Carbon & Speciality Media

See below for our wide range of both Liquid and Vapor Media products along with our full line of Field Service Capabilities to perform both Temporary and Long Term Teratment Solutions for our Clients

What is Activated Carbon?

Activated carbon (also called activated charcoal, activated coal or active carbon) is a very useful adsorbent. Due to their high surface area, pore structure (micro, meso and macro), and high degree of surface reactivity, activated carbon can be used to purify, dechlorinate, deodorize and decolorize both liquid and vapor applications. Moreover, activated carbons are economical adsorbents for many industries such as water purification, food grade products, cosmotology, automotive applications, industrial gas purification, petroleum and precious metal recovery mainly for gold. The base materials for activated carbons are coconut shell, coal or wood.
Application of Activated carbon

Different types of activated carbon are suited for various specialized applications.

- Granulated activated carbon
- Pelletized activated carbon
- Powdered activated carbon
- Impregnated activated carbon
- Catalytic activated carbon

Each grade and size of activated carbon is application specific. Selecting the correct activated carbon product and mesh size depends on the application and contaminants you plan to remove.

Typical applications are:

- Removal of volatile organic compounds such as Benzene, TCE, and PCE.
- Hydrogen Sulfide (HS) and removal of waste gases
- Impregnated activated carbon used as a bacteria inhibitor in drinking water filters
- Removal of taste and odor causing compounds such as MIB and geosmine
- Removal of chlorine and chloramine

Design:
Designing a proper activated carbon filtration system with enough contact time, pressure drop, and vessel size is important. Also, activated carbon's physical and chemical characteristics play an important role in removing contaminants effectively. Therefore, material testing is essential and ASTM test methods such as butane activity, surface area, density, and water content (moisture) can be carried out to find the best suitable material for your application.
Activated carbon is considered the world's most powerful absorbent. It is eco-friendly, due to its ability to regenerate

Types of activated carbon:

Coconut shell-based activated carbon
The very large internal surface areas characterized by microporosity along with high hardness and low dust make these coconut shell carbons particularly attractive for water and critical air applications as well as point-of-use water filters and respirators

- Very high surface area characterized by a large proportion of micropores
- High hardness with low dust generation
- Excellent purity, with most products exhibiting no more than 3-5% ash content.
- Renewable and green raw material.

Coal-based activated carbon
Demand is typically high for this relatively low cost filter media for both gas and liquid applications. Coal based activated carbon has a high surface area characterized by both mesopores and micropores.

- Consistent density
- Hard materials with minimal dust generation.
- Economical

Wood based activated carbon

It produces different performance characteristics in industrial applications typically catered to with coal or coconut products.

Wood based activated carbon has a high surface area characterized by both mesopores and micropores and has excellent decolorizing properties owing to its signature porosimetry

- Relatively low density
- Renewable source of raw material

Catalytic based activated carbon

Catalytic carbon is a class of activated carbon used to remove chloramines and hydrogen sulfide from drinking water.

It has all the adsorptive characteristics of conventional activated carbons, as well as the ability to promote chemical reactions.
Catalytic carbon is not impregnated with caustic chemicals

Because catalytic carbons have no impregnates, you won't have to worry about reduced organic odor capacity or the higher bed fire potential of the impregnated carbons.

Catalytic carbon is created by altering the surface structure of activated carbon. It is modified by gas processing at high temperatures to change the electronic structure and create the highest level of catalytic activity on carbon for reducing chloramine and H2S in water. This added catalytic functionality is much greater than that found in traditional activated carbons. Catalytic carbon is an economical solution to treat H2S levels as high as 20 to 30 ppm. Catalytic carbon converts adsorbed H2S into sulfuric acid and sulfurous acid which are water soluble, so carbon systems can be regenerated with water washing to restore H2S capacity for less frequent physical change-outs.

Impregnated Activated Carbon

Surface impregnation chemically modifies activated carbon through a fine distribution of chemicals and metal particles on the internal surfaces of its pores. This greatly enhances the carbon's adsorptive capacity through a synergism between the chemicals and the carbon. And provides a cost-effective way to remove impurities from gas streams which would otherwise not be possible.
Water treatment

Because of its antimicrobial/antiseptic properties, silver-impregnated carbon is an effective adsorbent for purification in earth-bound domestic and other water systems.
Gas purification

Impregnated activated carbon is used to treat flue gases in coal-fired generation plants and other air pollution control applications. Carbon can be specifically impregnated for removal of acid gases, ammonia and amines, aldehydes, radio-active iodine, mercury and inorganic gases such as arsine and phosphine. Carbon impregnated with metal-oxide targets inorganic gases including HCN, H2S, phosphine and arsine.

