
SOY PROTEIN ISOLATES

The soy protein isolates used in numerous Shaklee products are produced by a large American company that specializes in making soy products for the processed food and supplement industries. While this company's process for making soy isolates is proprietary, a general description of the process follows.

High-quality soybeans are first cleaned, cracked, and dehulled to produce soy chips. The soy chips are conditioned and flaked to produce full-fat flakes. The fat is then extracted from the flakes to produce edible defatted flakes. Next, the defatted flakes are extracted in water or mild alkali, then screened and clarified to produce defatted soy "milk." The soy milk is precipitated using a food-grade acid to produce a soy "whey" and a soy "curd." The curd fraction is washed and concentrated, then dried to produce the purified isolated soy protein (or soy protein isolate), which is used in a variety of edible products.

This process isolates the protein content of the soybean from the less desirable parts of the soybean, such as the **hull material** and **fats**. **Trypsin inhibitors** – chemicals that naturally occur in the raw soybean that can affect human digestive enzymes – are largely inactivated by the steaming and heat applied during the processing of soy isolate. Only about 20% of their original activity remains. Similarly, **hemagglutinin**, a substance found in raw soybeans that can cause red blood cells to clump together, is removed during the processing of the soy curd as described above. Hemagglutinin concentrates in the soaking liquid, not in the curd.

A small percentage of **phytates** – derivatives of a phosphorus-containing compound called phytin, which is found in raw soybeans – may survive the processing of isolated soy protein. Phytates can bind with minerals in the gut and make them unavailable for absorption; however, for healthy individuals consuming normal levels of soy protein products, there should be no danger that the small amount of phytin in the soy would grossly impair the utilization of minerals.

Finally, there's been some concern over levels of certain minerals in soy products, including **aluminum**. The background levels of aluminum (and other trace minerals) in the soy protein isolates used by Shaklee are negligible, and we wouldn't expect any adverse side effects to result from their use.

Allergenicity to soy products sometimes occurs, just as sensitivity to virtually any foods that contain proteins may occur. For those people who are not allergic to soy, soy-based products are excellent alternatives to milk- or meat-based proteins, and are especially useful for persons who have allergies to foods containing the latter proteins. Using soy protein isolates in moderation should not cause any adverse health effects in the vast majority of consumers.