Patents

Process for producing alkyl esters from a vegetable or animal oil and an aliphatic monoalcohol
Bournay, Laurent and others, Institut Francais Du Petrole, Rueil Malmaison, Cedex, France
US6878837B2, Issued April 12, 2005

The invention relates to the production of alkyl esters derived from vegetable or animal oils, in particular methyl esters derived from rapeseed oil. Alkyl esters of fatty acids, and high purity glycerin, are produced using a process comprising a step of transesterification reactions between a vegetable or animal oil and an aliphatic monoalcohol employing a heterogeneous catalyst, for example based on zinc alumininate, the water content in the reaction medium being controlled to a value that is below a given limiting value.

Appetite suppressing diet bar
Pimentel, Julio Lionel, Buford, Georgia
US6884454B2, Issued April 26, 2005

The present invention relates to a diet bar having a satiety effect on humans when consumed prior to any meal. This diet bar is composed of whole soybean containing trypsin inhibitor that increase CCK levels, which suppress appetite; and medium chain fatty acids or medium chain triglycerides that increase the level of beta-hydroxy butyrate which also suppress food intake. A method to decrease feed intake in humans by ingesting a diet bar comprising of whole soybean and medium chain triglycerides and/or medium chain fatty acids, said bar containing an adequate level of nutrients to serve as a meal.

Process for the stabilization of acylglycerols comprising high amounts of omega-3 polyunsaturated fatty acids by means of γ-cyclodextrin
Schmid, Gerhard and others, Wacker Biochem Corp., Adrian, Michigan
US6878696B2, Issued April 12, 2005

A method to stabilize acylglycerols comprising omega-3 (n-3) polyunsaturated fatty acids against oxidative degradation characterized in that γ-cyclodextrin is mixed either batchwise or continuously with the acylglycerol comprising omega-3 polyunsaturated fatty acids, thus forming a γ-CD/acylglycerol complex.

Process for producing alkylester of fatty acid in a single-phase continuous process
Yoo, Jeong-Woo, c/o Knobbe Martens Olson & Bear LLP, Irvine, California
US20050080280A1, Issued April 1, 2005

The present invention relates to a process for preparing an alkylester of fatty acid with high purity via one-step continuous process by reacting an animal fat and/or vegetable oil with a lower alcohol in the presence of alkali catalyst by passing through a continuous tubular reactor while maintaining a single-phase, removing residual lower alcohol from the reaction mixture and removing residual glycerin, catalyst, etc. by phase separation. In accordance with the present invention, an alkylester of fatty acid can be produced with a high yield of 97% or more via one-step continuous process in a continuous tubular reactor without any limitation in flow types by reacting an animal fat and/or vegetable oil with a lower alcohol in the presence of alkali catalyst and carrying out a simple separating process.

Process of extracting small molecular ingredients from biological materials under super high pressure
Zhang, Shouqin, c/o Alix Yale and Ristas LLP, Hartford, Connecticut
US20050079481A1, Issued April 1, 2005

The process of extracting small molecular ingredients from biological materials under super high pressure is a process which makes use of super high pressure to extract small molecular active ingredients from biological materials, especially natural products, which mainly consists of extracting the mixture of solid raw material and extraction solvent under increased pressure. Said process comprises the following steps: the step of pretreatment, crash and formulation; the step of closure, charging the formulated mixture of raw material and extraction solvent into high pressure container, then closing the high pressure container; the step of increasing pressure, increasing the pressure of the high pressure container from 100 Mpa to the pre-defined pressure of 1000 Mpa; the step of holding pressure, holding the predefined pressure for 3-30 minutes; the step of releasing pressure, releasing the pressure of the high pressure container to normal pressure, removing the mixture. The present invention modifies the traditional extraction process of small molecular ingredients in biological materials, which not only makes extracts avoiding heating, but also has the advantages of high extraction yields, rapid extraction and broad extraction solvents.

Process for preparing blown vegetable oil
South Dakota Soybean Processors, Volga, South Dakota, Mahlum, Larry
EP1259584B1, Issued April 6, 2005

A method for partially refining a crude vegetable oil utilizing physical refining techniques is described. The crude vegetable oil is first degummed by either (1) allowing the crude oil to settle over a period of time, such as twenty days, so that the oil becomes stratified into at least two layers, wherein one layer comprises gums with low oil content and a second layer comprises oil containing only a fraction of the gums originally present and then separating the oil layer from the gum layer, or (2) heating the crude oil to a temperature of about 270-300°F with agitation and then allowing the crude oil to settle for a period of time until the oil becomes stratified into at least two layers. The degummed oil is then aerated and agitated while being maintained at a temperature of 170-180°F for a time period sufficient to obtain a desired oil viscosity. The resulting partially refined oil is suitable for use in industrial applications such as the preparation of urethane foams.

