 0.5 and 1.0g/kg body weight administered by oral administration (experiment 1) and glycaemic responses to three cereal bars (standard (CoS), Dex or Dex/Mal bar) (experiment 2) Were evaluated. Rats having eaten cereal bars were submitted to vigilance and aversive light stimulus avoidance conditioning tests to assess their vigilance and cognitive performances. The first experiment showed that the glycaemic response to both products is dose-related and that CoS induced a glycaemic response three times higher than the Dex response. The second experiment showed the same glycaemic response for the three cereal bar-treated rats. Yet, all increase in the vigilance of Dex/Mal-treated rats as well as a better discrimination between two levers ill the cognitive test for Dex- and Dex/Mal-treated rats were noticed. These results Suggest that the glycaemic response is not the only factor to be considered in predicting the efficiency of a food ingredient oil vigilance and cognitive performances: these behaviours are improved after Dex- and Mal-prepared cereal bar ingestion whereas the glycaemic response does not differ front the CoS-prepared bar.

ISSN 0007-1145

DOI 10.1017/S0007114508971294

Record 20 of 25

Title Safety profile of a food dextrin: Acute oral, 90-day rat feeding and mutagenicity studies

Author(s) Wils, D; Scheuplein, RJ; Deremaux, L; Looten, PH

Source FOOD AND CHEMICAL TOXICOLOGY 46 (10):3254-3261 2008

Times Cited 3

Abstract Nutriose (R) is a glucose polysaccharide produced by the chromatographic separation of a dextrin fraction derived from maize, wheat or other edible starches. Animal safety studies conducted on Nutriose (R) FB are reported. They include an acute oral and a 90-day study in rats and short-term in bacteria (Ames test) and a mutation assay at the TK locus in L5178Y mouse lymphoma cells. An acute oral study in Sprague-Dawley rats established the LD50 as greater than 2000 mg/kg. In a 90-day, oral subchronic study, Sprague-Dawley rats were administered Nutriose (R) FB; in their diet at doses of 0, 1.25%, 2.5% or 5% for 13 weeks. Neither mortality nor significant behavioral changes occurred during the study. The consumption of Nutriose (R) FB did not have any effect on body weight or on feed or water consumption. Blood coagulation and hematology and blood and urine biochemistry did not reveal any toxic effect of the compound. No treatment-related histopathological differences were observed between control and test groups. Adverse clinical observations, including opthalmological observations, were marginal and not considered treatment-related. There was no effect of Nutriose (R) FB on relative or absolute organ weight of rats of either sex, except for the increase in caecum content and caecum mucosa. The increase in caecum weight is considered a physiological adaptation seen after the ingestion of indigestible carbohydrates and is not considered a toxicological effect. The No-Observed-Adverse-Effect-Levels (NOAELs) were established by the highest tested doses: 4.4 g/kg bw/day in males and 6.5 g/kg bw/day in females. Mutation assays in bacteria (Ames tests) and in mammalian cells (tk locus in mouse lymphoma cells) were negative with Nutriose (R) FB.

ISSN 0278-6915

DOI 10.1016/j.fct.2008.06.092

Record 21 of 25

Title NUTRIOSE 06: a useful soluble dietary fibre for added nutritional value.

Author(s) Lefranc-Millot, C.

Source Nutrition Bulletin 33 (3):234-239 2008

Times Cited 0

Abstract An overview is provided of the nutritional properties of the NUTRIOSE(R) 06, a resistant dextrin manufactured from wheat starch by ROQUETTE (Lestrem, France) which exhibits soluble dietary fibre characteristics for adding nutritional value to foods. Aspects considered include: manufacture and chemical characteristics of NUTRIOSE 06; digestion; glycaemic and insulinaemic responses; possible role in body wt. management; prebiotic effects; future research; and technological considerations.

ISSN 1471-9827

DOI 10.1111/j.1467-3010.2008.00711.x

Record 22 of 25

Title Food additives containing combinations of prebiotics and probiotics.

