Filter Media

- Anthracite Filter Media
- Filter Sand (for rapid and slow filtration)
- Garnet
- Gravel
- Ceramics
- Filter Media (Iron,Manganese and Color removal)
- Activated Carbon

FILTER MEDIA

We are impressed with limpid mountain torrents and clear springs. Though they are happy dispensation of Nature, we are surprised at the earth's skillful water purification work over again. Water is essential to human's life. We are convinced of essentials for human's prosperity from the history that ancient civilization has risen at valleys of great rivers such as the Tigris-Euphrates, the Nile, the Yellow River, etc. It was not so old that humans adopted filtering methods for tap water, but it was the first time to adopt slow filtration in the early 19th century. After the advent of rapid filtration in the latter 19th century, we have adopted the coagulation-settling-filtration as a typical pattern of water treatment even now.

In Japan, the diffusion of tap water exceeds 96% in 1998. Japan is one of the most advanced countries in water purifying technology. However, even in these days under the spread of tap water, they are not unpredictable to take precautions against water pollutants such as Cryptosporidium, to take measures against algae derived from temperature rise in the earth, and so on, in order to supply safe tap water. Under the serious condition, the task of water filter media, being the central part of water purification, must be important, the importance of quality and performance is again realized. Even in these days that membrane treatment starts spreading as new technology, the part of water filter media holds an established position for the pretreatment, iron and manganese removal, etc.

Furthermore, during the load of facility increases in quality and quantity due to deterioration of tap water source in recent years and demand of advanced treatment for tap water, contamination problem of water filter media is becoming serious in waterworks operated for ten or more years after establishment. The needs of replacement work for filters and regeneration work for Filter Sands increase, in order to supply safe tap water. So we, Tohkemy Corporation, would like to introduce our products and technology to be securely used on basis of our experience and record cultivated as a leading manufacturer of water filter media from the establishment in 1965. We eagerly hope to have your favor in use.

Filter Media for Turbidity and SS removal

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Filter Media Iron, Manganese and Color removal

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Product name \ Water quality	Turbidity	SS	Iron	Manganese	Humic Color
Anthracite Filter Media	◎	◎	△		
Filter Sand (rapid filtration)	◎	◎	△		
Filter Sand (slow filtration)	○	○			
Garnet	◎	◎	△		
Ferrolite MC/GC			◎	◎	△
Toyolex F			◎		
Manganese Sand			○	○	
Radicallite UC3			○	○	◎
Radicallite SC3			○	○	○
Ceramics M	◎	◎	△		
Ceramics G	◎	◎	△		

TOHKEMY CORPORATION

Removal object Turbidity SS Fe

Anthracite Filter Media

Anthracite Filter Media are filtration materials for turbidity and SS removal. Since the specific gravity is lighter than that of Filter Sand, it is much used in combination with Filter Sand in dual-media filtration, to consist reverse grain layers after backwashing. In addition, because of high content carbon of this product, it has high resistance to various chemicals and high physical strength so that it is widely used for city and industrial water purification.

Features of Anthracite Filter Media

1. High void percentage and much removal capacity of turbidity and SS.

In the “Single-medium filtration” treated by Filter Sand only, small particles are placed at upper part of layer, called as “Surface filtration” that turbidity and SS are caught at surface layer part mainly, and it results in less removal capacity of turbidity and SS. By use of Anthracite Filter Media of which the specific gravity is lighter than that of Filter Sand and even bigger particles can be placed on the Filter Sand, it is possible to enlarge the removal capacity of turbidity and SS as ideal “Dual-media filtration” in combination with Filter Sand and it is widely used in many water works in Japan. Since Anthracite Filter Media,being rich angular and complicated in form, have high void percentage and large specific area, “Deep bed filtration” which is effective not only at the surface but also to the depth can be realized and it is also used with single and deep layer.
From these features, the filtration will be effective by use of Anthracite Filter Media as follows.

- **Extending filter run length to lower washing water waste and improve treated water collection.**
- **Possible to quicken filter run length to save space for installation of equipment.**
- **Prevention of filtration blockage due to Synedra, Microcystin, etc.**
- **Prevention of mad ball forming at the surface of sand layer.**

2. Micro-flocs growing easily.

Since the grain has complicated form and angularities, suspended solids are retained in the inter granular spaces throughout the greater part of layer depth. After addition of coagulant, the water to be treated which has been sent out the filter without agitation is agitated and generates micro-flocs while it passes through the inter granular space. It results in improvement of treated water quality.