Carbon Liquid & Vapor Phase Filtration Media

See the Bolded Italyics under each specific heading for the Adsorbition Qualaties of each Media

Note:
Double Clicking on the selected media will bring you to the Specification/Cut Sheet for each media

ACOL–L 60 (8x30)
LIQUID PHASE ACID WASHED BITUMINOUS COAL
BASE ACTIVATED CARBON
ACOL-L60 is a hard and regenerable granular activated carbon (GAC) made from select grades of bituminous coal. This highly-active granular activated carbon has been acid washed to minimize residual ash. ACOL-L60 has a high density with a large pore volume and high surface area. Its pore structure has been developed for the adsorption of both high and low molecular weight impurities***. ACOL-L60 is commonly used for purifying potable water, ground water and waste water, and a variety of decolorizing/deodorizing applications.*** ACOL-L60 meets AWWA B604-96 standards and Food Chemicals Codex Standards for drinking water applications and is ANSI/NSF Standard 61 certified.

ACOL–L 60 (12x40)
LIQUID PHASE
ACID WASHED BITUMINOUS COAL BASE ACTIVATED CARBON
ACOL-L60 activated carbon is made from a selected grade of bituminous coal that has been acid washed in order to create a low ash content and to provide a dust-free material. ***This granular activated carbon is mainly used for the purification of potable water, beverage manufacturing, treating water for kidney dialysis and hemo-dialysis, industrial waste water treatment, ground water treatment, decolorizing, deodorizing and de-oiling for the food industry.*** ACOL-L60 carbon meets AWWA Standards for treatment of potable drinking water and is compatible with all municipal water treatment use.

COC–AL60 (12x40 mesh)
LIQUID PHASE
ACID WASHED COCONUT SHELL ACTIVATED CARBON
COC - L60 Granular Activated Carbon (GAC) is manufactured from select grades of coconut shell and acid washed to yield a high purity and low ash content. ***COC - L60 features a high density, large micropore volume and high surface area. It's commonly used for beverage manufacture, dialysis, potable water, and a variety of food grade applications. In properly designed systems, COC - L60 will effectively remove chlorine, chloramines, lead, TCE, PCE, THM's, Phenols, pesticides, detergents, unwanted taste and odor, and more.*** COC - L60 meets AWWA Standards, ANSI/NSF Standard 61 and Food
Chemicals Codex Standards for drinking water applications

COC-L60 (12x40)
LIQUID PHASE
COCONUT SHELL BASE CARBON
COC-L60 Granular Activated Carbon (GAC) is manufactured from select grades of coconut shell and features a high-density, large micropore volume and high surface area. ***It is commonly used for the purification of potable water, beverage manufacture, dialysis, aquarium water and a variety of food grade applications. In properly designed systems, COC-L60 will effectively remove chlorine, chloramines, lead, TCE, PCE, THMs, phenols, pesticides, detergents, taste and odor, and more.*** COC-L60 meets AWWA Standard B-600-74, ANSI/NSF Standard 61 and Food Chemicals Codex Standards for drinking water applications.

COC-L60 (8x30)
LIQUID PHASE
COCONUT SHELL BASE CARBON
COC-L60 granular activated carbon (GAC) is manufactured from select grades of coconut shell and features a high-density, large micropore volume and high surface area. ***It is commonly used for the purifi cation of potable water, beverage manufacture, dialysis, aquarium water and a variety of food grade applications. In properly designed systems, COC-L60 will eff ectively remove chlorine, chloramines, lead, TCE, PCE, THMs,1,2,3-Trichloropropane, phenols, pesticides, detergents, taste and odor, and more.*** COC-L60 meets AWWA Standards, ANSI/NSF Standard 61 and Food Chemicals Codex Stan-dards for
drinking water applications.

