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3M

VIA HAND DELIVERY

ORIGINAL

January 30, 2002

Document Processing Center (7407)
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
401 M Street SW
Washington, D.C. 20460



FYI-00-001378

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OPT/TOXICAttention: For Your Information Docket - Docket No. AR-226

Re: Information on Perfluorooctane
Sulfonates and Related Compounds

Dear Sir or Madam:

This continues 3M's voluntary submissions of data on perfluorooctane sulfonates and related compounds, as part of our ongoing dialogue with EPA regarding fluorochemicals. We are enclosing one compact disc (CD) containing a number of studies, as more fully described below.

Contents of Submission

The enclosed information covers perfluorooctane sulfonates and certain related compounds as noted in previous submissions. For some of these materials, however, no additional information has become available since our December 2001 submission.

In this submission, we are enclosing primarily new study reports, with accompanying analytical reports. However, for convenience, the enclosed CD also includes copies of reports related to the perfluorooctanoate monkey study that the Association of Plastics Manufacturers in Europe (APME) recently submitted to both the TSCA 8e and AR-226 dockets.

On the enclosed CD, you will find:

- A copy of this cover letter.
- An index to the toxicology and environmental studies, and copies of those studies.

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- A bibliography of published literature. This updates the bibliographic references we have previously provided. Please note that we have not included in this bibliography abstracts of presentations to the Society of Environmental Toxicology and Chemistry.

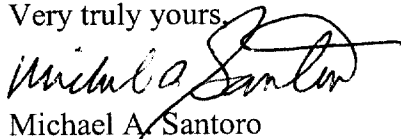
As in our past submissions, we have organized the studies by chemical, and within the sections for each chemical, by endpoint or type of study. There are no new epidemiology or medical surveillance studies since our December 2001 submission.

CD Submission

We are submitting the enclosed materials in CD form only, without paper copies. We understand that EPA and OECD representatives have found this format most convenient. The CD is for read-only purposes and is not to be modified. 3M will maintain the original CD copy of the documents. As indicated in the note prefacing the CD, 3M's original CD will control in the event of any discrepancy.

We will continue to provide information as it becomes available. We look forward to our continuing dialogue with the agency. Please feel free to contact me with any questions.

Very truly yours,



Michael A. Santoro
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Safety and Regulatory Affairs
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Dr. Oscar Hernandez

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3M FLUOROCHEMICAL SUBMISSION

TOXICOLOGY, EPIDEMIOLOGY AND MEDICAL SURVEILLANCE STUDIES

PFOS	Perfluorooctanesulfonate
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Repeat Dose Studies

1. PFOS 6 Month Monkey Study
 - a. Final Report, 26-Week Capsule Toxicity Study with Perfluorooctane Sulfonic Acid Potassium Salt (PFOS; T-6295) in Cynomolgus Monkeys (Covance Study No. 6329-223), 3M Reference No. T-6295.7, January 11, 2002.

[Note: the analytical report to accompany this study was included in 3M's December 22, 2000 submission. It appears on CD #3 of the fluorochemical submissions, where the December 2000 submission begins on the fifth page of the index.]
2. Two-Year Bioassay
 - a. Final Report, 104-Week Dietary Chronic Toxicity and Carcinogenicity Study with Perfluorooctane Sulfonic Acid Potassium Salt (PFOS; T-6295) in Rats (Covance Study No. 6329-183), 3M Reference No. T-6295, January 2, 2002.
 - b. Analytical Laboratory Report, Determination of the Presence and Concentration of Perfluorooctanesulfonate (PFOS) in Liver and Serum Specimens of Crl:CD(SD) IGS BR Rats Exposed to Perfluorooctane Sulfonic Acid Potassium Salt (PFOS T-6295), 3M Environmental Laboratory Report No. TOX-002, Laboratory Request No. U2121, 3M Reference No. T-6295.4, February 21, 2001.

N-Ethyl FOSE alcohol	N-methyl perfluorooctane sulfonamidoethanol
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Repeat Dose Studies

1. 2 Year Bioassay
 - a. Final Report, 104-Week Dietary Carcinogenicity Study with Narrow Range (98.1%) N-Ethyl Perfluorooctanesulfonamido Ethanol in Rats (Covance Study 6329-212), 3M Reference No. T-6316.1, December 13, 2001.