- **Improvement of treated water quality.**

3. Easy change from single-medium filtration (by use of Filter Sand) to dual-media filtration.

The washing method of Anthracite Filter Media is the same as that of Filter Sand. It is no need to install new washing equipment additionally in case of changing the existing filter from single-medium filtration by only use of Filter Sand to dual-media filtration by use of Anthracite Filter Media together. It is possible to improve the filtration effect by removing a part of Filter Sand and fill up with Anthracite Filter Media there.

- **Improvement of filtration effect with reasonable budget.**

4. High resistance to chemicals

Since anthracite of good quality contains less impurities and much carbon and it is not dissolved in acidic and alkaline water, it is suitable as a filter medium and also used in the chemical industry for the filtration of brine in soda manufacturers.

- **Possible to use with various chemicals.**

5. Being used as a carrier for bio film treatment.

Since Anthracite Filter Media have high void percentage and large specific area, bio film is easily formed on them. The medium is the most suitable not only for physical filtration but also as a carrier for bio film treatment.

- **High effect as a carrier for bio film treatment.**

Standard products of our Anthracite Filter Media

Effective Size (mm)	0.7	0.8	1.0	1.2	1.5	2.0	2.5	3.0	4.0
Uniformity Coefficient	1.5 maximum or 1.4 maximum								
Appearance	Granular								
Producing center	Hongai, Vietnam								

Note: We have a large assortment of products in conformity with the Selecting standard of Anthracite Filter Media for tap water use. At your request, we can manufacture Anthracite Filter Media of other Effective Sizes and Uniformity Coefficient. Please understand that there are tolerances included in the above Effective Sizes.

Packing 30L in a PP woven bag, 1m^3 in a flexible container bag (Palletizing available)

Quality standard of our Anthracite Filter Media

	Our product sample No. 1	Our product sample No. 2	Quality standard (JWWA A103-2:2006-2)
Specific gravity(g/cm^3)	1.42	1.46	1.40 to 1.69
Friability (%)	0.85	1.22	3.0 maximum
Solubility in HCl (%)	0.65	0.78	6.0 maximum

Main characteristic example of Hongai anthracite

	Constant moisture (%)	Ash (%)	Volatile matter (%)	Sulfur (%)	Fixed carbon (%)	Calorific value (J/kg)
Hongai coal	5	5 to 7	5 to 7	0.6	88	1,880 to 1,980

Anthracite is the coal of highest carbonization in the classification of coal. The world-wide distribution of anthracite field covers U.S.A., China, Vietnam, Russia, South Africa, etc. In Japan, it had been also mined in Amakusa and Omine, but at present, Japanese industries have been relying totally upon the import from foreign countries. Anthracite having higher carbonization with good quality in the world is Hongai coal in Vietnam among them. We have the Hongai factory in Vietnam and we also manufacture Anthracite Filter Media of good quality in Japan derived from Hongai coal as raw material, being ready to deliver the product so that you can use it safely for tap water use.

Removal object **Turbidity** **SS** **Fe**

Filter Sand
(for rapid and slow filtration)

To use Filter Sand is a basic filtration method of water purification. Importance of Filter Sand, to work for physical treatment (catching the turbidity component) in rapid filtration and for biological treatment in slow filtration, is widely well-known. For the purpose of making the filtration rapider and water collection ratio more in recent years, the filter layer component and flow direction have been improved, the improved result and further improvement in quality are desired. We, as a manufacturer of Filter Sand, have investigated the quality control and manufacturing technology thoroughly since 1965.

Standard products of our Filter Sand (for rapid filtration)

Effective Size (mm)	0.35	0.5	0.6	1.0	Size regulations(JWWA A103-1:2006-2) 0.45 to 0.70
Uniformity Coefficient	1.5 maximum or 1.4 maximum				1.7 maximum
Maximum size (mm)	2.0mm maximum			2.8mm maximum	2.0 maximum
Minimum size (mm)	0.3mm minimum				0.3mm minimum
Appearance	Clean and granular				-

Note: At your request, we can manufacture Filter Sand of other Effective Sizes and Uniformity Coefficient.
Please understand that there are tolerances included in the above Effective Sizes.

Standard products of our Filter Sand (for slow filtration)

Effective Size (mm)	0.30 to 0.45	Size regulations(JWWA A103-1:2006-2) 0.30 to 0.45
Uniformity Coefficient	2.0 maximum	2.0 maximum
Maximum size (mm)	2.0 maximum	2.0 maximum
Minimum size (mm)	0.18 minimum	0.18 minimum
Appearance	Clean and granular	-

Note: At your request, we can manufacture Filter Sand of other Effective Sizes and Uniformity Coefficient.
Please understand that there are tolerances included in the above Effective Sizes.

