Soy Protein Isolates

Isolates are the most highly refined soy protein products commercially available. They represent the major proteinaceous fraction of the soybean. Soy isolates are prepared from dehulled and defatted soybeans by removing most of the non-protein components and contain >90% protein (N x 6.25) on a moisture-free basis.

Isolates may also be lecithinated to improve dispersibility and reduce dusting. Both gelling and non-gelling varieties are available, as well as different viscosity grades.

Isoelectric Isolate
The protein is extracted from defatted soybean flakes with water or mild alkali in a pH range of 8 to 9 followed by centrifugation to remove insoluble fibrous residue, adjusting the resulting extract to pH 4.5 to precipitate most of the protein as a curd, separating curd by centrifugation from the soluble oligosaccharides, followed by multiple washings, and then spray-drying to yield the isolate.

Uses: Infant formula and nutritional applications

Neutralized Isolate
More commonly, the isolate is neutralized (Na or K proteinates) to make it more soluble and functional. About one-third of the starting flake weight is recovered in the form of an isolate.

Uses: Meat and dairy products and varied applications requiring emulsification, emulsion stabilization, water and fat absorption, adhesive- or fiber-forming properties, and food analogs.

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