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- b. Analytical Laboratory Report, Determination of the Presence and Concentration of PFOS, PFOSA, PFOSAA, EtFOSE-OH, M556 and PFOSEA in Serum and Liver Samples of Crl:CD(SD) IGS BR Rats Exposed to N-Ethyl Perfluorooctanesulfonamido Ethanol, 3M Environmental Laboratory Report No. TOX-001, Laboratory Request No. U2103, 3M Reference No. T-6316.1, June 6, 2001.
- c. Analytical Laboratory Report, Determination of the Presence and Concentration of PFOS, PFOSA, PFOSAA, EtFOSE-OH, M556, and PFOSEA in Serum and Liver Samples of Crl:CD(SD) IGS BR Rats Exposed to N-Ethyl Perfluorooctanesulfonamido Ethanol, 3M Environmental Laboratory Report No. TOX-003, Laboratory Request No. U2104, 3M Reference No. T-6316.1, June 6, 2001.

Teratology Studies

- 1. Two Generation Rat Reproduction
 - a. Amended Analytical Laboratory Report, Determination of the Presence and Concentration of PFOS, M556, PFOSAA and PFOSA in the Liver and PFOS, M556, PFOSAA, PFOSA, and EtFOSE-OH in the Sera of Crl:CD BR VAF/Plus Rats Exposed to EtFOSE-OH, 3M Environmental Laboratory Report No. TOX-012, Laboratory Request No. U2095, 3M Reference No. T-6316.15, May 31, 2001.

[Study and initial analytical report submitted December 22, 2000 on CD #3.]

PFOA	Perfluorooctanoic acid
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Repeat Dose Studies

- 1. PFOA 6 Month Monkey Study
 - a. Final Report, 4-Week Capsule Toxicity Study with Ammonium Perfluorooctanoate (APFO) in Cynomolgus Monkeys (Covance Study No. 6329-230), 3M Reference No. T-6889.2, December 18, 2001.
 - b. Final Report, 26-Week Capsule Toxicity Study with Ammonium Perfluorooctanoate (APFO) in Cynomolgus Monkeys (Covance Study No. 6329-231), 3M Reference No. T-6889.3, December 18, 2001.
 - c. Analytical Laboratory Report, Determination of the Presence and Concentration of Perfluorooctanoate Fluorochemical in Liver, Serum, Urine and Feces Samples, 3M Environmental Laboratory and Centre Analytical Laboratories Report No. TOX-226, Laboratory Request No. U2782, 3M Reference No. T-6889.3, June 11, 2001.

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ENVIRONMENTAL STUDIES

PFOS	Perfluorooctane Sulfonate
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Environmental Fate & Transport

1. Photolysis of PFOS Potassium Salt (direct and indirect)
 - a. Amended robust summary, 3M Environmental Laboratory, January 25, 2002

[Report and initial robust summary submitted June 28, 2001; amendment contains minor correction]

Ecotoxicity Elements

1. Acute toxicity to Rainbow Trout
 - a. Robust summary
 - b. Final report, PFOS: A 96-hour static acute toxicity test with the rainbow trout (*Oncorhynchus mykiss*), Wildlife International, Ltd., January 7, 2002
2. Acute Toxicity to Sheepshead Minnows
 - a. Robust summary
 - b. Final report, PFOS: A 96-hour static-renewal acute toxicity test with the sheepshead minnow (*Cyprinodon variegatus*), Wildlife International, Ltd., January 7, 2002

PFOA	Perfluorooctanoic acid
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Environmental Monitoring

1. 3M Lifetime Drinking Water Health Advisory for Perfluorooctanoate
 - a. Report, 3M Corporate Toxicology, January 25, 2002

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BIBLIOGRAPHY

PFOS	Perfluorooctanesulfonate
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Matsumoto M, McNamee CE, Bossev DP, Nakahara M, Ogawa T (2000). Structure of salted-out, solubilized micelles and microemulsions on the perfluorinated anionic surfactant tetraethylammonium perfluorooctyl sulfonate studied by cryogenic transmission electron microscopy. *Colloid & Polymer Sci.* 278:619.

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N-EtFOSA	N-ethyl perfluorooctane sulfonamide
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N-EtFOSE	N-ethyl perfluorooctane sulfonamidoethanol
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Case MT, York RG, and Christian MS (2001). Rat and rabbit oral developmental toxicology studies with two perfluorinated compounds. *Int. J. Toxicol.* 20:101-109.

PFOA	Perfluorooctanoic acid
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Kudo N, Suzuki E, Katakura M, Ohmori K, Noshiro R, Kawashima Y (2001). Comparison of the elimination between perfluorinated fatty acids with different carbon chain in rats. *Chem. Biol. Interact.* 134:203-216.

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