Quality standard of our Filter Sand

	Our product sample No. 1	Our product sample No. 2	Quality standard (JWWA A103-1:2006-2)
Specific gravity (g/cm^3)	2.64	2.63	2.57 to 2.67
Washing turbidity (degree)	9	16	30 maximum
Ignition loss (%)	0.31	0.39	0.75 maximum
Friability (%)	0.40	0.51	3.0 maximum
Solubility in HCl (%)	0.16	0.31	3.5 maximum

Packing 20L in a PE bag, 0.6m^3 in a flexible container bag (Palletizing available)

More efficient design for Sand filtration

Suggestion of multi-media filtration

The single-media filtration by use of Filter Sand is widely spread as a general filtering method. However, in these days that the treated water quality standards are tightened in addition to the deterioration problem of raw water quality arisen from the growth of algae and Cryptosporidium, the part of [filtration], which is a key-point of water purification, becomes more important and performance improvement is required.

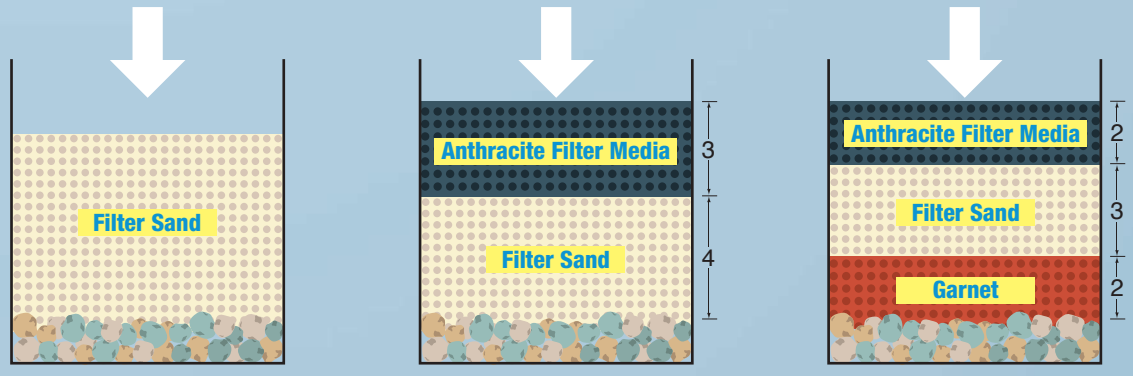
During the backwashing process, clarification of filter materials occurs. Here, the coarsest grains are at the bottom of filter, while the finest are at the surface. When a Filter Sand layer is thus formed, the fine sand layer at the top works as so-called the top-layer filtration (surface filtration) which filtrates almost all of suspended solids in raw water during filtration process and it causes early clogging of filtration layer, shortening the filter run length. Besides, water filtered at the surface sand only passes through the bottom sand layer at this time, thus resulting in no meaning to filtration effect.

However, if sand layers are laid reversely from top to bottom in the order of grain size, starting from coarser one to finer one, the raw water is removed of suspended solids in the order of larger one to smaller one under the most suitable condition and moreover the inter granular space of layer functions effectively. In order to realize the reverse layer formation, [Multi-media filtration] is designed by using filter media of different specific gravities. In this system, the top layer is comprised of filter media having small specific gravity and large grain size, while the bottom layer is comprised of filter media having large specific gravity and small grain size. In the actual filtration, Anthracite is used as filter media having smaller in specific gravity and larger in grain size than Filter Sand, and is laid on the Filter Sand layer after backwashing. Garnet is used as filter media having larger in specific gravity and smaller in grain size than Filter Sand, and is laid under the Filter Sand layer. Such filtration system by using some filter media together is generally called as [Multi-media filtration]. The [Dual-media filtration] by using [Filter Sand] and [Anthracite] is commonly adopted and [Tri-media filtration] by additionally using [Garnet] is specially adopted for more precise treatment.

Below are the special features of Multi-media filtration in comparison with the Mono-medium filtration by using Filter Sand only.