Patent Number(s) US20080254166-A1

Inventor(s) Potter SM

Author(s) [Anon]

Source United States Patent Application Publication 2008

Times Cited 0

Abstract A food additive is described that contains >=1 fibre source selected from digestion-resistant starch, maltodextrin, soluble fibre dextrin, glucose syrup, pullulan, hemicellulose, corn syrup and fructose oliogomer. Each fibre souce is present at a concn. of approx. 1 g/10 g. The additive also contains >=1 probiotic organism selected from Lactobacillus, Bifidobacterium, Enterococcus, Escherichia, Streptococcus and Saccharomyces, at a concn. of >=100 cells/10 g food additive.

Record 23 of 25

Title [Method for reducing GI value of food.]

Patent Number(s) JP2008206527-A

Assignee(s) Ina Food Industry Co. Ltd.

Inventor(s) Uzuhashi Y; Akeo K

Author(s) [Anon]

Source Japanese Patent Application 2008

Times Cited 0

Abstract A method for reducing the GI value of a carbohydrate containing food is described. >=1 water soluble polymers selected from gum Arabic, pullulan, dextrin, tamarind gum, carrageenan, furcelleran, tara gum, konjak mannan, gelan gum, glue plant extract, karaya gum, alginic acid and its salt, soybean polysaccharide, pectin, gelatin and sodium carboxymethylcellulose are added to 1 of wheat flour, rice flour, potato starch, tapioca starch, corn starch and waxy corn starch, kneaded together with water and heat treated.

Record 24 of 25

Title [Dry starch noodle-like food and method for producing the same.]

Patent Number(s) JP2008271920-A

Assignee(s) Nissin Food Products Ltd.

Inventor(s) Yamada T; Numazawa T; Wada S

Author(s) [Anon]

Source Japanese Patent Application 2008

Times Cited 0

Abstract A method for producing instant noodles using starch is described. Pea or potato starch is mixed with saccharide or dextrin and water and gelatinized by heating. The gelatinized starch is spread into a sheet, cut into noodles and dried using hot air.

Record 25 of 25

Title Research progress of resistant dextrin.

Author(s) Yang-Li Xu; Ya-Wei Liu; Wei-Hao Ren

Source Journal of Henan University of Technology Natural Science Edition 29 (4):29 (4) 67-71 29 (4) 67-71 2008

Times Cited 0

Abstract Resistant dextrin is a new type of low-calorie glucan. It has a low mol. wt. and is a water-soluble dietary fibre of potential significance to the food industry. This review considers the preparation, modification and prospects for future development of resistant dextrin as a food ingredient.

ISSN 1673-2383

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Record 1 of 12
Title A low-GR soluble fibre with an outstanding tolerance factor
Author(s) Lefranc-Millot, C
Source AGRO FOOD INDUSTRY HI-TECH 18 (2):24-25 2007
Times Cited 0
ISSN 1722-6996

Record 2 of 12
Title Mineral absorption enhancer, food and feeding stuff.
Patent Number(s) WO2007072756-A1
Assignee(s) Matsutani Chemical Industry Co. Ltd.
Inventor(s) Hara T; Miyazato S; Tagami H; Kishimoto Y; Hara H
Author(s) [Anon]
Source PCT International Patent Application 2007
Times Cited 0
Abstract A mineral absorption enhancer is described which comprises indigestible dextrin or a dextrin derivative as an a.i. Also disclosed is a food or feed comprising the mineral absorption enhancer. The mineral absorption enhancer is: easy to use in a food; resistant to mammalian digestion; and enhances intestinal absorption of a mineral.

