

## Macrolite® Duplex 1354 Filter System

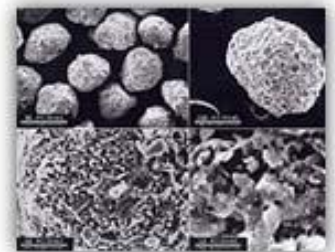
The skid-mounted *Macrolite®* Duplex 1354 Filter System removes total suspended solids (TSS) from water and wastewater at flows up to approximately 20 gpm. Its two 13 x 54 polyglass vessels contain 2.0 ft<sup>3</sup> each of Macrolite M-4 media, a NSF Standard 61-approved proprietary ceramic material. In various system configurations from manual to fully automatic, Macrolite media is widely used for filtering TSS as well as iron, arsenic, and manganese.



The Macrolite Duplex 1352 Filter System is manually backwashed at intervals based upon differences in inlet and outlet pressure. Four 3-way 1" inlet and outlet valves (one each per vessel) control service and backwash flows. Inlet and outlet pressure gauges are used to monitor media loading and to evaluate the need for periodic air scouring to additionally cleanse the media. Inlet water from a feed tank is pressurized by a 1-HP 304 stainless steel feed pump for parallel processing through the duplex media vessels except during alternating backwashes when one vessel after another would be taken off-line and cleansed.

The system, including metering, control, and sample valves and a 0-30 gpm rotameter indicating real-time system flow, is located on a passivated 304 stainless steel frame. Pump controls are housed in an on-skid NEMA 4X polycarbonate enclosure, and include a 460VAC fused disconnect, motor starter/over-load and Hand/Off/Auto (HOA) switch. In Auto mode, the feed pump will operate only if a pressure switch on the pump inlet indicates a gravity-flooded inlet pipe, to protect it against being run dry should solution stop flowing into the preceding neutralization system.

Macrolite provides flows of 11 gpm per ft<sup>3</sup> and capture efficiency to 3 microns with required backwash water equal to 1% of filtered flow. By comparison, typical sand filters provide 4 gpm per ft<sup>3</sup> and capture efficiency of only 10-15 microns, while wasting up to 5% of filtered water flow as backwash. Macrolite's spherical shape and textured surface has a uniformity coefficient of 1.1-1.2. With a bulk density of 60 (lbs/ft<sup>3</sup>) and specific gravity of 2.6; and <0.5% by weight moisture adsorption. is chemically inert and compatible with most types of acids, caustics and oxidants. Macrolite is available in a variety of size distributions.



Scanning electron microscope image of a Macrolite particle at various levels of magnification