

Free ebook Edible oils fats and waxes [PDF]

identify waxes as being mixtures of long chain esters and write the general structure for such compounds identify fats and oils as being triacylglycerols and write a general structure for such compounds relate the physical properties of animal fats and vegetable oils to their structures animals use fats for long term energy storage because they are far less highly oxidized than carbohydrates and provide about six times as much energy as an equal weight of stored hydrated glycogen hydrolysis of a fat or oil with aqueous NaOH yields glycerol and three fatty acids although they appear different animal fats like butter and lard are solids whereas vegetable oils like corn and peanut oil are liquid their structures are closely related chemically fats and oils are triglycerides or triacylglycerols triesters of glycerol with three long chain carboxylic acids called fatty acids animals use fats for oils fats and waxes are used in biological systems primarily for energy storage fats oils or for protection waxes fats and waxes are solid at room temperature while oils are liquid fats and waxes are saturated while liquids are unsaturated waxes are another biologically important category of lipids wax covers the feathers of some aquatic birds and the leaf surfaces of some plants where its hydrophobic water repelling properties prevent water from sticking to or soaking into the surface waxes are a type of long chain nonpolar lipid natural waxes are typically esters of fatty acids and long chain alcohols waxes are synthesized by many animals and plants animal wax esters are typically derived from a variety of carboxylic acids and fatty alcohols lipids are a class of macromolecules that are nonpolar and hydrophobic in nature major types include fats and oils waxes phospholipids and steroids fats are a stored form of energy and are also known as triacylglycerols or triglycerides fats are made up of fatty acids and either glycerol or sphingosine waxes steroids phospholipids and fats are the most common types of lipid groups fats have glycerol in addition to three fatty acids the structure of the fatty acids determines whether or not the fat is considered saturated or unsaturated waxes waxes are a type of lipid that are esters formed from long chain alcohols and fatty acids known for being solid at room temperature and water repellent they serve various biological functions such as protection and waterproofing in plants and animals lipid waxes fatty acids esters a second group of neutral lipids that are of physiological importance though they are a minor component of biological systems are waxes essentially waxes consist of a long chain fatty acid linked through an ester oxygen to a long chain alcohol a lipid is any of various organic compounds that are insoluble in water they include fats waxes oils hormones and certain components of membranes and function as energy storage molecules and chemical messengers waxes are lipids made up of very long chain fatty acids joined to alcohols by ester bonds that are insoluble in water but soluble in organic polar solvents the big difference between waxes and triglycerides is that in waxes there is only one fatty acid joined to a single alcohol because alcohols only have one available hydroxyl group unlike fats and oils modify product texture in the preparation of foods act as heat transfer media in food frying carry flavors colors and oil soluble vitamins improve mouthfeel provide a sensation of product richness and induce satiety identify waxes as being mixtures of long chain esters and write the general structure for such compounds identify fats and oils as being triacylglycerols and write a general structure for such compounds relate the physical properties of animal fats and vegetable oils to their structures fats often are of animal origin beef tallow pork lard and butter fat or hardened hydrogenated interesterified or thermally fractionated vegetable oils whereas oils are extracted from plant seeds or tissues or fish fats oils and waxes are the naturally occurring esters of long straight chain carboxylic acids they belong to the saponifiable group of lipids lipids are biologically produced materials which are relatively insoluble in water but soluble in organic solvents benzene chloroform acetone ether etc identify waxes as being mixtures of long chain esters and write the general structure for such compounds identify fats and oils as being triacylglycerols and write a general structure for such compounds relate the physical properties of animal fats and vegetable oils to their structures waxes waxes are esters of fatty acids with long chain monohydric alcohols one hydroxyl group natural waxes are often mixtures of such esters and may also contain hydrocarbons plant waxes on the surfaces of leaves stems flowers and fruits protect the plant from dehydration and invasion by harmful microorganisms where are fats and oils fats are lipids having saturated fatty acids while oils have unsaturated fatty acids in them what are waxes waxes are a type of lipid that have esters of long chain saturated and unsaturated fatty acids with long chain alcohols examples include beeswax carnauba wax etc what is the function of fats and oils fats are esters of fatty acids with glycerol and are solid at room temperature on the other hand waxes are esters of fatty acids other than glycerol they contain one mole of long chain fatty acid esterified with one mole of high molecular weight monohydroxy alcohol