Record 3 of 12
Title Shelflife-improving agent for food.
ent Number(s) WO2007108233-A1
Assignee(s) Eisai Food & Chemical Co. Ltd.
Inventor(s) Omura K; Furube K
Author(s) [Anon]
Source PCT International Patent Application 2007
Times Cited 0
Abstract An agent for improving the shelf life of food, particularly prepared meat products, is described. It has a bacteriostatic effect and no adverse effects upon flavour. The agent comprises an amino acid, as well as trehalose and/or dextrin. A method for using the shelf life improver and a food containing it are also described.

Record 4 of 12
Title [Method for producing food composition containing active ingredient in soybean broth.]
Patent Number(s) JP2007181431-A
Assignee(s) Izutsu Miso KK
Inventor(s) Kubo M
Author(s) [Anon]
Source Japanese Patent Application 2007
Times Cited 0
Abstract A food composition that is rich in useful soybean broth components is described. It is produced by adding a vehicle to the raw material liquid of soybean broth and solidifying the broth with a stirring-type thin film evaporator. Dextrin may be used as the vehicle and is added to the soybean broth at a level of 50-100 wt.% on a solid content basis. The food composition may be used as a raw material for extracting components derived from soybeans and livestock feeds, thus enabling food recycling and reducing environmental loading.

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ord 5 of 12
...e [Absorption promoter of mineral, food and fodder.]

Patent Number(s) JP2007191462-A

Assignee(s) Matsutani Chemical Industry Ltd.

Inventor(s) Ichihara T; Miyasato S; Tagami H; Kishimoto Y; Hara H

Author(s) [Anon]

Source Japanese Patent Application 2007

Times Cited 0

Abstract An additive which promotes absorption of minerals in foods and feeds is described. The mineral absorption promoting additive contains a dextrin or a dextrin derivative with low digestibility.

Record 6 of 12

Title [Qualification method for reduced less-digestible dextrin.]

Patent Number(s) JP2007205782-A

Assignee(s) House Foods Corp.; Matsutani Kagaku Kogyo KK

Inventor(s) Yamamoto Y; Hamano T; Hirao N; Sakurai A; Nishihata T

Author(s) [Anon]

Source Japanese Patent Application 2007

Times Cited 0

Abstract A method for determining the digestibility of dextrin in foods is described. The method includes isolating and hydrolysing the dietary fibre of >=3 sugars from the food and finding a ratio between the amount of glucose in hydrolysate and the amount of sorbitol.

Record 7 of 12

Title [Granular food composition and method for producing the same.]

Patent Number(s) JP2007259824-A

Assignee(s) Q P Corp.

Inventor(s) Hamachiyo Y

Author(s) [Anon]

Source Japanese Patent Application 2007

Times Cited 0

Abstract A granular food composition containing phytosterol and dextrin is described, in which the plant sterol is easily dispersible in water or a liquid food. The composition contains a compound material of phytosterol and yolk lipoprotein, and dextrin.

Record 8 of 12

Title Study on microencapsulation technology of natural lycopene and its stability.

Author(s) Sun Chuan-Qing; Hu Xiao-Ming; Zhu Jin-Ling; Dai Bin; Zhao Zhong-Qiong; Xu Yan-Ling

Source Food Science and Technology (2):No. 2, 166-170 No. 2, 166-170 2007

Times Cited 0

Abstract Microencapsulation of natural lycopene by spray drying was studied. The best encapsulation material was found to be gum Arabic and dextrin at a ratio of 1:1 with a ratio of lycopene to capsule material of 1:6. Optimum spray drying conditions were inlet temp. 190degreesC, outlet temp. 65-75degreesC, feed flow rate 4.0 ml/min and inlet air pressure 0.15 MPa.

ISSN 1005-9989

Record 9 of 12

Title [Preparation method for indigestible oligosaccharide-containing composition, and food and drink.]

Patent Number(s) JP2007332277-A

Assignee(s) Matsutani Kagaku Kogyo KK

Inventor(s) Matsuda I; Suzuki H

Author(s) [Anon]

Source Japanese Patent Application 2007

Times Cited 0

Abstract A method for preparing an indigestible oligosaccharide composition by heating a dextrin solution under acidic conditions is described. Foods and beverages including the composition are also disclosed.