❶ **Much spaces for catching turbidity and high filtration effect called as “Deep bed filtration” can be realized.**
❷ **Head loss is smaller to the spaces for catching turbidity and filter run length is longer.**
❸ **Filtration rate (L.V.) can be increased.**
❹ **Washing water volume to the filtration rate can be decreased.**
❺ **More rapid filtration makes the filtration area smaller.**

Images of Mono-medium filtration and Multi-media filtration



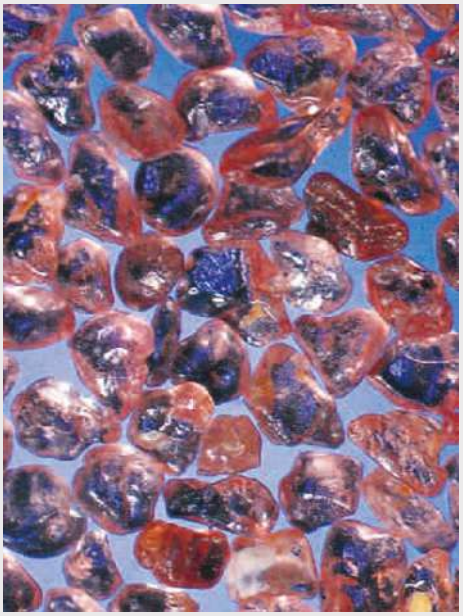
Mono-medium filtration by using Filter Sand

Dual-media filtration

Tri-media filtration

Removal object | Turbidity | SS | Fe

Garnet



As filtration technology has made progress, the method has been improved from "Mono-medium filtration" by use of Filter Sand to "Dual-media filtration" by use of Anthracite Filter Media together. In addition, there is "Multi-media filtration" by use of Garnet together, as an advanced filtration method for taking measures against Cryptosporidium, for pretreatment of pure water making, etc. Garnet is a reddish brown mineral having approx. 4g/cm3 of greater specific gravity and exercises it's performance by using smaller size compared with Filter Sand.

garnet

Standard products of our Garnet

Product	Garnet (for filtration)	Garnet (for support)
Size (mm)	0.30 as Effective Size	1.0 to 2.5 as size range
Uniformity Coefficient / Content	1.5 maximum as Uniformity Coefficient	85% minimum as content
Appearance	Granular	
Specific gravity (g/cm^3)	3.8 to 4.1	

Note: At your request, we can manufacture Garnet of other sizes.

Packing 12.5L(25kg) in a PE bag (Palletizing available)

Chemical composition example

Ingredients	SiO_2	Al_2O_3	Fe_2O_3	MgO	MnO_2	CaO
Content (%)	38.6	22.6	33.0	2.3	2.1	1.4

Note: Since Garnet is a natural mineral, the chemical composition fluctuates.

Support for Garnet

Since Garnet has greater specific gravity, if only Gravel is used for the support, layer-mixed condition may occur on the border between Gravel and Garnet. As a result, there must be one-sided flow of filtration and unevenness of Gravel layer surface, and it may be difficult to perform the filtration effect expected.
In case of using Garnet (for filtration), be sure to use Garnet (for support) just under Garnet (for filtration) as a top layer of support and use Gravel below them.

Removal object support

Gravel

Gravel is used for supporting granular filter media such as Filter Sand and Anthracite Filter Media that filter water. Gravel fulfills an important role not only to prevent filter media from flowing out of collecting equipment of filter in filtration process but also to distribute washing water evenly flowing into the filter in backwashing process.
Make the layer with 3 to 6 kinds of size in order from the big particles of Gravel, to prevent one-sided flow of filtration and unevenness of layer surface.

