

What are KDF Process Media for filtration?

KDF (Kinetic Degradation Fluxion) process media are high-purity copper-zinc granules that reduce contaminants in water using an oxidation/reduction (redox) reaction. They are used in pretreatment, primary treatment and wastewater treatment applications in order to extend system life and to reduce **heavy metal** contamination, chlorine and hydrogen sulfide.



In which forms are KDF process media available?

KDF 55 granules: designed for removing or reducing chlorine and soluble heavy metals

KDF 85 granules: used to remove or reduce iron and hydrogen sulfide from water supplies

KDF-F fine mesh granules: can be incorporated into carbon blocks and other matrixes

KDF-C coarse mesh granules: are used for removal or reduction of soluble heavy metals and chlorine.

How do KDF Process Media work?

KDF process media work to reduce or remove chlorine, iron, hydrogen sulfide, lead, mercury, calcium carbonate, magnesium, chromium, bacteria, algae, and fungi. KDF media exchange electrons with contaminants, changing them into harmless components. During their reactions, electrons are transferred between molecules and new elements are created.

Heavy metals removal

KDF 55, KDF 8s and KDF-C media can remove up to 98% of water-soluble cations (positively-charged ions) of lead, mercury, copper, nickel, chromium, and other dissolved metals. When filtered through KDF media, soluble lead cations are reduced to insoluble lead atoms, which are electroplated onto the surface of the media. Other heavy metals bond to the media and may be recovered when the exhausted media pass through a copper smelter.



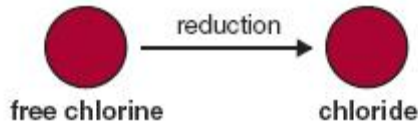
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Will the KDF Process Media control microorganisms growth?

KDF media control the build-up of bacteria, algae and fungi in organic based media such as GAC filters and in-line carbon filters, extending the life of the carbon as well as protecting downstream RO membranes and ion exchange resins from fouling.

KDF process media kill bacteria by direct electrochemical contact and by the flash formation of hydroxyl radicals and **hydrogen peroxide**, both of which interfere with a microorganism's ability to function.

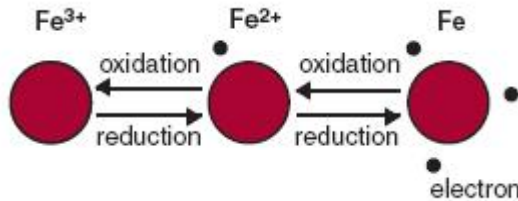
How are chlorine, Iron, hydrogen sulfide and heavy metals removed?



Chlorine removal

KDF 55 medium can remove over 99% of free chlorine by electrochemically reducing dissolved chlorine gas to water-soluble chloride ions.

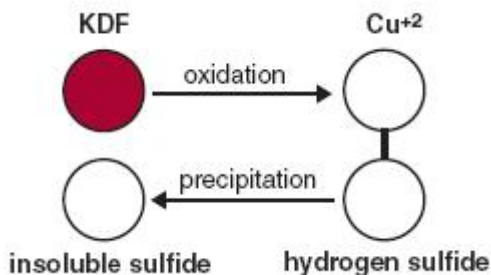
For chlorine removal in point-of-use applications, KDF media is incorporated into shower filters and into cartridge at the tap.



Iron removal

KDF process media remove iron from water, either alone or in combination with other treatment technologies used at the point-of-entry. KDF process media act as catalysts to change soluble ferrous cations into insoluble ferric hydroxide, which is easily removed by regular backwashing.

KDF 85 medium removes more than 90% of iron from groundwater supplies.



Hydrogen sulfide removal

KDF 85 medium eliminates H₂S by converting the hydrogen sulfide gas to insoluble sulfide, an inert, harmless precipitant. When hydrogen sulfide contaminated water enters the KDF filter, the copper in the KDF media loses an electron and the sulfur gains an electron and copper sulfide and water are formed. The copper sulfide is insoluble in water and can be backwashed off the KDF filter media. Periodic backwashing eliminates accumulations of the precipitant from the media bed.