Record 10 of 12

Title Effects of simultaneous intakes of indigestible dextrin and diacylglycerol on lipid profiles in rats fed cholesterol diets

Author(s) Nagata, J; Saito, M

Source NUTRITION 22 (4):395-400 2006

Times Cited 3

Abstract Objective: Indigestible dextrin (IDex) and diacylglycerol (DG) are food components with physiologic effects on lipid metabolism. Because simultaneous intake of dietary components with similar physiologic functions may produce a beneficial decrease in risk factors for lifestyle-related diseases, we investigated the physiologic effects of simultaneous IDex and DG intake. Methods: Five-week-old male Wistar rats were fed a cholesterol-containing diet with IDex and DG (separately and combined) for 28 d. Results: IDex significantly decreased serum triacylglycerol concentration and increased the length of small intestinal villi, whereas DG produced significant decreases in serum high-density lipoprotein cholesterol concentration and significant increases in liver cholesterol and triacylglycerol concentrations. Conclusions: IDex intake characteristically decreased serum triacylglycerol concentrations, although no additive or synergistic interaction between DG and IDex was observed. These results indicate that simultaneous intake of food components with similar physiologic functions do, not necessarily produce additive or synergistic physiologic benefits. (c) 2006 Elsevier Inc. All rights reserved.

ISSN 0899-9007

DOI 10.1016/j.nut.2005.08.008

Record 11 of 12

Title Long-term gastrointestinal tolerance of NUTRIOSE (R) FB in healthy men

Author(s) Pasman, W; Wils, D; Saniez, MH; Kardinaal, A

Source EUROPEAN JOURNAL OF CLINICAL NUTRITION 60 (8):1024-1034 2006

Times Cited 11

Abstract Objective: To determine the gastrointestinal (GI) tolerance of NUTRIOSE (R) FB in men. Design: A randomized, placebo-controlled, parallel, double-blind study. Setting: The metabolic ward of TNO Quality of Life. Subjects: Forty-eight subjects started the study: 16 men participated in one of the three treatments. Subjects consumed either 22.5 g of pure maltodextrin (Glucidex (R) 6), or 30 or 45 g of the dextrin NUTRIOSE (R) FB daily for 4 - 5 weeks. Forty-three subjects completed the study (age: 34.7 +/- 8.2 years; BMI 24.9 +/- 3.3 kg m(2)). Measurements: Tolerance of NUTRIOSE (R) FB was examined with a GI complaints questionnaire; effectiveness on colonic flora was examined by faecal analysis; fermentation by breath hydrogen excretion measurement. Furthermore, the effect on body weight (BW), energy intake and blood parameters were examined in the study. Results: Both doses of NUTRIOSE (R) FB were very well tolerated and GI complaints hardly differed from the placebo treatment. No diarrhoea was reported due to NUTRIOSE (R) FB supplementation. In the course of the study, some habituation and adaptation of GI symptoms were found. Fermentation and faecal characteristics (pH and enzyme activity) were significantly positively affected with NUTRIOSE (R) FB treatment. Body weight in both NUTRIOSE (R) FB groups remained stable over time, although the placebo-treated group showed a small increase in BW (Delta day(35-1) 0.8 +/- 1.0 kg) (P = 0.07). However, total food intake and macronutrient composition of the diet remained the same throughout the study. No significant differences were found between the three treatment groups in hunger and satiety scores and food preferences. Conclusions: Long-term supplementation of 30 or 45 g of the dextrin NUTRIOSE (R) FB per day was well tolerated, and may act as a pre-biotic supplement. Sponsorship: TNO Quality of Life was assigned by Roquette Freres to perform the study.

