

Looking for the finest clarity, taste and quality in your

BEER

**You need an all-natural
Diatomaceous Earth (DE)
filter system.**

The most experienced brewers in the world today use diatomaceous earth (DE) filter systems. Why? No other filter system can produce the amazing results of a DE filter. DE filters remove fine particles from beer without affecting the color, flavor, or body of the beer. Plus, DE is all natural, adaptable, and flexible, allowing you to adjust your filtration to your brewing standards and bring out the true “personality” of your beer. DE allows you to continue the art of brewing throughout the filtration process, producing the finest beer possible.

What is diatomaceous earth?

Diatomaceous earth (DE) is the skeletal remains of microscopic unicellular plants which lived in the ancient fresh and salt water lakes and oceans. The deposits, mined by EP Minerals, consist primarily of a particular species of fresh water diatom, the *Melosira Granulata*. Its unique, strong, cylindrical geometry, high pore volume, and low resistance to flow makes it an excellent filter medium.

Celatom® and CelaBrew®

We produce all natural DE filter aids to meet your brewing needs. Celatom and CelaBrew are available in a full range of grades with different degrees of permeability to meet your specific requirements. Celatom is our standard grade. The lower permeability grades form filter cakes, having small pores which produce a high degree of clarification. The higher permeability grades have larger pores and provide increased throughput. CelaBrew, our high purity grade, has reduced soluble iron and increases beer shelf life and stability.

Ep Minerals®
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Filtration FAQs: Common questions about diatomaceous earth (DE) filtration

Diatomaceous earth filtration systems are proven to provide the best quality beer at the lowest cost with the most flexibility. Diatomaceous earth is all-natural and still the predominant filtration system of choice for over 90% of brewers. Here are some of the common questions asked today:

Q: Why would you choose a DE filtration system?

A: DE filtration technology has been and remains the dominant filtration technology of the brewing industry for over 80 years. Thousands of systems have been installed around the world. DE filtration is usually selected to filter beer for several reasons:

- Low acquisition costs
- Readily available
- High efficiency, high throughput
- Excellent flexibility and adaptability (to achieve certain filtration characteristics)

Q: Why do brewers prefer DE filtration?

A: Beer making, and therefore beer filtration, is an art. A DE filtration system, by the sheer nature of the system being adaptable and flexible, allows the operator to adjust the system to bring out the best taste and best quality in beer.

Q: What is the overall best liquid filtration system?

A: Natural filtration is always best. Beer is a natural product and will exhibit variability at the filter. That variability requires a filtration system that is adaptable and flexible. You want a filtration system that will produce the finest beer possible, especially from a taste perspective. A natural DE filtration system works best for the following reasons:

- Adaptability to varying filtration requirements is easy
- A wide variety of filter aid permeability choices exist to meet specific beer brand challenges
- High throughputs with minimal footprint in the cellar
- Up to 6 times lower water consumption than membrane filters
- Up to 2 times lower energy consumption than membrane filters
- Low capital investment required. Low cost for filter media.
- DE filtration systems are indeed sustainable. The spent cake that is produced is recyclable.

Q: What is the main challenge in beer filtration, no matter the type of filtration technology?

A: The most difficult particles to remove from a liquid are those that are:

- Small (sub-micron)
- Biological in nature (soft & compressible)

Very small particles are not really solid particles at all, but are in a grey area of being partly solubilized macromolecules. In beer, some of these are important as they contribute to the foam stability, the color and texture of the brew and what's called "mouth feel". Other small particles cause haze and instability and need to be retained in the filter.

The problem with a filtration system (membrane) which is 100% based on particle size is that important components can be lost – components that add to the taste and "personality" of the beer. Only DE filtration technology is capable of a more selective filtration process, producing the finest quality beer.

Q: Is DE green?

A: DE is an all natural filter. Membrane filtration manufacturers have touted membranes as a safer, greener, and more convenient alternative to diatomaceous earth. Diatomaceous earth contains low levels of crystalline silica which with simple control procedures eliminate any potential health issues. It is true that "spent cake" is produced when using DE. Membrane filter companies have indicated that spent cake is not recyclable, but that has been proven incorrect, especially with recent developments in DE spent cake recycling, in wineries, farming, and other applications.

Q: What are the challenges with a membrane filtration system?

A: A membrane filtration system will significantly increase water and energy costs, simply because of how the technology works, leading to increased capital and operating costs. Membrane filters are complex to operate and maintain and require special sanitizing additives (enzymes, peroxides) and additional cleaning and maintenance procedures. Membrane filters can strip flavor and foam characteristics from the beer and are also prone to fouling, decreasing flux rate, and breakage/leaking problems that result in decreased production and increased maintenance costs. Membrane filters remove specific sized particles based on the size of the aperture in the surface membrane installed, so there isn't the adaptability that you'll see with a DE filter to make changes. Furthermore, the membranes are not commercially interchangeable with other suppliers systems reducing options for the brewer.

Let us work with you on a DE filtration system. Visit www.epminerals.com today for more information or call 1-800-366-7607.

