

Below email sent to 3M from 2014::

We are using FC-4400 as an additive to FC-7200 in order to deal with electrostatic discharge problems in a cooling circuit. The equipment that is in the cooling loop consists of several different materials, among them metals, Teflon and Tygon tubing, carbon-fiber composite surfaces and PEEK plastic components. In addition, there may be seals in the chiller that is part of the circuit.

Even though the effective concentrations are low, 'a few drops' of FC-4400 in 6 quarts of FC-7200, and likely will cause no problems, the equipment we are cooling represents several million dollars, so we want to convince ourselves that this is OK.

Would you have data on the compatibility of FC-4400 with these materials?

Reply.....

FC-4400 is very stable and I would not expect any compatibility issues. However, we have not done any testing in a system like you will be using. Typically, the FC-4400 is used as an antistatic additive in polymer systems. I would not expect any issues with metals. We use metal reactors in the process of making FC-4400 with no issues. Additionally, the FC-4400 is used in metal extrusion equipment at temperatures ranging from 150 to 300 C with no reported issues. As the intended use of the FC-4400 is for polymer systems, I would not expect any compatibility issues with the polymers you mention.

One item that could be an issue is FC-4400 absorbing into the polymers. The main concern with this would be losing the performance that you are looking to gain by adding in the FC-4400 as it is no longer in the fluid.

I hope this helps. Please let me know if I can be of assistance in any other way.

Jason

Jason M. Kehren | Senior Product Development Engineer
3M Electronics Markets Materials
3M Center, Bldg. 236-2B-01 | St. Paul, MN 55144
Office: 651 733 3644
jmkehren@mmm.com | www.3M.com

We are using FC-4400 as an additive to FC-7200 in order to deal with electrostatic discharge problems in a cooling circuit. The equipment that is in the cooling loop consists of several different materials, among them metals, Teflon and Tygon tubing, carbon-fiber composite surfaces and PEEK plastic components. In addition, there may be seals in the chiller that is part of the circuit.

Even though the effective concentrations are low, 'a few drops' of FC-4400 in 6 quarts of FC-7200, and likely will cause no problems, the equipment we are cooling represents several million dollars, so we want to convince ourselves that this is OK.

Would you have data on the compatibility of FC-4400 with these materials?

Kind regards,

Hubert