COC-L 60R (12x40)
LIQUID PHASE
COCONUT SHELL REACTIVATED CARBON
FOR WATER PURIFICATION
COC-L 60R Granular Reactivated Carbon is reactivated from select grades of spent activated carbon and features a high density, large micropore volume and high surface area. In properly designed systems, ***COC-L 60R will effectively remove chlorine, chloramines, lead, radon, VOC's ,TCE, PCE, THM's, Phenols, pesticides, detergents, taste & odor, etc.***

COC-AL60 (8x30)
LIQUID PHASE
COCONUT SHELL BASE CARBON
COC-AL60 granular activated carbon (GAC) is manufactured from select grades of coconut shell and features a high-density, large micropore volume and high surface area. ***It is commonly used for the purifi cation of potable water, beverage manufacture, dialysis, aquarium water and a variety of food grade applications. In properly designed systems, COC-AL60 will effe ctively remove chlorine, loramines, lead, TCE, PCE, THMs,1,2,3-Trichloropropane, phenols, pesticides, detergents, taste and odor, and more.*** COC-AL60 meets AWWA Standards, ANSI/NSF Standard 61 and Food Chemicals Codex Stan-dards for drinking water applications.

COL – GL 60R (8x30)
LIQUID PHASE
REACTIVATED CARBON
COL-GL 60R (8 x 30) is a hard, reactivated, carbon manufactured from pooled spent carbon which is recommended for a variety of waste water and process water treatment. ***COL-GL 60R (8 x 30) efficiently removes chlorine, taste and odor compounds, and volatile organics, even with brief contact times.***

COL-L 60 (8x30)
LIQUID PHASE
BITUMINOUS COAL BASE CARBON
COL–L 60 is a hard, virgin granular activated carbon (GAC) manufactured from select grades of bituminous coal. It is a high-density carbon with a large pore volume and high surface area. Its pore structure has been developed for the adsorption of both high and low molecular weight impurities. ***COL–L 60 is commonly used for purifying potable water, ground water and waste water, and a wide variety of decolorizing/deodorizing applications.*** COL–L 60 meets AWWA B604-96 standards and Food Chemicals Codex Standards for drinking water applications and is ANSI/NSF Standard 61 certified.

COL – GL60R (12x40)
LIQUID PHASE REACTIVATED CARBON
COL-GL 60R (12x40) is a hard, reactivated, carbon manufactured from pooled spent carbon which is recommended for a variety of waste water and process water treatment**. COL-GL 60R (12x40) efficiently removes chlorine, taste and odor compounds, and volatile organics, even with brief contact times.**

COL-L 60 (12x40)
LIQUID PHASE
BITUMINOUS COAL BASE CARBON
COL–L 60 is a hard, virgin granular activated carbon (GAC) manufactured from select grades of bituminous coal. It is a high-density carbon with a large pore volume and high surface area. Its pore structure has been developed for the adsorption of both high and low molecular weight impurities. **COL–L 60 is commonly used for purifying potable water, ground water and waste water, and a wide variety of decolorizing/deodorizing applications.** COL–L 60 meets AWWA B604-96 standards and Food Chemicals Codex Standards for drinking water applications and is ANSI/NSF Standard 61 certified.

COC–A 60 (4x8 Mesh)
VAPOR PHASE
COCONUT SHELL BASE
GRANULAR ACTIVATED CARBON
COC-A 60 is a highly-active granular activated carbon (GAC) manufactured via high temperature steam activation from selected grades of coconut shell and designed for use in a wide variety of air purification and vapor phase applications. Available in industry standard 4x8 mesh sizes, this high-quality carbon provides extraordinary surface area, tne pore structure, high density and superior hardness.

COC–A60R (4x10 Mesh)
VAPOR PHASE
GRANULAR
REACTIVATED CARBON
COC-A 60R is a highly-active reactivated granular activated carbon (GAC) manufactured via high temperature steam activation from selected grades of pooled spent carbon and designed for use in a wide variety of air puri¬cation and vapor phase applications. Available in industry standard 4x10 mesh size, this high-quality carbon provides extraordinary surface area, ¬ nepore structure, high density and superior hardness.

