

Cheese Brine Clarification

Good quality brine is often used to “salt” and cure many different varieties of cheese, typically soft cheeses that still contain a certain amount of whey proteins. The brine and curing process is essential to cheese flavor, taste, rind and the appearance of the cheese.

To maintain its efficacy in curing the cheese and inhibiting bacterial growth, the chemical and microbiological composition of the cheese brine is kept within strict limits. Over time, however, the brine becomes enriched with fats, proteins and lactose and may contain undesired microorganisms (i.e. bacteria, spores, yeast and mold). For example, when submerged into a salty brine bath, the salt in the cheese tends to find an osmotic balance with the brine. This draws some of the whey (which contains whey protein) out from the cheese and into the brine bath. After a number of circulations through the brine bath, though, a balance between the salt and whey protein is established and very little whey protein (and sometimes casein) is washed into the brine. Eventually, the heavily contaminated brine must be replaced with a new brine solution or treated for reuse.

Disposal of cheese brine is very expensive due to the high content of salt. Although many traditional brine treatment methods exist (i.e. heat treatment, kieselguhr filtration or diatomaceous earth, UV treatment or even the addition of preservatives), membrane filtration has proven to be a superior technology for the sanitation of cheese brine as it physically removes the undesired microorganisms, dead cells and physical contaminants from the brine without making a significant change to its chemical composition. The benefits of using a membrane process to treat and reuse the cheese brine include:

- Improving cheese shelf-life by reducing the amount of yeast and mold cells in the brine solution
- Minimizing waste effluent requiring treatment
- Reducing costs and maintenance of systems by reusing the brine solution

TurboClean® Brine elements feature a microfiltration membrane that, when combined with the patented TurboClean hard-shell and 47 mil parallel feed spacers, offers excellent performance in clarification of cheese and other food brines. For more information or questions, please contact MICRODYN-NADIR.

TurboClean microfiltration elements are USDA-accepted sanitary products that comply with 3-A Sanitary Standard 45-03 and are widely used in dairy and other process applications.

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