GRAVEL

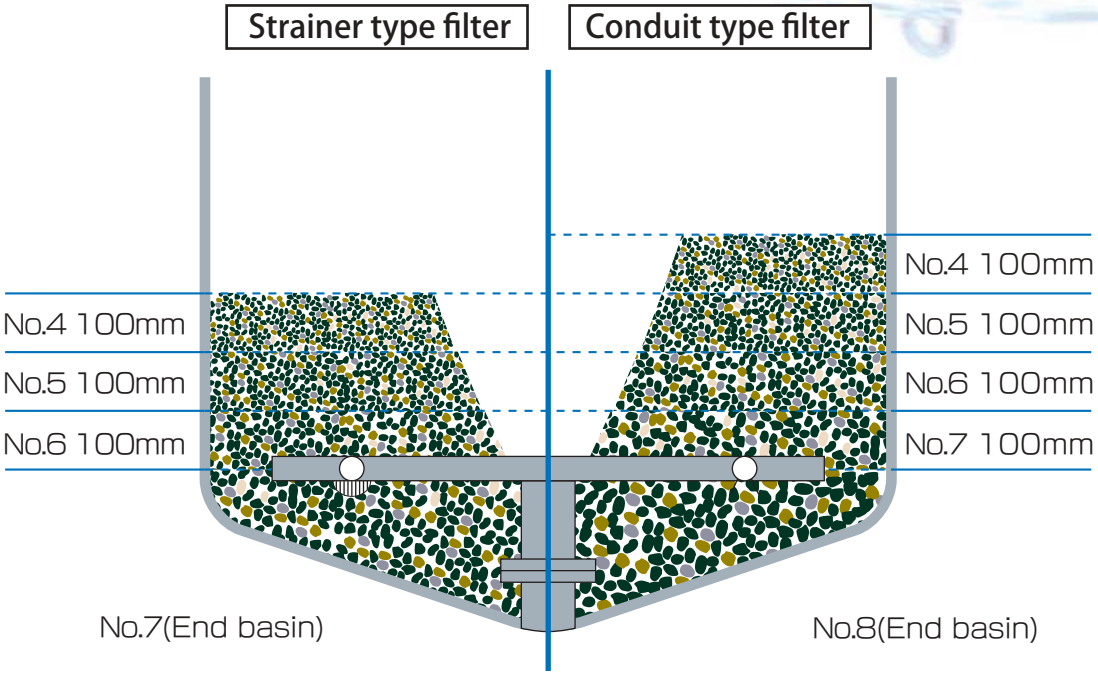
Standard products of our Gravel

Ref. No.	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9
Size (mm)	2 to 4	4 to 8	8 to 12	12 to 20	20 to 30	30 to 50
Content (%)	85 minimum					
Specific gravity (g/cm^3)	2.50 minimum					
Appearance	Clean and granular					

Note: At your request, we can manufacture Gravel of other sizes.

Packing 20L in a PE bag, 0.6m^3 in a flexible container bag (Palletizing available)

Gravel layer example



Catalytic Oxidation Method

How to use our Ferrolite series and Manganese Sand

1. Feeding Chlorine or Sodium Hypochlorite (Cl pre-feeding method)

If reducing substances are contained in the water, there is a possibility that the manganese film dissolves in water. Therefore, chlorine or sodium hypochlorite is continuously fed to activate the filter media. Ideal activation can be expected if the system is so designed as to feed the above additive not immediately before the filter plant but near the well or intake and to allow the additive to mix well with the raw water on its way to the filter plant.
Although a relatively large feeding quantity of chlorine or sodium hypochlorite is required to the newly filled filter media owing to activation of manganese film, the required feeding quantity of the said additive during normal operation of filter plant is theoretically 1.29 times the manganese content (mg/L) or 0.64 times the iron content (mg/L) of the raw water.
However, depending upon quantities of organic matter, ammonia and reducing substances contained in the raw water, it is necessary to add more feeding quantity to the abovementioned theoretical quantity.
As for the general guide line on feeding quantity of chlorine, if the feeding is done so that the quantity of residual free chlorine of the treated water immediately after the filter plant becomes 0.3 to 0.5 mg/L, this is the most effective and practical.

2. Layer thickness and flow velocity

Normally the layer thickness of filter medium is about 1.2 m and the flow velocity is 10 to 30 m/Hr, depending upon the turbidity, iron and manganese contents, and contents of humic acid, silica, etc. of the raw water. In the case where the flow velocity is to be accelerated, in principle, it is necessary to take a lager layer thickness in order to secure a sufficient space velocity (sufficient time for catalytic oxidation).
In this case, different from mere turbidity filtration with Filter Sand or Anthracite Filter Media, space velocity as well as line velocity should be taken into consideration in designing of the filter plant system.
Iron and manganese are co-existing in nearly every underground water. In accordance with their equilibrium potential, iron is oxidized first and manganese is oxidized after that. Therefore, iron is oxidized and removed at the upper part of filter vessel; manganese at the lower part of filter bed.
From this respect, if filtration is to be done with only one vessel, it is necessary to take a large layer thickness. When raw water contains large quantity of iron and manganese, or in the case that raw water contains iron hard to be oxidized and manganese, it is recommended to install two filter vessels connected in series, eliminating iron through the first vessel and removing the remaining iron and manganese through the second vessel. As to filter media to be employed, it is effective to use Toyolex F in the first vessel and Ferrolite in the second vessel.

