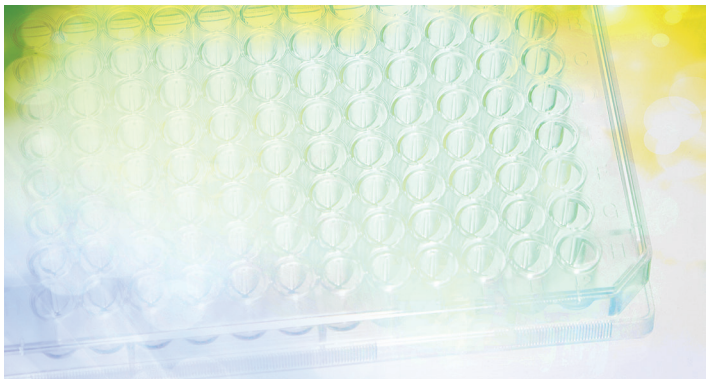
Sample handling

WebSeal well plates and mats

Frequently asked questions



Introduction

Selecting the perfect Thermo Scientific™ WebSeal™ well plates and mats for your chromatography requirements is easy using our selector tools and resources. Our well plates are designed for today's chromatographer, who uses well plate-compatible autosamplers. Rest assured, you'll get all the advantages of sample handling using plates, alongside the security of achieving reliable results and our decades of experience as the market leader in sample containers for chromatography.

1. **Does Thermo Fisher Scientific have a compatibility table for autosamplers?**
   Yes, click here for a list of chromatography autosamplers that are compatible with microplates.

2. **Is a cross-reference list available?**
   Yes, please visit thermofisher.com/webseal to view a tool that has the capability to match the new range of well plates and mats with a number of legacy suppliers and competitors by part number.

3. **Can Thermo Scientific well plates and mats be used on an automated liquid handling system such as: Tecan, Hamilton, and others?**
   Thermo Scientific Webseal microplate products adhere to the Society for Biomolecular Screening (SBS) microplate formats. Instruments from vendors such as Tecan, Hamilton, Gilson, PerkinElmer and others can be used within the instrument guidelines.

4. **Have the mats been tested for evaporation?**
   Yes, all mats that may be used with the well plates have been subjected to evaporation tests which are either gravimetric or chromatographic. Gravimetric testing results show the retention of volatile solvents over periods of hours to days. The chromatographic evaluation shows the repeatability of low concentration standards over typical chromatographic analytical cycles.

5. **What are the temperature limits for the WebSeal microplate products?**
   Polypropylene microplates and silicone mats will tolerate exposure to temperatures as low as -80° and may be stored in cryogenic conditions. Polypropylene microplates and silicone mats will tolerate exposure to temperatures as high as 121 °C for up to 15 minutes for the purpose of sterilization by autoclave. The upper temperature limit of these products for extended periods of time (up to 7 days of constant heating) is 100 °C.

6. **Will "legacy" products such as Thermo Scientific™ National™, Thermo Scientific™ Chromacol™ and Thermo Scientific™ Sun Sri™ continue to be available?**
   No, the National and Chromacol product portfolios are discontinued according to a discontinuation plan and will only continue long-term with the new Thermo Scientific portfolio. Suitable substitutes for most of the legacy products can be found within the new product offering.

   Most Sun-Sri products will be transferred to the new parts. A limited number of customer-specified products will continue until the alternatives are fully evaluated. A cross-reference list is available upon request from Detlev Lennartz (email: detlev.lennartz@thermofisher.com).

7. **Is there a discontinuation list available?**
   Yes, there is a change note with a list of discontinued items and a discontinuation timeline.

8. **Do these plates work with protein and bio analysis matrix?**
   Plates are not compatible with ELISA and other fluorimetic or luminescent measurements or assays. If used as sample collection plates for peptides and other bio-molecules followed by separation on Bio-LC or SEC systems, then these are suitable products. If the final destination of the sample workflow is a HPLC system, then these are valid product choices. If used for non- chromatographic techniques, then other plate products may be more suitable.

