

Internal Correspondence

3M Restricted

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From: R. M. Flynn (6-1473) * FCTC * 236-3A-04

Subject: ECM Meeting Notes

Date: August 3, 1993

Attached to this note is the working document prepared by Robert Howell and Eric Reiner dealing with the environmental concerns of our fluorinated products. Please look it over and make comments. Send your comments to me and I'll compile them and get them over to Robert. Thanks for your help.

Rick
Rick
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attachments

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ATMOSPHERIC CONCERNS

	USA	EUROPE	JAPAN
Concerns and Technical Issues	- Global warming of PFCs - Global warming - HFCs - Ozone Depletion - methyl terminated HFCs being implicated - VOC - Solvent based prod. - PFC Fugitive Surfactants-Volatile (based on Henry's Law Constant) -S.T.E.T. -Persistent degradation product reaching biosphere - Byproducts form ECF -(PFC, PFS, NF compounds) - Inerts forming PFIB - Release in enclosed areas if open flame is present - An Industrial Hygiene concern - Reclamation & recycling of products	(SAME TECHNICAL ISSUES)	- Bioaccumulation of Fluorinerts - Global warming -- some interest, but less than other parts of the world
Networks	- 3M - Consultants - Groups	John Owens Eric Reiner Rick Flynn Dick Minday Rich Purdy Dale Bacon Mike Pike Mike Dougherty Jay Ihlenfeld Ralph Cicerone Mario Molina Peter Wyckoff H. Niki Dave Hayes J. Hatcher Latham & Watkins Law Firm CMA Atmosp Research Council Global Climate Coalition Alliance for Resp CFC Policy	PR Lobbyist D. Landucci Rik Nuyttens John Janssen Al Aspengren Bob Cox Marcello Puccini Mathias von Bohme Max Plant Institute Chemical Co Scientists CEFIC Involvement - Bob Cox ESA technical people
Regulations	- SNAP - Montreal Protocol - VOC - states e.g. N.J. and California	Swedish Potential PFC Ban	

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AQUATIC CONCERNS

	USA	EUROPE	JAPAN
<u>Concerns and Technical Issues</u>	- Wastewater treatment - Foaming - Biodegradability - Physi/Chem treatment techniques (ppt, membrane, absorption) - Adsorption onto sludge-disposal of sludge - Toxicity to aquatic organism - Bioaccumulation (? potential) - Concern about degradation products - Analytical techniques - Persistence in Environ. - Recovery and recycle of surfactants		
<u>Networks</u> - 3M	Rich Stern Tony Manzara Mike Pike Eric Reiner Rick Flynn Jim Johnson Jeff Linert Jon Chasman Robert Howell Rich Purdy Craig Burton Roger Perkins Steve Gordon Jeff Mandel Craig Olson Mike Dougherty	Bob Cox Detlef Reese Ulf Meyer Rik Nuyttens Richard Bradfield Dallas Zimmerman Rudi Vogel John Janssen	
- Consultants	Craig Criddle John Giesy Jim Gillett Don Mackay Ed Tucker Paul Loconto	Harry Painter Tom McCarthy	
- Groups		Heiko Rassman Ising - German Army Dr. Schroeder	
<u>Regulations</u>	NONE	- Surfactant biodegradation of cleaning products - Swiss Scheme - German Army Scheme - German Government Scheme	

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TERRESTRIAL CONCERNS

	USA	EUROPE	JAPAN
Concerns and Technical Issues	• Pesticides toxicity to insects • Groundwater contaminant-mobility • Compostability of treated paper and fate of fluorochemical • Fate and Effects of Degradation Products • Soil Remediation • Incineration • Bioaccumulation • - plants & animals • WWT Sludge disposal • - landfills • - landfarming/soil incorp • Toxicity to plants & animals • Incineration - HF & By-products • Fluorel, Scotchgard, Scotchban		
Networks - 3M	Robert Howell C. S. Chow Mike Pike Dick Grant Dick Howells Larry Magill George Clipson Mike Dougherty Jim Gillett Steve Boyd		
- Consultants			
- Groups	Griffin, S.C. Johnson		
Regulations	• FIFRA • RCRA - Flammability of Solvent based products • FDA - Scotchban thermal degradation products		

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PRODUCT LINE ENVIRONMENTAL ISSUES



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PRODUCT	CONCERN ISSUE	PROACTIVE POSITIONING OR RESPONSE
FLUOREL	Recyclable Car Waste Car Fluff Incineration Is it Toxic? Car Fires Toxicity of Curatives	• Develop ways to separate and recover • Understand products of combustion and toxicity • Quantifying emissions • Practice good product stewardship = minimize environmental and human exposure • Develop alternative curatives • Cure wastes so curatives don't leach from product or wastes
SCOTCHBAN	Residual by-products in products Hydrolysis in some uses Composting issue Environmental Stability Recyclability of treated paper Incineration Toxic combustion products	• Modify manufacturing processes • Understand chemistry. Develop alternative products. Eliminate markets. • Practice Product Stewardship • Do studies to see effects and determine degradation products • Do additional studies • Prepare documentation (German study - get on PED) • Conduct incineration
SCOTCHGARD	Removal in cleaning	• Get data from Division on removal of treatment by steam cleaning.

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PRODUCT LINE ENVIRONMENTAL ISSUES



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PRODUCT	CONCERN ISSUE	PROACTIVE POSITIONING OR RESPONSE
SCOTCHGARD (Con't)	Environmental Stability Recyclability of treated fibers Incineration Need information for customer	- Possible additional studies - Same as Scotchban - PED in place
LIGHTWATER	Effect on WWT Soil Contamination Effect on Aquatic Wild Life Combustion Products Evaluation Schemes (German Army & Swiss Cantons)	- PED in place - Evaluate mobility of surfactants in soils - Toxicity studies on waterfowl - Have data to dispel most concerns - Made comments during scheme development testing - Give to academic consultant for input
BIOMEDICAL MATERIALS	Cl or Br containing materials → Ozone Depletion Does EPA have authority in addition to FDA? Global warming potential of materials Lifetime	- Determine ODP of materials - See if EPA will allow exemption for medical uses - Understand what regulations are coming - Work with regulators (EPA/FDA) - Evaluate GWP - Evaluate lifetime - Make labile substances

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PRODUCT	CONCERN ISSUE	PROACTIVE POSITIONING OR RESPONSE
CFC REPLACEMENT PFCs	GWP Lifetime Combustion products ECF emission also PFCs	- Evaluate for materials - Minimize release of materials - Product Stewardship - Make labile substance - Enclosed uses - Capture and use or destroy
FLUORAD	Used as pesticides Non-target effects Persistence in ecosystem Biodegradation regulations	- Understand possible effects to target and non-target organisms - Minimize release Develop treatment and recovery systems - Selected usage - petition for low volume exemption Eliminate usages
SILICONES	Understand studies and scientific approach of these manufacturers Sediment accumulation Biological effects Degradation 1/2 life Synergistic effects	Call Jerry Hanelink at Dow Corning

PRODUCT LINE ENVIRONMENTAL ISSUES



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PRODUCT	CONCERN ISSUE	PROACTIVE POSITIONING OR RESPONSE
CHLORO ORGANICS	Chlorine Ban Incineration Pesticides PVC Solvents ODP	- Look for chemical analogs - Summarize literature or related material
MANUFACTURING PLANTS	Organic fluorine in worker blood	Medical department studies in progress