LIKE OIL AND WATER, AND ETHYLBENZENE?

Tips from the Service Bench

INTRODUCTION

When pumping liquids, you must be sure flow path wetted materials are compatible with intended media. If not researched and tested, issues may arise in the field that may impact product life and maintenance schedules.

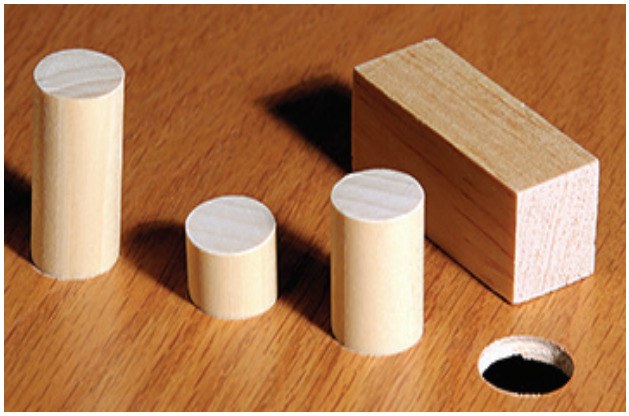
While Chemical Compatibility Charts are a good place to start your research, there is typically a standard disclaimer at the bottom that limits their application and places the responsibility on you the buyer, such as:

> ***Warning:*** *The information in this chart is to be used as a guide, ONLY. Although believed to be accurate, actual decisions on material selection need to be thoroughly tested and evaluated by the customer for each specific application. It is the full responsibility of the customer to perform and evaluate the compatibility of materials for their specific requirements. The manufacturer takes no responsibility, etc., etc…*

DISCLAIMER

ARE WE COMPATIBLE?

Polymer components exposed to incompatible media can experience swelling or loss of physical properties. When severe, these effects can lead to degradation of pump performance, reduced pump life, leakage, and even pump failure. These issues are avoided with proper material selection. Many pump manufacturers provide a selection of flow path materials to meet most needs, and some provide additional material options for exceptional cases.

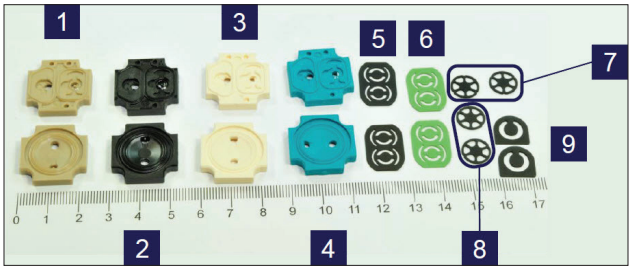


TESTING OUR RELATIONSHIP

Technology **TIP**

OEM

So, how do you go about testing chemical compatibility? You can get test swatches of possible polymer materials. But, results using test swatches can be less than applicable since they may be much thinner or thicker than the actual parts used in pumps. KNF offers a better way to assist your compatibility decisions, with our Chemical Resistance Test Kit (p/n 173610). This kit contains our most popular head plates and elastomer valves materials. These are actual production parts in current use, so they offer the best test subjects possible. For each material, two parts are supplied – one for resistance testing, the other as a comparison reference. Simple instructions will guide you through the static soak test process.



Test kit materials included are:

1. PEEK	4. PP	7. EPDM
2. PPS	5. FFKM - A	8. FFKM - B
3. PVDF	6. FKM	9. FFKM - C

SUMMARY

In a typical fluidic system, component lifetime will be influenced by several variables beyond simple compatibility of the liquid media, including chemical concentration, liquid temperature, operating pressure, flow rate, and exposure to abrasive materials. A static soak test cannot, therefore, replace a long-term validation test with a pump running in a real system under system parameters. But, a static soak test is well suited as part of an initial screening to identify and eliminate materials which are clearly incompatible with expected liquids.

Contact KNF today for a Chemical Resistant Test Kit and get pumping with confidence!

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