

Color Removal with MIEX® Treatment

for Industrial Effluent Treatment Applications

Color in Industrial Effluents

Color in industrial effluents can be due to numerous contaminants including dyes, lignin, and naturally occurring organic matter that pass through the manufacturing process and into the waste effluent. Depending on site operations, waste effluent may be discharged via a permit or reused on site. The nature of a permit or reuse application will dictate the degree of color removal required before discharge or reuse.

Although color is not a health concern, it is considered a contaminant for aesthetic reasons and is often regulated for discharge of industrial effluents. Should a manufacturer wish to reuse effluent, some degree of color removal is typically required to ensure product specifications are maintained and process equipment operation is not impaired.

The MIEX® Solution

The MIEX® Process is an advanced magnetic ion exchange process that utilizes MIEX® Resin for removing contaminants from effluent. The MIEX® Process is applied in a continuous manner that results in minimal waste volumes and highly targeted treatment.



Figure 1: Biologically treated pulp mill effluent (Left) & biologically treated effluent after MIEX® Treatment (Right)

When color is primarily due to the presence of organic carbon or other anionic contaminants, the MIEX®

Technology can be used to remove a portion of contaminants that result in high levels of true color. MIEX® Treatment can significantly reduce effluent color levels by 60% to 95%, depending on raw effluent characteristics.

The MIEX® Process delivers:

- Consistent treatment that is not subject to chromatographic peaking
- Lower waste volumes than alternative color removal technologies

- Small footprint
- Flexibility of placement in the treatment train
- Minimal energy use
- Removal of other anions



Figure 2: Dyehouse effluent comparison. Raw Effluent (Left), Existing coagulation (Center), MIEX® Treatment & coagulation (Right)

MIEX® Treatment Systems

MIEX® Treatment Systems are available as open tank gravity flow systems or enclosed pressurized systems. They come as packaged units up to 2 MGD (~7.6 MLD) or custom-designed systems for all capacities over 2 MGD.

For sites that have existing effluent treatment systems, MIEX® Pretreatment can be applied to take advantage of the following downstream process benefits:

- Improved downstream membrane performance
- Reduced chemical demand for downstream coagulation and/or disinfection
- Increased capacity of activated carbon

Feasibility studies can be conducted on water sources to determine the optimum performance of the MIEX® Process and appropriate system design parameters.

Contact Us

Visit our website at www.miexresin.com for more information. To inquire about a specific color removal application, email us at miex@orica.com or contact your regional office listed below.