Fatty acid esters and uses thereof
Pollock, Charley M. and others, International Paper Co., Loveland, Ohio
US20050075254A1, Issued April 7, 2005

The present invention is directed to polyol esters. This invention also relates to the use of these esters in fuels, oils and lubricant packages for engines and in metal working fluids, where the esters enhance the performance properties of the composition. Esters formed from polyol, C12-C28 branched chain fatty acid, and/or C12-C28 cyclic fatty acid are useful as friction modifiers for lubricants. Monomer is a preferred source for these fatty acids.

Method for fractionating grease trap waste and uses of fractions therefrom
Garro, Juan, Miguel and others, c/o McDermott Will & Emery LLP, Washington, D.C.
US20050085653A1, Issued April 21, 2005

A process for producing unsaturated and saturated free fatty acid from trap oils, trap greases, brown greases and grease trap waste as starting material. The process consist in subjecting the starting material to a pretreatment, a first purification step, a fractional step, a second purification step and eventually a hydrogenation step. Methyl esters of unsaturated and saturated free fatty acids, oleic acid and stearin is obtained from this process.
Process for the separation of saturated alkyl branched fatty acids
Soeterboek, Aloisius, Ronald, Marie and others, Unichema Chemie B.V. and ICI America Inc, Buurtje, Netherlands and Bridgewater, New Jersey
WO2005030693A1, Issued April 17, 2005
The present invention relates to a process for the separation of alkyl branched fatty acids from linear fatty acids, and in particular to the separation of saturated alkyl branched fatty acids. A process for the separation of alkyl branched C12 to C24 fatty acids from a fatty acid mixture comprising linear and alkyl branched C12 to C24 fatty acids comprises: (i) optionally hydrogenating the fatty acid mixture, (ii) cooling the mixture to form crystals, and (iii) separating the alkyl branched C12 to C24 fatty acids from the mixture by dry fractionation.

Modified oilseed material with a high gel strength
Porter, Michael, A., Cargill, Inc., Wayzata, Minnesota,
US20050112254A1, Published May 26, 2005
Modified oilseed material with a high gel strength is described. The modified oilseed material can be utilized in a variety of nutritional applications, including the preparation of protein supplemented food products such as processed meat products. The modified oilseed material typically includes at least 85 wt. % protein (dry solids basis) and has excellent functional properties. For example, the modified oilseed material can include at least about 40 wt. % of the protein has an apparent molecular weight of greater than 300 kDa, a gel breaking strength of at least 0.50 N, and/or the protein has a MW50 of at least about 200 kDa.

Method of producing a tocopherol product
Gubler, Scott and others, Holme Roberts & Owen, LLP, Salt Lake City, Utah
US20050113444A1, Published May 26, 2005
A method for making a tocopherol product is provided. The method includes providing a desired amount of tocopheryl succinate substance and mixing a binder with the tocopheryl succinate substance to produce a mixture. A solution is sprayed on the mixture while contained in a granulator. The solution is then mixed with the mixture in the granulator. The mixture is dried so that a predetermined amount of the moisture content from the mixture is removed.

Published Patent Applications

Use of functionalized mesoporous silicates to esterify fatty acids and transesterify oils
Lin, V. and Radu, D., Schwegman, Lundberg, Woessner & Kluth, P.A., Minneapolis, Minnesota
US20050107624A1, Published May 19, 2005
The present invention provides a method to prepare a fatty acid lower alkyl esters from a feedstock, such as a vegetable or an animal oil, comprising one or more fatty acid glycerol esters such as mono-, di- or tri-glycerides, and free fatty acids, comprising combining the feedstock, a lower alcohol and an acidic mesoporous silicate under conditions wherein the mesoporous silicate catalyzes the formation of the corresponding fatty acid lower alkyl ester of the free fatty acids an optionally glycerol.

Novel wax for reducing mar and abrasion in inks and coatings
Hassan, A. and Borsinger, G., HRD CORP., Houston, Texas
WO2005042655A2, Published May 12, 2005
Waxes prepared from hydrogenated plant oils, such as castor and soybean, are formulated into aqueous ink and paper coating compositions. Ink compositions comprising these waxes and evaluated for their resistance to mar and abrasion achieved rub resistance and slip performance comparable to compositions utilizing conventional wax additives, which are generally derived from petroleum. The waxes in the inventive compositions have a low iodine value (ranging from approximately 1 to approximately 5), and a melting point between approximately 120°–190° F (Mettler Drop Point). These naturally derived waxes are used as an alternative to petroleum and synthetically derived waxes in the manufacture of inks and coatings for paper and cellulose products.

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