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Record 12 of 12

Title Effect of dietary carbohydrate sources on growth performance and utilization for gibel carp (Carassius auratus gibelio) and Chinese longsnout catfish (Leiocassis longirostris Gunther)

Author(s) Tan, Q; Xie, S; Zhu, X; Lei, W; Yang, Y

Source AQUACULTURE NUTRITION 12 (1):61-70 2006

Times Cited 6

Abstract The nutritional function of monosaccharides, disaccharides and polysaccharides for omnivorous gibel carp and carnivorous Chinese longsnout catfish were investigated and the ability of these two species to utilize carbohydrates was compared. For each species,

triplicate groups of fish were assigned to each of five groups of isoenergetic and isonitrogenous experimental diets with different carbohydrate sources: glucose, sucrose, dextrin, soluble starch (acid-modified starch) and alpha-cellulose. The carbohydrates were included at 60 g kg(-1) in Chinese longsnout catfish diets and at 200 g kg(-1) in gibel carp diets. A growth trial was carried out in a recirculation system at 27.8 +/- 1.9 degrees C for 8 weeks. The results showed that fish with different food habits showed difference in the utilization of carbohydrate sources. For gibel carp, better specific growth rate (SGR) and feed efficiency (FE) were observed in fish fed diets containing soluble starch and cellulose, but for Chinese longsnout catfish, better SGR and FE were observed in fish fed diets containing dextrin and sucrose. Apparent digestibility coefficient of dry matter (ADC(d)) and apparent digestibility coefficient of energy (ADC(e)) were significantly affected by dietary carbohydrate sources in gibel carp. ADC(d) and ADC(e) significantly decreased as dietary carbohydrate complexity increased in Chinese longsnout catfish except that glucose diet had medium ADC(d) and ADC(e). In both species, no significant difference of apparent digestibility coefficient of protein was observed between different carbohydrate sources. Dietary carbohydrate sources significantly affected body composition, and liver phosphoenolpyruvate carboxykinase (PEPCK), pyruvate kinase (PK), glucose 6-phosphate dehydrogenase (G6PD) and malic enzyme (ME) activities also varied according to dietary carbohydrate complexity. Fish with different food habits showed different abilities to synthesize liver glycogen, and the liver glycogen content in gibel carp was significantly higher than in Chinese longsnout catfish. The influence of carbohydrate source on gluconeogenesis and lipogenesis was also different in the two fish species.

ISSN 1353-5773

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NOSB COMMITTEE RECOMMENDATION

Form NOPLIST1. Committee Transmittal to NOSB

For NOSB Meeting: Spring 2008 | **Substance:** Dextrin 08-10 pp2-16

Committee: Crops X Livestock ☐ Handling ☐ **Petition is for: Dextrin to be used as a binder in seed coatings with placement on the National List § 205.601(n) as seed preparations**

A. Evaluation Criteria (Applicability noted for each category; Documentation attached) — **Criteria Satisfied? (see B below)**

1.	Impact on Humans and Environment	Yes X	No ☐	N/A ☐
2.	Essential & Availability Criteria	Yes ☐	No X	N/A ☐
3.	Compatibility & Consistency	Yes ☐	No X	N/A ☐
4.	Commercial Supply is Fragile or Potentially Unavailable as Organic (only for 606)	Yes ☐	No ☐	N/A X

B. Substance Fails Criteria Category: 2 & 3 Comments: Non-synthetic starches are currently being used successfully for seed coatings. Using nonessential synthetic substances is not compatible with organic farming.

C. Proposed Annotation (if any): _____

Basis for annotation: To meet criteria above: _____ Other regulatory criteria: _____ Citation: _____

D. Recommended Committee Action & Vote (State Actual Motion): Dextrin to be used as a binder in the seed coatings with placement on the National List **§ 205.601**(n) As Seed Preparation.