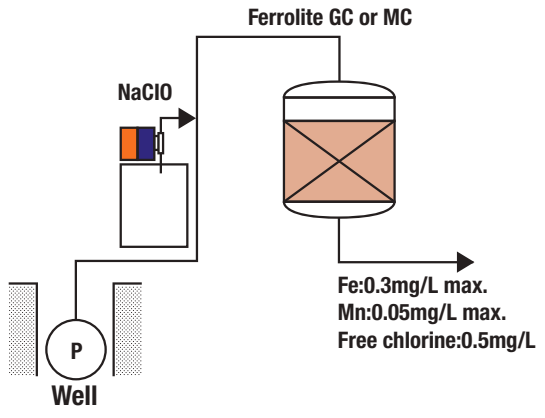
3. pH value of raw water

In principle, it is desirable that pH value of raw water is higher than 6.5. If pH value is lower, the film may lose its oxidizing power, and dissolve in water. In such cases, pH value should be adjusted beforehand so that it will be higher than 6.5.

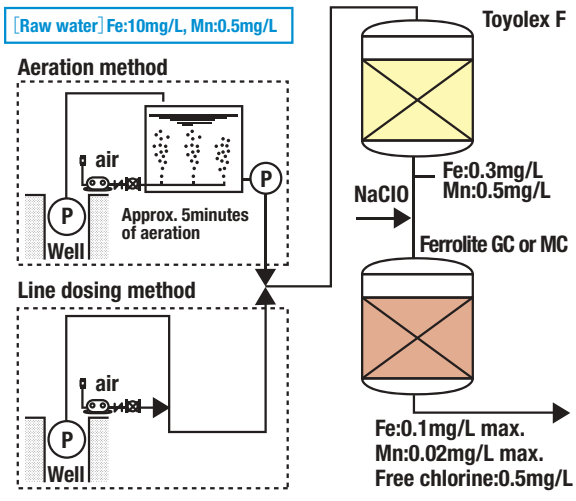
4. When raw water contains Ammoniac Nitrogen

When chlorine is fed to raw water containing Ammoniac Nitrogen, first the ammonia in raw water reacts with the chlorine, yielding chloramines (combined chlorine). With the feeding quantity of chlorine increasing, the quantity of residual chlorine increases and reaches the maximum value at a certain point, and starts to decrease after that. Then, the quantity of residual chlorine reaches the minimum point, after which it increases linearly in proportion to the feeding quantity of chlorine.

Typical Fe and Mn removing system by Ferolite GC and MC.



Special two vessel systems to remove high concentration of Fe and Mn.



Removal object Fe Mn

Ferrolite MC/GC series

There are many cases where the ground and river water contain iron and manganese owing to the geological environment. The water containing iron and manganese causes various problems when used as water for all industrial fields, not to speak of drinking water and city water. So the elimination of iron and manganese from the water is essential.
Mainly for the purpose to treat iron and manganese of high concentration containing in ground water, we have developed the catalytic oxidation filter media for iron and manganese removal, Ferrolite MC/GC series.

Features

1. High performance to remove iron and manganese.

Since the manganese content on the surface of media is much compared with conventional Manganese Sand, they exercise high performance to remove iron and manganese. As to removal of manganese in particular, while the administrative water standard prescribes that manganese content should be 0.05mg/L maximum, far less content can be achieved through these media. From these features, the filtration will be effective by use of Anthracite Filter Media as follows.

2. Long life.

The treatment method of iron and manganese removal by use of these media is contact-oxidation with chlorine dosing. The particular chemicals coating the surface of media act as catalysts to make the target substance adhere to the surface of media and remove them. It is not adsorption method such as activated carbon but continuously regenerated. So it is not needed to replace the media in short intervals but can be used in long intervals.

3. Easy trial operation

Activation of filter media required before trial operation is easy and can be finished in a short time. It exercises high removal performance from the beginning.

Standard products of our Ferrolite MC/GC series

Ferrolite MC series

It can be used for dual media filtration in combination with other filter media such as Anthracite Filter Media, Ceramics, etc. It can realize SS, iron and manganese removal from ground water together in one-filter vessel system according to circumstances, though it should be treated in two-filter vessel system so far.

Ferrolite GC series

Due to the light apparent specific gravity, the bed expansion is well in backwashing and washing water can be reduced. It results good use of water.

Product	MC1	MC2	MC3	GC1	GC2
Size (mm)	1.2 to 2.0	0.6 to 1.2	0.3 to 0.65	1.4 to 2.3	0.6 to 1.4
Content (%) in size	75 minimum			75 minimum	
App. specific gravity	1.0 to 1.2			0.65 to 0.75	
Appearance	Granular				

Note: Since ground water is various in quality on each site, it may be difficult to treat water appropriately. Contact us to design filtration rate, treated water quality, etc.

