

Hot Water Sanitation of 3M Filters

Introduction

Hot water sanitation is required in many applications to reduce bioburden populations and provide a sanitized (not sterile) environment. Hot water sanitation is generally preferred over chemical sanitation.

The temperature and duration required for hot water sanitation must be matched to the typical bioburden concentration of a given application for reliable sanitation. In general, the greater the bioburden concentration, the greater temperature and duration required; the lower the bioburden concentration, the lower the temperature and duration required*. The most common temperature-duration specifications are 80 °C for 30 minutes. Higher temperatures and longer durations, if required, can be validated on-site by the customer. Measuring the duration of the hot water sanitation cycle should begin only when the water exiting the filter has reached the desired temperature.

Below is a general outline for hot water sanitizing 3M filters.

- Always wear the appropriate protective clothing and follow all safety precautions when working with hot water and pressure. Never exceed the pressure/temperature ratings of the filter housing.
- Ensure the outlet valve is closed. Open the inlet and vent valve(s) on the filter housing (stainless steel filter housings are recommended).
- Begin flowing water at the desired temperature through the inlet of the housing at a flow rate not exceeding the recommended process flow rate (refer to product literature), usually at a differential pressure of < 2 psid.
- Once water emerges from the top vent valve, close it and open the outlet valve carefully, allowing water to flow through the filter assembly.
- Measure the water temperature at the outlet of the filter housing. Once it reaches the desired temperature, begin timing the cycle.
- Once the sanitation cycle is complete, discontinue flow through housing and close the housings valves.
- To reduce the housing temperature to the appropriate process temperature, allow the housing to static cool, or allow mixing with filtered cold water under flow conditions. It is also important to open the vent valve so that flow is directed to the top of the housing, to avoid trapping a pocket of hot water.

Further recommendations:

- Always use filtered water so as not to compromise the service life of the production filter.
- Sanitation flushing should be done in the forward flow direction only.
- De-aerated water is recommended for applications where oxygen pick-up is undesirable.
- Warm water regeneration (55 °C for 15 minutes) of the filter prior to hot water sanitation can reduce warm water soluble plugging constituents and extend filter service life in some applications. For more information, consult 3M Technical Brief 70020253400.

* There can be instances where even a low population of heat-resistant bacteria may require sanitation with a higher temperature/ longer duration than expected. Sanitation temperatures and duration should be validated by the users to address their particular circumstances.

Important Notice

The information described in this literature is accurate to the best of our knowledge. A variety of factors, however, can affect the performance of the product(s) in a particular application, some of which are uniquely within your knowledge and control. **INFORMATION IS SUPPLIED UPON THE CONDITION THAT THE PERSONS RECEIVING THE SAME WILL MAKE THEIR OWN DETERMINATION AS TO ITS SUITABILITY FOR THEIR USE. IN NO EVENT WILL 3M PURIFICATION INC. BE RESPONSIBLE FOR DAMAGES OF ANY NATURE WHATSOEVER RESULTING FROM THE USE OF OR RELIANCE UPON INFORMATION.**

It is your responsibility to determine if additional testing or information is required and if this product is fit for a particular purpose and suitable in your specific application.

3M PURIFICATION INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

Limitation of Liability

3M Purification Inc. will not be liable for any loss or damage arising from the use of the Product(s), whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability. Some states and countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.

**3M Purification Inc.**

400 Research Parkway
Meriden, CT 06450
U.S.A.

(800) 243-6894

(203) 237-5541

Fax (203) 630-4530

www.3mpurification.com

3M is a trademark of 3M Company.
© 2013 3M Company. All rights reserved.
Please recycle. Printed in U.S.A.
70020220268 REV 0213b

Your Local Distributor: