

Glossary

Aldehyde: Whatever type of organic compound that possesses the CHO group. It is a subproduct of destroyed oxidation.

Alkali-Whatever soluble substance that can neutralize acids. It has a pH of more than 7.0.

Antioxidant-Compounds that can inhibit the development of the oxidation that is the cause of rancidity of finished products.

Crystals-When triglyceride molecules of a fat pass from the liquid state to a solid as a result of the decrease of temperature, they freeze and are found in three different forms. The forms of crystal exist only when the fat is found in the solid state. They can affect the physical properties or functions of the fat.

Diglyceride-A compound with a glycerol molecule attached to two fatty acids.

Emulsifier-A material that lowers the surface energy between two immiscible phases (e.g., oil and water), thus facilitating the dispersion of one phase into the other.

Emulsion-A homogeneous dispersion of two dissimilar immiscible liquid phases. If oil is dispersed in water, it is an oil-in-water (O/W) emulsion. If water is dispersed in oil, it is a water-in-oil emulsion (W/O).

Glycerides-Compounds that have one or more fatty acids attached to glycerol.

Glycerol-A three-carbon chain, with each carbon containing an alcohol group. One, two, or three fatty acids may be attached to glycerol.

Hydrogenation-The chemical process of adding hydrogen atoms to the double bonds between carbon atoms in a fatty acid. The result is the conversion of a double bond (unsaturated) to a single bond (saturated).

Hydrolysis-A chemical reaction in which a substance reacts with water so as to be changed into one or more other substances, such as natural fats into glycerol and fatty acids

Lecithins-A phospholipid found in egg yolk and soybeans and also used as a food ingredient. It is a surfactant that can stabilize emulsions.

Lipids-A class of organic compounds consisting of the fats and other substances of similar properties that are insoluble in water, soluble in organic (nonpolar) solvents such as ether or hexane. Triglycerides, cholesterol, and vitamin A are examples.

Melting point-The temperature at which a solid turns into a liquid. Because they are a mixture of compounds, fats appear to melt over a range of temperature. A specific melting temperature is determined by warming a fat and recording the temperature at which an observable event coinciding with conversion to a liquid occurs.

Miscella-The mixture of solvent and oil that occurs during the solvent extraction of oil from

oil seeds.

Monoglyceride-A compound with a glycerol molecule attached to one fatty acid.

Monounsaturated-A fatty acid that has one double bond (C=C) in the carbon chain. Oleic acid is an example.

Oxidation-A chemical reaction in which the double bond on a lipid molecule reacts with oxygen to produce a variety of chemical products. The consequences of this reaction are loss of nutritional value and formation of the off-flavors associated with rancidity.

Peroxide value-A number that indicates the level of peroxides in a fat or oil that has developed as a result of oxidation. Peroxides are considered intermediates in the lipid oxidation reaction scheme.

Phospholipid-A natural component of fat that has a phosphate ester associated with the glyceride. It is a surfactant that aids emulsification.

Plasticity-A physical property of a fat that describes how soft, pliable, and moldable it is at a given temperature.

Polar lipids-Fat components that are more like water and less like fat in their solubility properties. Introduction of oxygen or nitrogen atoms into lipid molecules makes them more polar.

Polyunsaturated-A fatty acid that has more than one double bond (C=C) in the carbon chain. Linoleic acid is an example.

Saturated-A carbon chain in which the carbons are connected to each other by single bonds, drawn as C-C. It has no carbon-to-carbon double bonds.

Shortening-A type of fat used in baking or frying. The name comes from the ability to tenderize or "shorten" baked products.

Stearin-A white, crystalline substance found in the solid portion of most animal and some vegetable fats.

Surfactant-A chemical compound that lowers the surface tension between two dissimilar phases such as oil and water.

Tocopherol-A class of fat soluble compounds that have vitamin E activity and function as antioxidants.

Triglyceride-Three fatty acids attached to a glycerol molecule. If the three fatty acids are the same, it is a simple triglyceride; if they are different from each other, it is a mixed triglyceride. Mixed triglycerides are the most common chemical components in fats and oils.