



PlastiSoy™ Epoxidized Soybean Oil

PlastiSoy™ is a premium-quality epoxidized soybean oil resulting from the oxidation of high iodine value unsaturated soybean oil with hydrogen peroxide and an organic acid. This non-toxic, non-hazardous, clear-to-pale yellow liquid acts as a cost-effective secondary heat and light stabilizer and a co-plasticizer in flexible PVC applications as well as an acid scavenger and pigment dispersion agent in numerous other compounds such as soy-based inks, agricultural chemicals, and butyl rubber.

The epoxidation process forms an “oxirane,” which is a three-member ring with one oxygen and two carbons. The oxygen is in position one, and the carbon atoms are in two and three. This angle puts considerable strain on the molecule resulting in a very reactive and useful molecule. PlastiSoy™ offers an economic benefit with superior dual functionality in all flexible vinyl compounds utilizing a natural and renewable raw material.

CHS is the only epoxidized soybean oil supplier that is basic in the product’s major feedstock—soybean oil. With soybean crushing and refining facilities in Mankato and Fairmont, Minn., CHS annually processes more than 90 million bushels of soybeans and refines more than one billion pounds of soybean oil. We also market more than one billion bushels of grain annually to domestic and international customers in more than 60 countries worldwide, so our prices reflect a strong understanding of commodity futures markets. Finally, our intensive customer focus means outstanding service, whether the sale is for one drum or a rail car. CHS offers reliable, consistent, quality product backed by the resources of a Fortune 100 energy, grains and foods company.

Typical PlastiSoy™ Characteristics

Oxirane Oxygen	6.8% min
Iodine Value	1.5%
Acid Value	0.5% max
Color (Apha)	150 max
Moisture	0.10 max
Molecular Weight (Approx.)	1000
Specific Gravity @ 25/25° C	0.995
CAS No:	8013-07-8

PlastiSoy™ Applications

- Secondary heat and light stabilizer for PVC compounds
- Co-plastization for flexible PVC compounds
- Acid scavenging in soy-based inks, agricultural chemicals, and insecticides
- Monomer compatibilizer
- Pigment dispersion agent
- Chemical intermediate
- Lubricating and cutting oils

Packaging

PlastiSoy™ has Kosher certification and is available in quantities including 45,000-pound truck tanks and 185,000-pound bulk rail tank cars.

PlastiSoy™ Storage and Handling Guidelines

PlastiSoy™ has a shelf life of two years when stored and handled properly. Acceptable materials of construction include carbon steel, 304 or 316 stainless steels, polyethylene, PVC, or CPVC. Care should be taken when selecting non-metallic materials to not exceed equipment manufacturer's temperature recommendations. Storage at ambient temperatures is acceptable, although some stratification will occur at temperatures below 80 degrees F. The stratification can be avoided by heating to greater than 100 degrees F and mild agitation. Heating should be done with low pressure steam (<15 PSIG) or with electrical heating elements that are immersed in a barrier fluid such as mineral oil that limits the surface temperature in contact with PlastiSoy™ to a maximum of 250 degrees F. Short-term exposure to higher temperatures up to 350 degrees F is acceptable, but long-term exposure to elevated temperatures will result in moderate product degradation and discoloration.

Pumps used in PlastiSoy™ service can include centrifugal, gear, or diaphragm type equipment. If handling at temperatures near its stratification point is anticipated, gear pumps are preferred.

FDA Clearance of PlastiSoy™ Epoxidized Soybean Oil

The use of PlastiSoy™ is sanctioned by the U.S. Food and Drug Administration for food packaging applications under section 21 CFR 181.22.

Facts about CHS Oilseed Processing

- Employs 260 people and operates 24 hours a day.
- Purchases the equivalent of two million acres of soybeans from growers in the Upper Midwest.
- Refines in excess of one billion pounds of soybean oil annually.
- CHS Oilseed Processing Division is committed to adopting innovative practices that ensure product safety and quality as well as to promote conservation and safety. We were one of the first companies to institute policies that ensure the integrity of all incoming and outgoing trucks and railcars in our facility.

Important Notice Regarding This Information

The information contained on this data sheet is correct to the best of our knowledge. We make no warranty of merchantability or any other warranty, either express or implied, with respect to the information and we assume no liability resulting from its use. Users should conduct their own studies to determine the appropriateness of the information and use for their particular purpose.



Resources for enriching lives.

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