COL–PA 60 (4mm)
VAPOR PHASE
COAL BASE PELLETIZED CARBON
COL-PA 60 is a highly-active, pelletized carbon manufactured from selected grades of bituminous coal to provide high density and superior hardness. COL-PA 60 is designed for use in a wide variety of air purification and vapor phase applications. Available in industry standard 4mm size, pelletized ***COL-PA 60 provides reduced pressure drop. In addition, the extraordinary surface area and fine pore structure of COL-PA 60 offers excellent adsorption capacity, making it a popular choice for solvent recovery, industrial air cleaning systems, room air purifiers, paint spray booths, odor control systems, etc.***

Speciality Media Post Carbon Water Filtration Media

HS-100 (8x14)
Liquid Phase, Zeolite
Hydrosil's HS-100 is a granular natural zeolite. ***The HS-100 has a high capacity for removing ammonia from liquid phase. Zeolite filtration has also shown better performance than other medias such as sand and sand/anthracite media for particle filtration. The HS-100 is found in aquariums, residential drinking water filtration, wastewater treatment, stormwater treatment, mining trailing ponds, and agriculture industry.***

<u>What is Zeolite?</u>
There are roughly 40 types of natural occurring zeolites in the world. Natural zeolites are formed from sedimentary rocks or volcanoes which are essentially hydrated aluminosilicate minerals. There are 150 plus types of synthetic zeolites which are artificially made for specific purposes. Synthetic zeolites are manufactured to have uniform structure. Zeolites are hard solids which have high melting points. The material is unreactive and made with naturally occurring minerals. Zeolites are used in a variety of ways including water softeners, pet litter, catalysts, concrete production, and remediation.

HS-200 (8x14, 14x40)
Liquid Phase, Pure Organoclay
Hydrosil's HS-200 is designed to remove oil, heavy metals, and similar organics from water. The HS-200 series can remove 70% plus of its own weight in hydrocarbons; Therefore, its' life inside a still bed is much longer than that of other filtration media such as granular activated carbon. The HS-200 series:

- Does not swell upon water exposure;
- Has more active ingredients per cubic foot than other organoclays;
- Is cost effective and environmentally sound technology;
- Does not support biological growth;
- Can be custom blended; and
- Prolongs life of activated carbon and resins thereby reducing costs and increasing efficiency.

Industries that use the HS-200 vary from environmental service companies to wastewater treatment facilities. The HS-200 is commonly used in oil water separators, frac tanks, pump and treat systems, condensate systems, stormwater run-offs, excavation and de-watering projects.

HS-250-AC (8x14)
HS-250-AC Liquid Phase
50/50 Organoclay & Activated Carbon
Hydrosil's HS-250-AC is a 50/50 blend by volume of organoclay, HS-200, and coconut shell activated carbon, HS-AC. The HS-AC is high quality carbon for liquid phase with extraordinary surface area, fine pore structure, high density, and superior hardness. Hydrosil's HS-200 offers high removal capacity for select pollutants including fats, oils, greases and heavy metals while the HS-AC adsorbs a variety of aromatic and aliphatic compounds. The two products blended together casts a wide net to remove a handful of inorganic and organic compounds.

This HS-250-AC is effective at removing oil, heavy metals, and similar organics from water. The HS-250-AC is used in wastewater treatment, food processing plants, gold purification, and manufacturing facilities.

HS-300 (8x14)
HS-300 Liquid Phase
Naphthalkonium Organoclay
The HS-300 is used to remove anionic compounds. Anionic compounds also known as anions are negatively charged ions. The surface of the HS-300 forms a surfactant bilayer which attracts ionic species. ***The media is targets compounds such as phosphates, cyanides, nitrates, and sulfates. Hydrosil's HS-300 is found in sewage treatment, healthcare industry, and wastewater treatment.***

HS-600
HS-600 Vapor Phase
Potassium Permanganate
Hydrosil's HS-600 uses reactive chemistry to oxidize various pollutants. The HS-600 is zeolite impregnated with 6% potassium permanganate ($KMnO_4$). Its' high impregnated level of $KMnO_4$ and insignificant dusting attributes make it an ideal media for gas phase filtration. ***The HS-600 is designed for removing acid gases, aldehydes, amines, and various hazardous air pollutants. The media is typically used in the following industries:***

- Fresh fruit and vegetable transportation
- Refineries
- Pulp and paper mills
- Ground water remediation
- Wastewater treatment

The media is loaded in tanks, exhaust systems, soil vapor extraction (SVE) systems, air filtration trays and modules. To see if the HS-600 removes a specific pollutant please see our Air Pollutants page, or contact a representative today.

