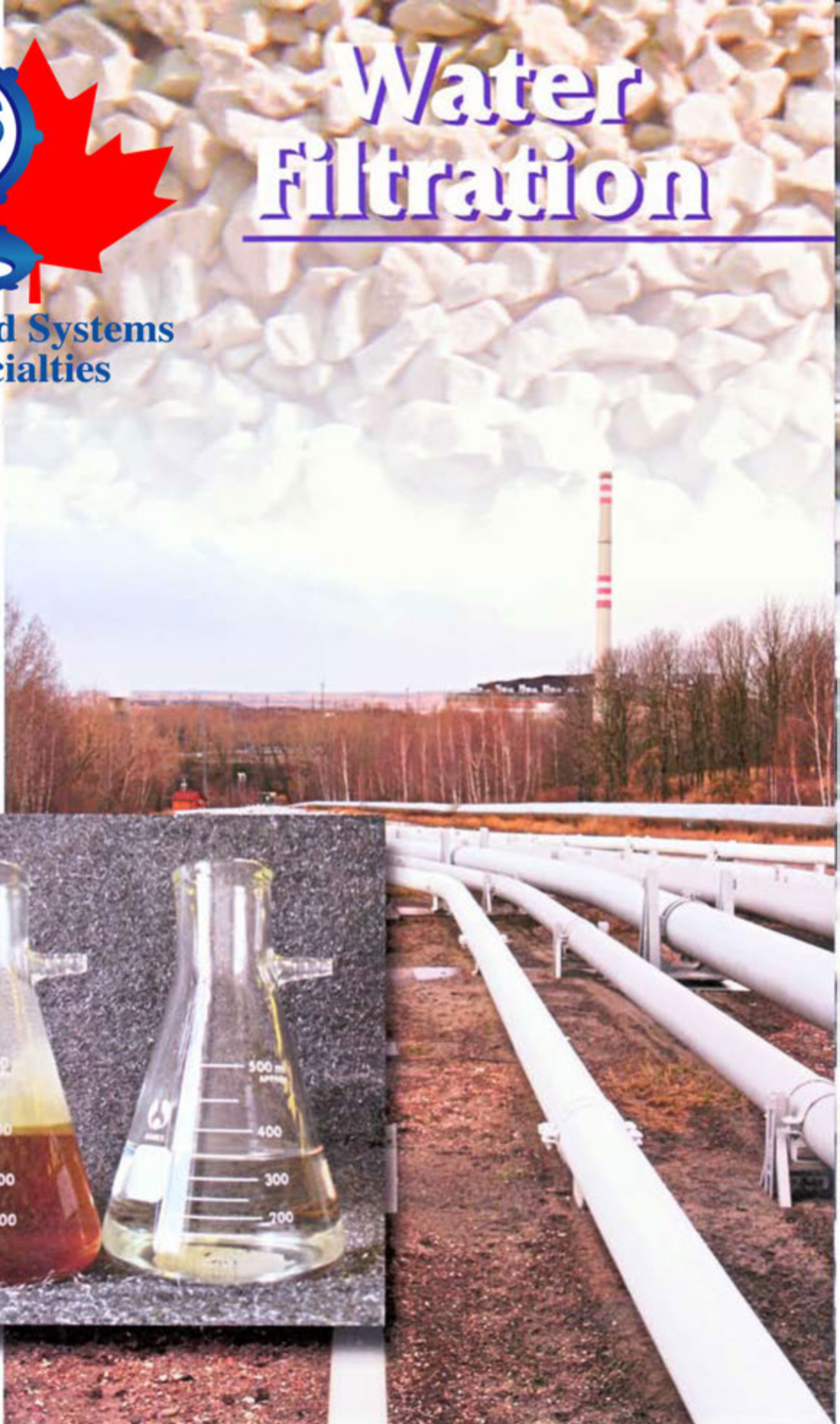




Engineered Systems  
& Specialties

# Water Filtration



The Media Is The Key....



## The KEY

to successful water treatment and filtration is selecting the right combination of media and hardware. For treatment of hydrocarbons, heavy metals, and other organic contaminants, the optimal solution is efficient oil and water separation followed by the HS-200 series. Because HS-200 series can adsorb up to 70% of its weight in hydrocarbons, its life inside a still bed canister is much longer than that of other process media such as granular activated carbon.

### HS-200 KING OF LIQUID FILTRATION

- NO SWELLING UPON WATER EXPOSURE
- MORE ACTIVE INGREDIENTS PER CUBIC FOOT THEN OTHER ORGANOCCLAYS
- CAN BE USED AT FULL STRENGTH OR CUSTOM BLENDED
- PROLONGS LIFE OF ACTIVATED CARBON AND RESINS THEREBY REDUCING COSTS AND INCREASING EFFICIENCY
- COST EFFECTIVE AND ENVIRONMENTALLY SOUND TECHNOLOGY

### HYDROSIL INTERNATIONAL LIMITED

is a modified Zeolite provider setting new standards in economical water treatment, including treatment of processed water and wastewater. Hydrosil's corporate headquarters and manufacturing facilities are located in Elgin, IL. With over 16 years of filtration experience, we specialize in our own Zeolite based organoclay products called HS-200.

