

How Lecithins Work

Lecithins are used mainly as emulsifiers. They are surface-active; simultaneous hydrophilic (water-loving) and hydrophobic (water-repelling) properties enable lecithins to make stable blends of materials that otherwise do not mix easily and tend to separate. The amount of lecithin needed to blend substances such as the soybean oil and water in margarine, or the pigment in latex paint, depends on the overall fat content in the end product.

Lecithins also have characteristics that help:

- Disperse and suspend powders into liquids
- Control the viscosity of liquids and semi-liquids
- Prevent foods from sticking to contact surfaces
- Prevent adhesion of food products to one another

Lecithins can be:

Emulsifiers

Emulsions are produced by dispersing normally unmixable material into another by mixing, colloidal milling or homogenization. The surface-active qualities of lecithins make them effective emulsifying agents that reduce mixing time and maintain the stability of the dispersion.

Wetting and Instantizing Agents

Lecithins provide fast, complete wetting of powders into aqueous systems. Low-fat powders require lecithins with lower HLB values (see explanation on page 8 or refer to our Instantizing brochure) to retard wetting rates; fatty powders require higher HLB values.

Viscosity Modifiers

Lecithins greatly reduce the surface tension of fats, enabling particles of chocolate, sugar and milk products, for example, to be coated, improving flow and mixability. Typical usage levels are 0.2 - 0.6% of total product weight.

Release Agents

Lecithins promote separation of food from contact surfaces in dip tanks and spray applications. Water-filled dip tanks usually contain up to 10% de-oiled lecithin; pan or belt-release applications consist mainly of vegetable oil with approximately 2% lecithin.

Separating Agents

When applied directly to products such as processed cheese slices, lecithins help form a stable film barrier that prevents them from sticking together. When used directly in products such as baked goods, they enhance the ability to cut and shape products and reduce sticking to mixing vessels.

Extrusion Aids

Extrusion technology uses lecithin as a processing aid to enhance extrusion rates and throughput, resulting in more economical production. Examples of extruded products include snack foods, pasta, sprinkles and pet treats.

Anti-Dusting Agents

Inclusion of ALCOLEC® lecithins enhances wettability by reducing static interface.

Shelf-Life Aids

Incorporation of ALCOLEC lecithin with the amylose portion of wheat flour slows starch retrogradation. This process in effect extends shelf life.

Nutritional Supplements

Lecithins have nutritional value of their own. The phospholipids they contain, such as phosphatidylcholine (PC), phosphatidylserine (PS) and derivatives such as glycerophosphocholine (alpha-GPC) have been widely acknowledged by nutritionists, and substantiated by numerous human clinical studies, as beneficial to the function of the liver, brain, heart, and other organs. American Lecithin Company offers these specialty phospholipid fractionations through the LIPOID® brand of nutritional ingredients. The LIPOID products are available in various formulations, developed specifically for use in softgels, tablets, hardcap and powdered (RTD) nutritional supplements. For more information, refer to the “Phospholipids for Nutrition” brochure or visit www.americanlecithin.us