Motion by: Gerald Davis Seconded: Kevin Engelbert Yes: 0 *No:* 4 *Absent:* 2 *Abstain:* _____

Crops	X	Agricultural		Allowed[1]	
Livestock		Non-Synthetic		Prohibited[2]	
Handling		Synthetic	X	Rejected[3]	X
No restriction		Commercially Un-Available as Organic[1]		Deferred[4]	

1) Substance voted to be added as "allowed" on National List to § 205._____with Annotation (if any) _____

2) Substance to be added as "prohibited" on National List to § 205._____with Annotation (if any) _____

Describe why a prohibited substance:_____

3) Substance was rejected by vote for amending National List to § 205. 601(n) Describe why material was rejected:_____

Substance fails evaluation criteria 2 and 3 (see comments listed above in section B.)

4) Substance was recommended to be deferred because _____

_____ If follow-up needed, who will follow up _____

E. Approved by Committee Chair to transmit to NOSB:

Gerald Davis — **Committee Chair**

3/27/2008 — **Date**

NOSB EVALUATION CRITERIA FOR SUBSTANCES ADDED TO THE NATIONAL LIST

Category 1. Adverse impacts on humans or the environment? **Substance – Dextrin**

Question	Yes	No	N/A[1]	Documentation (TAP; petition; regulatory agency; other)
1. Are there adverse effects on environment from manufacture, use, or disposal? [§205.600 b.2]			X	
2. Is there environmental contamination during manufacture, use, misuse, or disposal? [§6518 m.3]		X		Non-toxic, biodegradable, no contamination events known Petition p. 4
3. Is the substance harmful to the environment? [§6517c(1)(A)(i);6517(c)(2)(A)i]		X		Not expected to persist in the environment. No studies done Petition p.4
4. Does the substance contain List 1, 2, or 3 inerts? [§6517 c (1)(B)(ii); 205.601(m)2]		X		
5. Is there potential for detrimental chemical interaction with other materials used? [§6518 m.1]		X		Inert carbohydrate substance not expected to interact with other substances. No definitive studies done Petition p. 4
6. Are there adverse biological and chemical interactions in agro-ecosystem? [§6518 m.5]		X		None known
7. Are there detrimental physiological effects on soil organisms, crops, or livestock? [§6518 m.5]		X		See 6
8. Is there a toxic or other adverse action of the material or its breakdown products? [§6518 m.2]		X		Dextrin is an incompletely hydrolyzed starch susceptible to degradation Petition p. 4
9. Is there undesirable persistence or concentration of the material or breakdown products in environment?[§6518 m.2]		X		See 6
10. Is there any harmful effect on human health? [§6517 c (1)(A)(i) ; 6517 c(2)(A)i; §6518 m.4]		X		FDA affirmed as GRAS (Generally Recognized As Safe) for use in food at levels not to exceed current good manufacturing practices Petition p. 3
11. Is there an adverse effect on human health as defined by applicable Federal regulations? [205.600 b.3]			X	
12. Is the substance GRAS when used according to FDA's good manufacturing practices? [§205.600 b.5]			X	
13. Does the substance contain residues of heavy metals or other contaminants in excess of FDA tolerances? [§205.600 b.5]			X	

[1]If the substance under review is for crops or livestock production, all of the questions from 205.600 (b) are N/A—not applicable.

Category 2. Is the Substance Essential for Organic Production? Substance - Dextrin

Question	Yes	No	N/A[1]	Documentation (TAP; petition; regulatory agency; other)
1. Is the substance formulated or manufactured by a chemical process? [6502 (21)]	X			Dextrin is formed by spraying powdered starch with a dilute acid solution, usually hydrochloric acid. Then pre-drying takes place followed by heating to 95 C to 195 C depending on the properties desired. Petition p. 3
2. Is the substance formulated or manufactured by a process that chemically changes a substance extracted from naturally occurring plant, animal, or mineral, sources? [6502 (21)]	X			See 1
3. Is the substance created by naturally occurring biological processes? [6502 (21)]		X		
4. Is there a natural source of the substance? [§205.600 b.1]			X	
5. Is there an organic substitute? [§205.600 b.1]			X	
6. Is the substance essential for handling of organically produced agricultural products? [§205.600 b.6]			X	
7. Is there a wholly natural substitute product? [§6517 c (1)(A)(ii)]	X			Nonsynthetic starches are currently being used in organically approved seed coating technologies. Lecithin has also been used in another organically approved seed coating.
8. Is the substance used in handling, not synthetic, but not organically produced? [§6517 c (1)(B)(iii)]		X		
9. Is there any alternative substances? [§6518 m.6]	X			See # 7
10. Is there another practice that would make the substance unnecessary? [§6518 m.6]	X			Using planters that do not require seed coating would make the substance unnecessary, for example, air planters.

