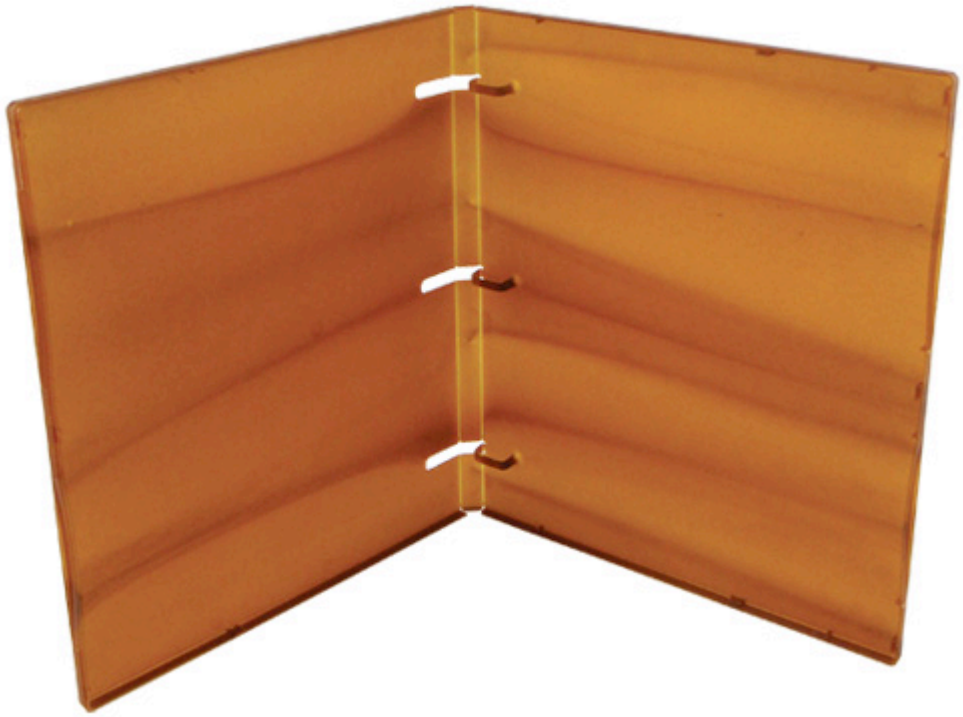
Soy-Meal Binder



Molder: Univenture, Inc.

Designer: Univenture, Inc.

OEM: Univenture, Inc.

Product Description

This fully enclosed, 3-ring binder is produced with a high content of soy additive. The use of soy in the binder is intended to eliminate the need of oil-based polypropylene and enhance the biodegradability of the overall product. The process used to produce the binder mixes soybean

product with a thermoplastic polymer to create an injection-moldable biocomposite resin. Consumers or institutions that use 3-ring binders on any everyday basis, and want to decrease their environmental impact, are the intended users.

Why is the product innovative?

Univenture, Inc. and Battelle, funded by the Ohio Soybean Council, partnered together to find a practical use for a specific agricultural soy coproduct. The result was a fully enclosed, injection-molded loose-leaf binder made from biocomposite product. The material used to produce the 3-ring binder is comprised of the thermoplastic polymer polypropylene and a soy co-product. Mixing 10wt% to 20wt% of the neat agricultural soy coproduct with the polypropylene makes the biocomposite that is then injection molded to form a binder. The resulting product does not absorb water in high humidity and has similar impact strength to products made with 100% polypropylene, as well as similar mechanical properties compared to a fully petroleum-derived polymer. The unique design of the binder offers efficient storage while the use of soy agricultural coproduct lowers the carbon footprint, considerably decreasing the bioaccumulative solid waste. Using injection molding this biocomposite product can be used to make any articles that are currently made from polypropylene or polyethylene. The potential held by this outstanding product to increase demand for agricultural coproducts is significant and the cost savings to be found from using an agricultural coproduct, compared to a fully-petroleum derived product, has the potential to result in millions of dollars per year. Biocomposites made from soybean coproducts will significantly increase the soy demand, bringing in millions of dollars of revenue per year to soybean farmers, as well as creating thousands of new jobs, further enhancing the impact of this marvelous product.