

FOOD & BEVERAGE

In the food and beverage industry dairy, abattoirs and meat processors, bottled beverages, breweries, baked products, and flour and cereal facilities there is a high demand for hygiene and water treatment in order to maintain high quality end product standards and prolong shelf life. Industrial food and beverage facilities test impurities in their production water and verify the efficiency of solutions to ensure that all process water consumed remains suitable for use in their production processes.

Main Concerns

With growing international and local pressure, the food and beverage industry has to look for new ways of steering its product development and achieving continual control over costs and health risks in a bid to meet the demands of its customers. As such, water is a major issue, whether it is an integral part of production processes, involved in product composition, or used for refrigeration, steam production or cleaning operations. To keep water consumption under control and ensure the reliable operation of its production, while taking account of seasonal variations and new product lines, industries are looking for a safe and top-quality water supply.

Iron is an essential micro-nutrient in soils, however iron dissolved in industrial irrigation water can cause problems when it precipitates. Iron and Manganese present a wide range of problems in many industrial applications that use untreated water including:

- ✓ **Clogging of irrigation lines**
- ✓ **Clogging of nozzles**
- ✓ **Staining**
- ✓ **After taste in food treatment**
- ✓ **Non compliance with Health Standards**

Beverage manufacturers and processors face unique challenges in the area of water treatment. Water sources, disinfection processes and treatment residuals can affect the taste and quality of the final product. Beer and soft drink production starts with a pure source of water. Drinking water often includes trace amounts of various ions that alter its taste. Contamination of beverage drink process water can result in loss of product (not only resulting in production losses, but also higher waste effluent surcharge costs), product recalls, and lost consumer confidence. Bottlers use filtering and other treatment equipment to remove residual impurities and standardize the water used to make drinks.





Fresh products facilities face significant financial losses due to decay as fresh produce from producer to consumer. Bio fouling from excess Iron and Manganese will stunt the growth of fresh produce and inhibit the supply of consumer crops to market.

In dairy, abattoirs and meat processors all water used must be compliant with the relevant guideline. From slaughtering to cleaning to processing – water source, process water and waste water has to be free from iron and manganese. Iron and Manganese contamination process water will infuse into product, create boiler issues and clog pipes and sprinklers.

Many of these problems adversely affect the underlying performance of the water reticulation systems in use, resulting in lost productivity, or the need to over invest in capital equipment.

DMI-65® is used in a wide variety of food and beverage applications including customers such as:



V&V Walsh Meat Processors & Exporters

V&V Walsh is Western Australia's leading Lamb & Beef producer who have been using DMI-65 filter media for several years.



Coca Cola Amatil Beverage Packager

Largest bottlers and distributors of non-alcoholic and alcoholic ready-to-drink beverages in Australia



Huon Aquaculture Salmon Breeders

Australia's premier producer of Atlantic salmon.





How DMI-65® Works?

DMI-65 is an extremely powerful silica sand based catalytic action water filtration media that is designed for the removal of Iron and Manganese without the use of potassium permanganate through an Advanced Oxidation Process. It also performs a mechanical filtration function for the removal of solids from the water.

Incorporation of DMI-65 in water treatment systems will materially reduce these symptoms and allow the reticulation systems to perform to their designated levels.

DMI-65 is infused technology and not just a surface coating technology, unlike other catalytic water filtration media, which removes the chance of any chemical leaching into the water stream.

In order to begin the process of oxidation of the iron (and manganese) in solution DMI-65 is designed to operate in the presence of chlorine or other oxidant. In this process the oxidant removes electrons and is consumed in the process. The operator needs to ensure that there is a 0.1 – 0.3 ppm free chlorine residual in the effluent water. Chlorine, fed as sodium hypochlorite or bleach (12.5% NaOCl), is the preferred oxidant since it is relatively inexpensive, readily available around the world and it is effective. It also performs the vast majority of any disinfectant process.

