

SEPLITE[®] BD130

SEPLITE[®] Gel Acid Cation Exchange Resin

PRODUCT DESCRIPTION

Seplite[®] BD130 is a dried sulfonic acid resin, supplied in hydrogen form. This resin has been developed to purify the raw biodiesel stream after the phase separation step in the manufacture of biodiesel. Seplite[®] BD130 functions as a desiccant, neutralizing agent and an ion exchanger to remove water, leftover reactants and by-products of the transesterification process, including soaps, glycerin, NaOH and organics. It may be used without any special pre-treatment. Seplite[®] BD130 greatly simplifies biodiesel purification.

BASIC FEATURES

Application	Purification of biodiesel
Polymer Structure	Gel styrene divinylbenzene copolymer
Appearance	Dark brown spherical beads
Functional Group	R-(SO ₃)-M+
Ionic form as shipped	Hydrogen

TYPICAL PHYSICAL AND CHEMICAL CHARACTERISTICS

Moisture retention	≤5%
Total hydrogen form capacity	≥4.5 meq/dry gram
Shipping Weight	870-900 g/l
Uniformity Coefficient (approx.)	1.6
Swelling	Dry to biodiesel 6-15%
	Dry to methanol 130%
	Dry to water 150%

SUGGESTED OPERATING CONDITIONS

Maximum operation temperature	120 °C (250°F)
Minimum bed depth	600 mm (24 inches)
Service Flow rate	1-5 BV/h
Usage	
Typical Capacity	0.05 to 0.1% by weight of biodiesel processed. (1000-2000 lb biodiesel to 1lb resin)
Desiccant Capacity	Up to 100% of dry weight of water
Neutralization Capacity	Minimum 180 grams of NaOH per lb of resin.

APPLICATIONS

Seplite[®] BD130 can be used either before or after the phase separation stage of the processing. Seplite[®] BD130 will remove traces of alkaline catalysts, methanol, water and glycerin. Although Seplite[®] BD130 can be used in a batch process, it is generally best to place Seplite[®] BD130 into an exchange vessel for ease of use. Typical configuration is leadlag operation as this arrangement provides both high capacity and high purity.

Seplite[®] BD130 is an efficient filter media, can be used to help remove traces of suspended solids. However, bulk solids removal (if necessary) should be performed upstream of possible plugging.

Seplite[®] BD130 has a fixed ion exchange capacity and a fixed capacity for moisture. The greater the impurities left in the raw biodiesel before it enters the Seplite[®] BD130 resin vessel, the less throughput that can be expected. To achieve highest throughput capacity, minimize moisture and excess basicity in the raw biodiesel before it contacts the resin bed. Higher concentrations of water, methanol and glycerin will decrease throughput capacity and increase operating costs.

Seplite[®] BD130 can also be used to remove water and cationic impurities from other organic systems. Seplite[®] BD130 can be reused. However, the regeneration and redrying process are somewhat complicated.

CAUTIONS: When applying water to Seplite[®] BD130, regardless of its condition (exhausted or unexhausted). Take proper precautions, execute safety measures and allow for rapid expansion. When not fully exhausted the resin is extremely hygroscopic. Rapid expansion, up to a doubling in size, may occur if unexhausted resin is placed in water. This can result in damage to process vessels and may even cause personal injury.

WARNING: Heat is generated when Seplite[®] BD130 is wetted and when it neutralizes alkalinity left in the biodiesel. In some cases the temperature rise can exceed 30°C . Equipment should be designed to accommodate this thermal increase.