9. **Are WebSeal products compatible with GC-MS?**
   When using polymeric sample containers for GC or GC-MS applications, it is always important to consider the impact of background extractible compounds on the analysis. The presence of plasticizers and nucleation agents in the plastic material is the main source of background contamination. Efforts have been made to use only those plastics which are low in such additives.

   WebSeal silicone mat products have been extensively evaluated for premium performance with regards to purity. Most work has been to determine that the resins are chromatographically acceptable with MeOH, Acetonitrile and n-Heptane. The conditions we used for creating extractable data (temperature, column, detector, sensitivity, etc.) are published on thermofisher.com/webseal. Review of the chromatographic data will assist you in determining the suitability of specific products. In many cases we can recommend our products for GC as well as HPLC applications.

10. **Do standard plates bleed with organic solvents, or is it better to purchase certified plates?**
    If you are using high concentrations of organic solvents in your sample, then you may be concerned about “bleed”. This is a term which normally implies a constant loss of material from the column or separation system which leads to high background levels, increased noise and loss of sensitivity.

    If using solutions with a high level of buffer or water, then this should not be a concern as such components will not leach under these conditions. All plates may be used.

    The evaluation of the plastic resins used in the production of plates was also carried by controlled extraction of leachable components with organic solvents associated with HPLC and GC operation. These included methanol, acetonitrile and hexane. Standard plates showed low level of extractables when tested at the highest instrument sensitivity range. These extractables found are characteristic of the common materials used for microplates in the clinical market and plates that have been used for general purpose chromatography applications. **This indicates that for many non-critical applications and with higher concentrations of sample the standard quality plates will be acceptable.**

    These plates are termed Chromatography Tested.

    The very low levels of background extractables found during our testing of some plates showed for applications run at more sensitive instrument settings or where higher purity of the plate is required you should directly switch to the certified plates as they are the lowest extraction polypropylene (PP) plates currently available in the world market.

    For critical analysis with high organic solvent concentrations and low sample concentrations the certified product range should be the plates of choice.

11. **How do WebSeal-certified low bleed plates compare to others?**
    Well plates are manufactured in molds. In order to “force” the ready produced plate to come out of this mold for the next shot, some manufacturers use release agents (organic compounds that act as lubricants). These release agents can be found in your chromatogram! The grade of polypropylene used by most plate manufacturers can contain monomers or other added ingredients that are susceptible to leaching on contact with organic solvents. WebSeal-certified product is manufactured from high purity resins and use a process that does not require mold release agents and that it why they exhibit no significant background extractables.

12. **How do the Thermo Scientific™ WebSeal™ Plate+ products compare to standard and certified products?**
    The WebSeal Plate+ coating provides additional surface protection that further reduces the possibility of interactions with solvents, sample components or other materials. WebSeal Plate+ microplates display ultra-low background extractable organics profiles that compare favorably to our mass spectrometry certified vial products.

13. **What is the best way to seal a WebSeal Plate+ or plates with glass or Polytetrafluoroethylene (PTFE) inserts that need to be incubated at elevated temperatures?**
    WebSeal Plate+ or plates with glass or PTFE inserts should never be sealed with tapes or adhesive foils. Silicone mats should be used with the WebSeal Plate+ products, preferably with a protective PTFE film to give increased chemical protection.

    The glass inserted plates are sealed with specific silicone plug mats or individual caps. Again, most have additional PTFE films of layers to give increased chemical protection.

    These plates, inserts and mats were originally designed for combinatorial chemistry techniques with in situ chemical derivatization. Use with elevated temperatures is possible with the inserts and plugs. These are the closest plate format equivalent to glass autosampler vial products.

14. **Are bar-coded plates available?**
    Yes, some plates are available as catalog product for the family of Thermo Scientific™ Vanquish™ UHPLC systems only.

    However, in general, plates can be provided with a pre-printed adhesive label applied as custom product with customer specific information. Contact your sales representative to assist with completing a form. You can define the barcode information and the location of the application on the plate. Additional information required includes the physical requirements for the label such as temperature stability, solvent stability, etc.

Learn more at **thermofisher.com/webseal**

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