

QUESTIONS AND ANSWERS ON THE NEED FOR THE FATE OF  
FLUOROchemicals PHASE II STUDY

1. Don't we already know enough about fluorochemical environmental problems?
  - A. We do know a good amount since we have been studying the fluorochemical products for approximately 10 years, but still some important questions remain unanswered.
2. The 3M fluorochemicals are small volume products, why would anybody worry about them?
  - A. They are halogenated, persistent, and some have been shown to accumulate in people and animals. These are characteristics common to many of the known environmentally hazardous chemicals. While fluorochemicals can most often be found at concentrations which by themselves are too low to cause adverse effects, in combination with other environmental materials, they could contribute to adverse effects.
3. I can see doing health effects testing, but environmental, no one really is concerned about that.
  - A. While one could get that impression from the paucity of environmental data being submitted with premanufacturing notices, we feel, on the contrary, that Americans are very concerned about the potential adverse effects of chemicals on the environment. Some fluorochemicals will likely accumulate in the environment, while others could degrade from nonhazardous to potentially more toxic forms.
4. Fluorochemical acrylates and urethanes are nontoxic and stable. Why study them?
  - A. It's correct that the acrylates and urethanes show little toxicity. Much of this biological inertness is probably due to their high molecular weights. Our major question is whether their degradation could occur over time in the environment, releasing more potentially hazardous low molecular weight fluorochemicals.
5. If EPA or environmental activists attack 3M fluorochemicals based on SAR\*, don't you know enough already to refute their arguments?
  - A. We have enough information now to cast doubt on the validity of using current SAR techniques on fluorochemicals. But I think we would be in a defensive posture. With an increased understanding of the applicability of current SAR procedures to fluorochemicals and with the development of SAR capabilities for fluorochemicals, we could instead give a positive image of being aware of the environmental properties of our products.

\*Structure Activity Relationships - used to estimate properties from chemical structure when lab data is absent.

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**Exhibit  
1287**

State of Minnesota v. 3M Co.,  
Court File No. 27-CV-10-28862

Trial Exhibit 24

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6. Analytical problems stymied much work in the first Fate of Fluorochemicals program. How do we know that won't happen again?
- A. There are several reasons why this is not likely to be as significant a problem in the Phase II study. First, analytical capabilities on fluorochemicals have advanced significantly in the last four years. Second, the Fate of Fluorochemical Phase II program is designed to use general analytical procedures for fluorochemicals whenever possible. Third, carbon-14 label compounds will be used whenever possible to limit the need for costly and more difficult specific analytical methods.
7. You are asking for \$100,000 now over a 3-year period. How do we know you won't be asking for even more in the future?
- A. It is certainly possible that the study could have results that would lead to the need for further testing. However, by asking the major questions now in an organized and noncrisis manner, and by developing SAR capabilities and an environmental data base on selected fluorochemicals, we will be able to make better predictions about the environmental risks of most fluorochemical products in the future.
8. If you had all the information from the testing you suggest, would it decrease the day to day cost of studying fluorochemical products?
- A. The reduction in day to day costs would probably be small since most of these costs involve studying formulated fluorochemical products and developing a minimal data base specific to that product. The information, however, would help us in making more accurate predictions about the environmental movement and effects of the fluorochemical components of these products - in other words, increase the reliability of our risk analyses.
9. We feel the idea of a Fate of Fluorochemicals program is good, but it's too expensive for just an "insurance policy."
- A. We don't look at the Fate of Fluorochemicals Phase II proposal as being solely an insurance policy to prevent a loss of business. While it may be helpful in that respect, we feel the most important need for the study is to increase our own awareness of the environmental properties of our products so that we can be more secure in our predictions that fluorochemicals will not cause costly and possibly irreversible environmental problems.
10. If we can only partially fund this proposal, which part should we do?
- A. That's why we have prioritized the proposal (Table 15, p. 88). The proposal is designed so that we will do the most important testing first and build upon that base.

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11. How do we know the cost for doing this study won't be overrun?
- A. We have done our best in making conservative and realistic estimates of the cost. Obviously, the program can be fine tuned at any time, timetables lengthened, etc., to accommodate short term financial needs or manpower limitations.

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