[1]If the substance under review is for crops or livestock production, all of the questions from 205.600 (b) are N/A—not applicable.

Category 3. Is the substance compatible with organic production practices? Substance - Dextrin

Question	Yes	No	N/A[1]	Documentation (TAP; petition; regulatory agency; other)
1. Is the substance compatible with organic handling? [§205.600 b.2]			X	
2. Is the substance consistent with organic farming and handling? [§6517 c (1)(A)(iii); 6517 c (2)(A)(ii)]		X		The use of nonessential synthetic substances is not compatible with organic farming and handling, nor compatible with organic principles
3. Is the substance compatible with a system of sustainable agriculture? [§6518 m.7]	X			Non-toxic synthetics could be compatible with sustainable agriculture, and there are no known instances of harmful impacts. Petition p.
4. Is the nutritional quality of the food maintained with the substance? [§205.600 b.3]			X	
5. Is the primary use as a preservative? [§205.600 b.4]			X	
6. Is the primary use to recreate or improve flavors, colors, textures, or nutritive values lost in processing (except when required by law, e.g., vitamin D in milk)? [205.600 b.4]			X	
7. Is the substance used in production, and does it contain an active synthetic ingredient in the following categories: a. copper and sulfur compounds;		X		
b. toxins derived from bacteria;		X		
c. pheromones, soaps, horticultural oils, fish emulsions, treated seed, vitamins and minerals?		X		
d. livestock parasiticides and medicines?		X		
e. production aids including netting, tree wraps and seals, insect traps, sticky barriers, row covers, and equipment cleaners?		X		

[1]If the substance under review is for crops or livestock production, all of the questions from 205.600 (b) are N/A—not applicable.

Category 4. Is the commercial supply of an agricultural substance as organic, fragile or potentially unavailable? [§6610, 6518, 6519, 205.2, 205.105 (d), 205.600 (c) 205.2, 205.105 (d), 205.600 (c)]

Substance - _____

Question	Yes	No	N/A	Comments on Information Provided (sufficient, plausible, reasonable, thorough, complete, unknown)
1. Is the comparative description provided as to why the non-organic form of the material /substance is necessary for use in organic handling?			X	
2. Does the current and historical industry information, research, or evidence provided explain how or why the material /substance cannot be obtained organically in the appropriate **form** to fulfill an essential function in a system of organic handling?			X	
3. Does the current and historical industry information, research, or evidence provided explain how or why the material /substance cannot be obtained organically in the appropriate **quality** to fulfill an essential function in a system of organic handling?			X	
4. Does the current and historical industry information, research, or evidence provided explain how or why the material /substance cannot be obtained organically in the appropriate **quantity** to fulfill an essential function in a system of organic handling?			X	
5. Does the industry information provided on material / substance non-availability as organic, include (but not limited to) the following: a. Regions of production (including factors such as climate and number of regions);			X	
b. Number of suppliers and amount produced;			X	
c. Current and historical supplies related to weather events such as hurricanes, floods, and droughts that may temporarily halt production or destroy crops or supplies;			X	
d. Trade-related issues such as evidence of hoarding, war, trade barriers, or civil unrest that may temporarily restrict supplies; or			X	
e. Are there other issues which may present a challenge to a consistent supply?			X	