Unlike ion exchange resins where higher regenerant dosages will increase the ion exchange capacity, NaOCl residuals or concentrations higher than required to oxidize the Fe and Mn do not increase the oxidative properties of the media. Additionally, since the media is often used to pretreat waters prior to an RO system a higher free chlorine residual would require more extensive post treatment to reduce the residual and protect the membranes from chlorine attack.

Certification

DMI-65® is Tested and Certified Under Industry Standards: NSF / ANSI 61 Drinking Water System Components by the Water Quality Association of USA Gold Seal Program covering safety and health effects for drinking water components.

Compliant : Drinking Water Inspectorate safe to use according to: Reg. 31(4)(a) of water supply (Water Quality) regulations 2010 for UK, England and Wales.

DMI-65 has also been tested by many other water treatment authorities and laboratories.

DMI-65 is manufactured in Australia.

Call us for
more info



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Advantages of using DMI-65® in Food & Beverage

Regulatory Compliance

DMI-65 efficiently removes dissolved iron to the almost undetectable levels as low as 0.005 PPM and manganese to 0.001 PPM which will allow the use of treated water in the highly regulated food and beverage industry.

Reduced Costs

The total cost of the iron and manganese removal water filtration system is significantly less than alternative solutions, the effectiveness, but relative simplicity, of DMI-65 based systems reduces the upfront capital expenditure on plant complexity as well as the ongoing operational expenditure in chemicals, power and backwash waste water recovery.

High Flow Rates

The infused technology of DMI-65 promotes the *highest oxidation rate of any catalytic filtration media*. This permits a significantly higher water flow rate to achieve the same level of iron and manganese removal. DMI-65 can operate at linear filtration velocities up to twice that of conventional media with a corresponding reduction in capital equipment costs.

Regeneration Not Required

The media operates with a continuous injection of sodium hypochlorite at low residual levels (0.1 to 0.3 ppm) which eliminates the need for Potassium Permanganate.

High Load Capacity

Because of the increased surface area due to the micro-porous structure of the matrix material, the DMI-65 also has higher iron and manganese load capacity which can extend the duration of filter runs and the time between backwashing, thereby reducing downtime, operating expense and wastage.

Wide Operating Environment

Stable and satisfactory performance at pH 5.8 to 8.6 and a maximum operating temperature of 113° F (45°C) reduces the need for investment to alter the operating environment.

Long Life

DMI-65 is not consumed in the process, providing considerable advantages over other processes or media. The media does not display a decaying capacity to do its catalytic work. Over a 5 to 10 year period, through many backwashing operations of the bed to remove retained solids, an attrition loss of the media occurs by contact between particles and mechanical abrasion.





Case History

Texas, USA

A meat processing plant located in the Texas panhandle required a daily cleaning of the processing area. The water had 2 ppm of iron and 1.5 ppm of manganese resulting in frequent change-out of the cartridge filters on the water pump skids at a cost of \$6000 per week. In addition to this expense the water did not meet the FDA guidelines for food plant washdown water due to the presence of the iron and manganese.

In 2011, 768 ft³ of the DMI-65 was installed in a new 1500 gpm system comprised of sixteen (16) 54' x 60" filter vessels. Since the system was placed into operation the cartridge filter replacement went from weekly to semi-annually and the iron and manganese in the wash-down water is now within limits.



dmi65[®]




Applications & Industries We Serve

-  Drinking Water Treatment
-  Reverse Osmosis
-  Arsenic Removal
-  Mining Industry
-  Industrial Applications
-  Irrigation Systems
-  Landscape Reticulation
-  Cooling Towers & Boilers
-  Environmental Dewatering
-  Food & Beverage

Why DMI-65®?

-  **Expertise & Experience**
Years of industry experience, we offer knowledgeable & professional services
-  **Customer-Centric Approach**
We put YOU first, offering solutions tailored to your specific needs.
-  **Highest Quality**
We're committed to providing the highest quality in everything we do.
-  **Competitive Pricing**
Our rates are competitive giving you the best value for your money.
-  **Reputation**
We have built trust, professionalism and exceptional service within the community.
-  **Innovative Solutions**
Our cutting-edge technology is efficient and meets modern demands.

Call us for more info  **(+61) 1300 303 281**