### ZEOLITE BASE

Zeolite is the base of our filtration media. Zeolite belongs to a family of naturally occurring volcanic minerals with unique physical and chemical characteristics. Generally speaking, natural zeolites are hydrated aluminosilicates. They consist of an open, three-dimensional cage-like structure and a vast network of open channels extending throughout. Loosely bound, positively charged atoms called cations are attached at the junctures of the negatively charged aluminosilicate lattice structure. Zeolite has a crystalline structure (similar to a honeycomb) consisting of a network of interconnected tunnels and cages. Zeolite has a high specific surface area; it's rigid framework eliminates shrinking and swelling. Perhaps the most commercially valuable and dynamic property of zeolite is its cation exchange capacity. The most common exchangeable cations found in zeolite molecules are ammonia, sodium, calcium, potassium, and magnesium, many which are desirable in numerous biological and industrial processes. The ability to release beneficial elements while capturing and binding other, often less desirable, materials makes zeolite an ideal media for selective adsorption of certain elements and compounds from soil, water and air.

The cornerstone of Hydrosil International's success is the HS-200 series, the future of Zeolite based organoclays. Our proprietary modification process transforms high-grade Zeolite into a powerful, selective water treatment adsorbent that bonds with hydrocarbons, organics and other contaminants upon contact, locking them inside its molecular structure. Hydrosil's Contaminant Encapsulation Technology yields a granular filtration media capable of adsorbing approximately 70% of its weight in hydrocarbons. Extensive application use and field testing of the HS-200 series, analyzed by independent laboratories, has demonstrated removal of a wide range of contaminants to nondetectable levels. The resulting discharge water meets or exceeds typical regulatory requirements.





## HS-200 Applications

HS-200 series has been used against a wide array of industrial waste streams:

- Creosote Plants
- Wood Processing
- Pulp and Paper Mills
- Carbon Black Plants
- Oil Production
- Firefighting Academy
- Industrial Laundry Services
- Shipyards
- Plastic Manufactures
- Tank and Storage Vessel Cleaning
- Pesticide Manufacturers
- Condensate Systems
- Pipeline Pressure Testing Runoff
- Industrial Water Runoff



## The HS-200 Series Blends

**HS-250** a blend of HS-200 and 8x30 Anthracite Coal

- Contains 66% more active ingredient per cubic foot than activated clays on the market

**HS-250-AC** a blend of HS-200 and 6x12 Virgin Activated Carbon

- This blend is the best of both worlds with the added benefits of Virgin Activated Carbon

**HS-270** a blend of HS-200 and 8x30 Anthracite Coal

- Was created to be a 1 to 1 replacement for Organoclays/Activated Clays on the market that have **swelling** issues

## HS-200 Series, the Results Are In

The following Constituents have had a 95%+ Reduction when treated with the HS-200 series

Acenaphthene	Chrysene	PCP (Pentachlorophenol)
Acenaphthylen	COD's	Phenanthrene
Ammonia	Copper	Phenolics (recoverable)
Anthracene	1,1 Dichloroethane	Pyrene
Arsenate	1,2 Dichloroethene	Selenate
Arsenic	1,4 Dioxane	TCE (Trichloroethylene)
Benzo (a) Anthracene	Fluoranthene	TOC (Total Organic Compounds)
Benzo (b) Fluoranthene	Fluorene	Total Phosphorous
Benzo (a) Pyrene	Gasoline Range Hydrocarbons	TPH (Total-Petroleum Hydrocarbons)
Benzo (g,h,i) Perylene	Lead	TSS's
BOD's	Mercury	Vinyl Chloride
BTEX	2-Methylnaphthalene	Zinc
Cadmium	Motor Oil	
4-Chloro-3-Methylphenol	Naphthalene	
Chromate	Nickel	
Chromium	Oil and Grease	

## HS-200 Series Versatility

- **Free Standing Mode:**  
Used on its own, HS-200 series can be loaded in drums for use as an efficient stillbed filtration medium. Other applications include tank cleaning, oil spill mitigation, and lining/capping projects.
- **Pre-Treatment Mode:**  
HS-200 Series can be used upstream to enhance the performance and extend the useful life of other filtration processes and media such as reverse osmosis, activated carbon and resins.
- **Post-Treatment Mode:**  
HS-200 Series utilized downstream of an oil-water separator or coalesce filter, has the ability to act as an effective cleaning and polishing agent.

### Application Parameters:

Bulk Density: 58 lbs/Ft<sup>3</sup> (928 kg/M<sup>3</sup>)

10 - 15 minutes depending on solubility of contaminant(s) to be removed.

Temperature Range: 33 - 170 F<sup>o</sup> (1 - 77 C<sup>o</sup>)

pH Range: 4 - 10

Pre-treatment prior to activated carbon and ion exchange resin columns; Pre-treatment for RO systems; Polishing for oil and water separators and DAF units.