Packing for MC series 20L in a PE bag, 0.8m^3 in a flexible container bag (Palletizing available)

Packing for GC series 30L in a PE bag, 0.8m^3 in a flexible container bag (Palletizing available)

Removal object Fe Mn

Manganese Sand

Manganese can be removed from raw water by dosing chlorine into raw water containing manganese and making the water contact to filter media coated with manganese. This method is commonly called as "to remove manganese by manganese" utilizing catalysis of manganese. Manganese Sand is used in case of much manganese content in raw water at tap water treatment facilities such as waterworks.

Standard products of our Manganese Sand

Products	MS0	MS1	MS2	Size / Quality standard (JWWA A103-3:2006-2)
Effective Size (mm)	0.35	0.5	0.6	0.45 to 0.70
Uniformity Coefficient	1.5 maximum			1.7 maximum
Specific gravity (g/cm^3)	2.58 to 2.65			2.57 to 2.67
Manganese content	0.5mg/g minimum			0.3mg/g minimum
Appearance	Granular			-
Matrix	Filter Sand			-

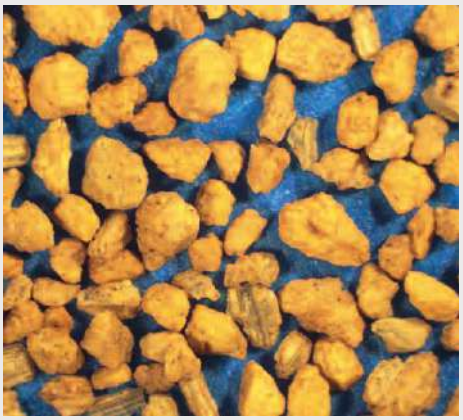
This product conforms to the selecting standard of Manganese Sand for tap water use (JWWA A103-3:2006-2).

Note: At your request, we can manufacture Manganese Sand of other Effective Sizes and Uniformity Coefficient. Please understand that there are tolerances included in the above Effective Sizes.

Packing 20L in a PE bag, 0.6m^3 in a flexible container bag (Palletizing available)

Removal object Fe

Toyolex F



For iron removal from ground water, contact oxidation made under the existence of catalysts and oxidizers is effective. It must be the most effective to use chemicals like chlorine as an oxidizer, but there is a case that chlorine cannot be used. Toyolex F series are contact oxidation filter media developed for air oxidation. They are ideal contact oxidation filter media lowering the running cost by using air as an oxidizer for treatment of industrial and house water that much volume of water is required.

Standard products of our Toyolex F

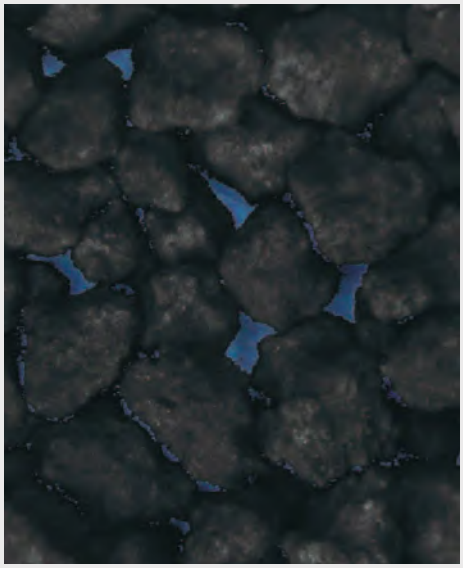
Product	F1	F2
Size (mm)	1.4 to 2.3	0.6 to 1.4
Content (%) in size	75 minimum	
Appearance	Granular	
Apparent specific gravity (g/cm^3)	0.65 to 0.75	
Matrix	Ceramics G1	Ceramics G2

Note:
- It is required to mix and dissolve raw water and air appropriately before the filter and set the reaction time for the use.
- It takes some time to activate the surface films of filter media for trial operation.
- Be sure to check the dissolved silica content in raw water before design. Much dissolved silica content may cause colloidal iron forming to obstruct iron removal.
- If there was a large quantity of free carbonic acid in raw water, be sure to let carbonic acid gas out of raw water before use.