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animals use fats for long term energy storage because they are far less highly oxidized than carbohydrates and provide about six times as much energy as an equal weight of stored hydrated glycogen hydrolysis of a fat or oil with aqueous naoh yields glycerol and three fatty acids

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although they appear different animal fats like butter and lard are solids whereas vegetable oils like corn and peanut oil are liquid their structures are closely related chemically fats and oils are triglycerides or triacylglycerols triesters of glycerol with three long chain carboxylic acids called fatty acids animals use fats for

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oils fats and waxes are used in biological systems primarily for energy storage fats oils or for protection waxes fats and waxes are solid at room temperature while oils are liquid fats and waxes are saturated while liquids are unsaturated

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waxes are another biologically important category of lipids wax covers the feathers of some aquatic birds and the leaf surfaces of some plants where its hydrophobic water repelling properties prevent water from sticking to or soaking into the surface

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waxes are a type of long chain nonpolar lipid natural waxes are typically esters of fatty acids and long chain alcohols waxes are synthesized by many animals and plants animal wax esters are typically derived from a variety of carboxylic acids and fatty alcohols

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lipids are a class of macromolecules that are nonpolar and hydrophobic in nature major types include fats and oils waxes phospholipids and steroids fats are a stored form of energy and are also known as triacylglycerols or triglycerides fats are made up of fatty acids and either glycerol or sphingosine

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waxes steroids phospholipids and fats are the most common types of lipid groups fats have glycerol in addition to three fatty acids the structure of the fatty acids determines whether or not the fat is considered saturated or unsaturated

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waxes waxes are a type of lipid that are esters formed from long chain alcohols and fatty acids known for being solid at room temperature and water repellent they serve various biological functions such as protection and waterproofing in plants and animals

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lipid waxes fatty acids esters a second group of neutral lipids that are of physiological importance though they are a minor component of biological systems are waxes essentially waxes consist of a long chain fatty acid linked through an ester oxygen to a long chain alcohol

lipid definition structure examples functions types

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a lipid is any of various organic compounds that are insoluble in water they include fats waxes oils hormones and certain components of membranes and function as energy storage molecules and chemical messengers

lipids phospholipids waxes and steroids

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waxes are lipids made up of very long chain fatty acids joined to alcohols by ester bonds that are insoluble in water but soluble in organic polar solvents the big difference between waxes and triglycerides is that in waxes there is only one fatty acid joined to a single alcohol because alcohols only have one available hydroxyl group unlike

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fats and oils modify product texture in the preparation of foods act as heat transfer media in food frying carry flavors colors and oil soluble vitamins improve mouthfeel provide a sensation of product richness and induce satiety

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fats often are of animal origin beef tallow pork lard and butter fat or hardened hydrogenated interesterified or thermally fractionated vegetable oils whereas oils are extracted from plant seeds or tissues or fish

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fats oils and waxes are the naturally occurring esters of long straight chain carboxylic acids they belong to the saponifiable group of lipids lipids are biologically produced materials which are relatively insoluble in water but soluble in organic solvents benzene chloroform acetone ether etc

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waxes waxes are esters of fatty acids with long chain monohydric alcohols one hydroxyl group natural waxes are often mixtures of such esters and may also contain hydrocarbons plant waxes on the surfaces of leaves stems flowers and fruits protect the plant from dehydration and invasion by harmful microorganisms

simple lipids fats oils and waxes a level biology

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where are fats and oils fats are lipids having saturated fatty acids while oils have unsaturated fatty acids in them what are waxes waxes are a type of lipid that have esters of long chain saturated and unsaturated fatty acids with long chain alcohols examples include beeswax carnauba wax etc what is the function of fats and oils

differentiate between fats and waxes toppr

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fats are esters of fatty acids with glycerol and are solid at room temperature on the other hand waxes are esters of fatty acids other than glycerol they contain one mole of long chain fatty acid esterified with one mole of high molecular weight monohydroxy alcohol

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