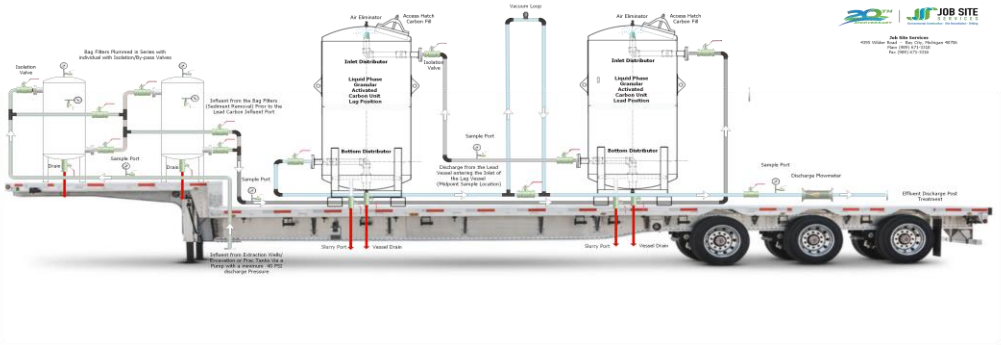
What's the Difference Between HS-600 and HS-400?

Potassium permanganate (chemical formula KMnO4) similar to sodium permanganate is a crystalline purple solid that dissovles in water***. The chemical is a powerful oxidizer that is commonly used to kill parasites, bacterias, viruses, inorganic and organic compounds. Potassium permanganate uses include: medical use, water treatment, industrial use, analytical use, fruit preservation, and manufactured goods such as fire starters. Through oxidation-reduction (redox) reactions, KMnO4 is used in vapor control to remove harmful gases such as DCE, TCE, and styrene***. Most redox reactions with potassium permanganate will not generate toxic byproducts.

HS-MT (8x30)
HS-MT Liquid Phase
Modified Earth Blend
Hydrosil's HS-MT for liquid phase filtration is a 50/50 blend by volume of HS-200 and modified earth with a density of 49-51 pounds per cubic foot. ***HS-MT is extremely effective at removing dissolved metals. Common metals found in water include nickel, cadmium, zinc, chromium, and thallium.***

Heavy metals are naturally occurring in the environment. Some heavy metals are essential in human bodies when in low concentrations such as copper and zinc. However high concentrations of heavy metals can have toxic effects on humans. Heavy metals in high concentrations can be found in soil, groundwater, and surface water due to mining and industrial pollution.

The HS-MT is commonly used in wastewater treatment facilities and industrial water treatment.



Our Services

Job Site Services, Inc. has over 20 years of experience servicing vapor and liquid phase filter systems in various applications using a variety of filter media.

We supply a range of both fixed and portable filter vessels for both Liquid and Vapor phase applications designed to specification. We also offer activated carbon and various other types of filter media to meet our clients needs.

Services Include:

- Carbon Change-Out Services Inclusive of Supplying Filter Media
- Supply and Installation of Liquid and Vapor Filter Systems
- Specialized in Municipal Potable Water and Wastewater Treatment Plants
- Spill Sites, Excavations, Emergency Response and and Dewatering Treatment trains
- Odor Control
- Advance Material Handling Equipment for Change-Out Services
- Performance Guarantees and Superior Lead-times
- Disposal of Non-Hazardous Spent Activated Carbon
- Regeneration of Spent Carbon
- Technical Support
- Laboratory Testing through our third pary partnerships
- Carbon Loading Calculation Reports to Establish Bed-Life of Activated Carbon
- Turnkey Crews Trained in 40-hour Hazardous Waste and Emergency Response, Confined Space, First Aid/CPR, etc.
- Media Fill/Extraction via our Mobile Vacuum Pod, Hurricane Hopper (Drum or Supersac) and Vacuum Truck Services (Vacuum Box Extraction). JSS, also offers though our affliates the capability to Slurry extract and fill large vessels on location.

For inquries or more information on our Media Change-Out Services, Equipment Rentals or System Purchases please contact us direct at:
Info@JSSMI.com
or visit:
https://www.jssmi.com/contact/contact-form
And one of our Experienced Project Managers will contact you direct.