Packing 30L in a PE or craft bag, 0.8m^3 in a flexible container bag (Palletizing available)

Removal object color Mn Fe

Radicallite UC3/SC3

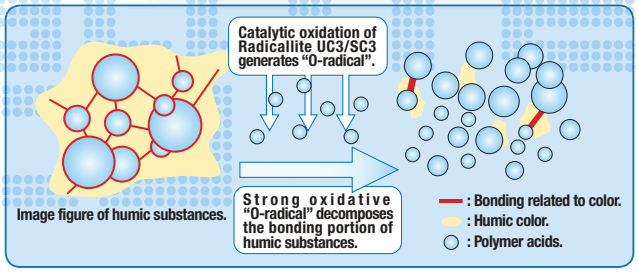


Humic color is…

Color, which results from humic substances being hard to be removed by normal water purifying (coagulating sedimentation, filtration, iron and manganese removal), is common in ground and river water. "Humic substances" is a generic name of dark brown organic in soil, being common in wide area of forest country in Japan, because it is ascribed as the cause that a microbe biodegrades primeval plant components. Since colored humic substances are in a few nm of size, relatively high molecular weight, it is difficult to remove it by physical filtration and also needs very high oxidizing power for oxidative decomposition.

Radicallite UC3/SC3

Radicallite UC3/SC3 are particular filter media developed for humic color removal. They act as catalysts for oxidizing reaction that a chlorine-based oxidizer such as Sodium hypochlorite (NaClO) generates strong oxidative O-radical (nascent oxygen) in water. This O-radical which has oxidizing properties breaks the bonding of humic chromophore and auxochrome, and that reduces color.



Features

- No generation of sludge.
- Simultaneous removal of coexistent manganese ion.
- Less backwashing intervals.
- Ease of routine maintenance.
- Easy adoption to existing equipment.
- Performance retention with annual replenishment.

Attention

Color regulated by quality standard for drinking water is 5 degrees maximum. Humic color is common all over Japan, but in case of 8 degrees or more of colored raw water and water quality fluctuation concerned, especially common in Kanto, Tohoku, Hokkaido regions, we recommend to use Radicallite UC3. In case of removing a little bit of raw water color (e.g. reducing a few degrees), we recommend to use Radicallite SC3. It is recommendable to do a verification test for selecting suitable filter media. Should you need further assistance, please contact us.

Note: Radicallite UC3/SC3 are not intended for removal of artificial pigment such as dye waste water.

Standard products of our Radicallite UC3/SC3

Product	UC3	SC3
Size (mm)	0.3 to 0.65	0.3 to 0.65
Content (%) in size	75 minimum	
Appearance	Black and granular	
Matrix	Ceramics M	
Apparent specific gravity (g/cm^3)	1.4 to 1.5	1.0 to 1.2
Color removal level	High	Low

Packing for UC3 20L in a PE bag, 0.6m^3 in a flexible container bag

Packing for SC3 20L in a PE bag, 0.8m^3 in a flexible container bag **(Palletizing available)**

Removal object **Turbidity** **SS** **Fe**

Ceramics M/G

Ceramics M

Ceramics M is manufactured by crushing and sieving porous material which is formed by difference of expansion ratio of clay ingredients in mixing clay produced in Aichi and Gifu Prefectures and sintering the mixed clay five to seven times. The specific gravity is 2.5 to 2.7 and the apparent specific gravity is 1.0 to 1.2. Due to the crushed form and high void percent, it is a kind of filter media that can catch much SS and perform in rapid filtration.

Ceramics G

Ceramics G is manufactured by sieving porous glass-rock pieces which is formed by explosive spouts of containing gas in sudden refrigeration and solidification of the third period volcanic rock. The specific gravity is high such as 2.4 to 2.6, but the apparent specific gravity is rather small such as 0.65 to 0.75. It is a kind of porous and light-weight filter media having high void percent.

Uses

1. Circulating filtration for swimming pools and public baths.
2. Filtration for fish-bleeding ponds and aquariums.
3. Filtration for waste water including oil and sewage.
4. Others such as various SS removal.

Standard products of our Ceramics M/G

Product	M1	M2	M3	G1	G2
Size (mm)	1.2 to 2.0	0.6 to 1.2	0.3 to 0.65	1.4 to 2.3	0.6 to 1.4
Content (%) in size	75 minimum			75 minimum	
App. specific gravity	1.0 to 1.2			0.65 to 0.75	
Appearance	Granular				

Packing for M 20L in a PE bag, 0.8m^3 in a flexible container bag

Packing for G 30L in a multi-paper bag, 0.8m^3 in a flexible container bag

(Palletizing available)

Other Filter Media

We also have Granular Activated Carbon (Coconut-basis TA-30N & Coal-basis TA-30C) and other Filter Media for special treatment purpose.
Please feel free to contact us for consultation.

Anthracite Filter Media (30L/bag)

Filter Sand / Gravel (20L/bag)

Ferrolite MC1 / MC2 / MC3 (20L/bag)

Packing style of our Filter Media

Garnet (12.5L/bag)

Container bag (up to 1,000L/bag)

Container bag loading (2 bags/pallet)

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