

ktwerner@mmm.com
10/12/2006 12:14 PM To
Margaret Sheppard/DC/USEPA/US@EPA
cc

bcc

Subject
L-19398

History:

This message has been forwarded.

Margaret,

Thanks for taking the time to talk with me today. I have summarized our discussion below.

Perfluorocarbon (PFCs) liquids produced by 3M or perfluoropolyethers (PFPEs) produced by other manufactures are sold into heat transfer applications in the semiconductor and electronics industries. As you know these materials are not ozone depleting substances but they do have long atmospheric lifetimes and high global warming potentials. In 2001, 3M commercialized HFE-7500 as part of our continued effort to replace PFCs and PFPEs through a range of boiling points. When I discussed this issue with the U.S. EPA SNAP office in 2001, I received the attached response.

(See attached file: HFE-7500 Letter from EPA.doc)

Please recall that HFE-7500 can't be commercialized in Japan because it does not pass the bioconcentration study that is required in Japan. The Japanese BCF study requires use of solvents and emulsifiers to drive the test compound into the water. The study result is irrelevant because, on the basis of its physical properties HFE-7500 will never partition to water, sediment, or soil where it is available for bioconcentration.

3M now intends on commercializing a new material (L-19398) that is very similar to HFE-7500 that has passed the Japanese BCF study and so it can be used to replace PFCs and PFPEs in Japan and in other regions of the world. The new material boils at essentially the same boiling point as HFE-7500 and has the excellent low temperature heat transfer and dielectric properties that are valued by the semiconductor and electronics industries.

As with our other HFE products, L-19398 is non-flammable, low in toxicity, not an ODS, and has a substantially shorter atmospheric lifetime and global warming potential than PFCs and PFPEs. The atmospheric lifetime has been measured to be approximately 9 years (compared to an estimated 3000 yrs for PFC and PFPE liquids) and the global warming potential has been estimated at 700 (100 yr ITH). Substitution of L-19398 for PFCs and PFPEs in targeted applications will result in a > 90 % reduction in the climate impact.

On the basis of the points made in the attached letter, 3M will not be seeking approval under the SNAP program for commercialization of L-19398. However, 3M also recognizes your office's interest in replacing compounds with high global warming potential and the voluntary programs that are

underway with the semiconductor industry to reduce emissions of greenhouse gases so we wanted to alert you to the introduction of this new product. I will let you know when the PMN is submitted.

As you did with HFE-7500, would you please send a letter documenting your position regarding the need for SNAP review of L-19398. This type of documentation has proven useful in fostering transition to more sustainable solutions by our U.S. customer base.

Thanks in advance for your help on this issue

Kurt T. Werner, DABT
EHS Manager
3M Center, Bldg. 236-1B-10
St. Paul, MN 55144