

Lecithins – Properties and Applications

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Lecithins are a technical and commercially important group of food-grade emulsifiers with manifold technological functions in food, feed, pharmaceutical and technical industries.

Lecithins are derived from vegetable oil seeds, during decades primarily from soya beans. In the last years the focussed processing from sunflower kernels and rape seed meets a growing interest to fulfilling the food processors needs for IP sourced lecithin and labelling. Since soft seeds are often processed by combined expelling and extraction, the phospholipid composition of soft seed lecithins is slightly different to soya extracted lecithins. The degumming conditions effect the phospholipid composition as well.

The requirements on consistent emulsifying, emulsion-stabilizing and nutritional properties are achieved by adjustment of standard qualities and a range of lecithin modification processes such as alcohol fractionation, enzymatic hydrolysis, acetylation and hydroxylation. These modifications give lecithins with tailor-made phospholipid compositions with adapted hydrophilic–lipophilic balance and subsequently improved oil-in-water emulsifying properties.

Oil-free "pure" lecithins in powder and granular form are used because of convenient dosage, neutral taste and enhanced O/W emulsifying performance. These lecithins and phosphatidylcholine-enriched fractions are also used as a natural choline source, supported by the recent approved FDA “functional choline” claim.