

PNF Nutshell Filters is the most efficient nutshell media system available, removing up to 99% of free oil droplets.

It offers the most effective and newest generation of backwash to maximize cleaning and minimize carryover oil and particles once filtration resumes.

How it Works

Crushed nutshells constituting the packed bed within the vessels form an intricate network of tiny channels directing the water to take an arduous flow path from the top to the bottom of the vessel. Multi-grade nutshell offers excellent oil coalescing and holding capacities and solids are removed by simply becoming trapped within the pore structure of the bed. As increasing quantities of oil are adsorbed by the nutshell surface capillaries, the fine solids removal capacity also increases. The filtered water is collected within the base of the vessel by a wedge-wire lateral system which routes the water out of the vessel. Nutshell filters provide a large adsorption area in order to allow easy adhesion of oil to the nutshell's surface due to the presence of microscopic capillaries within the structure. Adsorption occurs due to the specific nature of the interaction between the oil content of the produced water and the surface of the crushed nutshells. The ability of the multi-grade nutshell to provide large holding capacities gives long run times and reduced volumes of backwash water. Solids are removed from the down flow of produced water within the bed where they are trapped within the porous structure of the densely packed crushed nutshell media.

Common Applications

- Onshore & Offshore Production
- Secondary & Tertiary Produced Water Treatment
- Secondary Recovery
- EOR

Key Benefits

- Cost savings
- Better performance (reclaim and/or remove more oil)
- Low and steady pressure loss provides predictable flow rates
- High flexibility
- High turndown ratios
- Designed to handle upset situations and slugging of oil and gas
- Less frequent media cleaning
- Designed for the lowest percentage of media replacement per year (less than 5%)
- No chemicals, air or gas are required for contaminant removal or media cleaning
- Less maintenance than other filters
- Design with the best flux rate to allow for smaller and fewer filters
- Small footprint

Standard Features

- ANSI flanged inlet and outlet connections
- Designed to ASME, ANSI, CRN, PED, and NACE industry standards

Materials of Construction

- Various material and coatings available