

7PP

EPA/Fluoropolymer Industry Meeting

- Introductions
- Meeting Purpose
- Introduction to the Fluoropolymer (FP) Industry
- Fluorinated Processing Aids (APFO/PFOA) in Fluoropolymers
- Discussion & Feedback

Meeting Purpose

- Provide Overview of FP Industry
 - Who, What, How, Critical Uses
- Open Communication Channels
 - Describe What Industry Is Doing
 - Determine EPA Expectations & Plans
 - ┆ Regulatory Actions
 - ┆ International Coordination
- Discuss Next Steps

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**Society of the Plastics Industry (SPI)
Fluoropolymer Manufacturers Group
(FMG)**

- A Special Purpose Committee of the SPI
- The mission of the FMG is to promote the continued safe manufacture & use of fluoropolymers made using fluorinated polymerization aides (FPA) while establishing & supporting responsible care in the use of fluoropolymer products & minimizing the impact on the environment

FMG Objectives for Meeting

- Illustrate Necessity of the Continuing Safe Use of APFO
- Demonstrate Industry's Safety & Health Awareness
- Identify EPA Concerns

FMG Members

- Asahi Glass Fluoropolymers
- Atofina
- Ausimont
- Daikin
- DuPont & DuPont/Dow Elastomers
- Dyneon (a 3M Company)

Fluoropolymers & PFO Chemistry

- APFO Vs. PFOS Chemistry
 - **PFOS - Part of the Product Being Sold**
 - **APFO - Processing Aid, Not Intended to Be in Product**
- Production Volume Comparisons
 - PFOS - Thousands of Tons (Millions of Pounds)
 - APFO - Tens of Tons (Thousands of Pounds)
- Dispersive Vs. Non-dispersive Uses
 - PFOS - Spray Applications for Consumer Products (Dispersive by Design)
 - APFO - Traces in End-use Products (Non-dispersive)

Importance of Fluoropolymers to Society/Commerce

- **What are Fluoropolymers**
 - ┆ PTFE (Granular, Fine Powder, Dispersion, Micropowders)
 - ┆ Thermoplastic Fluoropolymers (FEP, PFA, ETFE, THV, PVDF, etc.)
 - ┆ Fluoroelastomers (including PFE)
- **Building Blocks:**
 - ┆ TFE
 - ┆ HFP
 - ┆ VDF
 - ┆ Olefins
 - ┆ Fluoro Vinyl Ethers

Importance of Fluoropolymers in Society

- **Fluoropolymer Markets**
 - ┆ \$2.5 Billion of FP Sales ≈ \$10-25 Billion in Industries Dependent on FP End-Products
 - ┆ Aerospace/Military
 - ┆ Automobiles/Transportation/Off-Road
 - ┆ Chemical/Petrochemical Processing Equipment
 - ┆ Computers/Semiconductors
 - ┆ Medical Devices
 - ┆ Power Generation Pollution Control
 - ┆ Telecommunications

Importance of Fluoropolymers In Critical Applications

- Fuel Barrier Hoses, Connectors & Seals
- Drive Train Seals
- Hydraulic & Refrigeration Seals
- High Performance Lubricants
- Filtration Products (Bag Houses Etc)
- Wire & Cable Insulation (LAN Networks, Automotive, Aerospace, Etc.)
- Semiconductor Chip Manufacturing Equipment
- Pipe & Tank Liners
- Pump Seals, Liners, Packing
- Tubing in Medical/measurement/aerospace Devices
- Protective Clothing
- Protective Coatings on Metal
- Etc.

Global Industry Organization

- Association of Plastic Manufacturers in Europe (APME)
- The Society of the Plastics Industry (SPI)
- Fluoropolymer Manufacturers Group (FMG)
- Canadian Plastics Industry Association (CPIA)
- Contacts/inclusion of OECD

Status of SPI/APME ES&H Programs

- Toxicology
 - APME APFO Tox Program Ongoing for Over 3 Years
 - APME Product Stewardship & Worker Safety & Health Programs
 - Epidemiology - Limited Use Locations With Good Worker Medical Histories
 - Lifecycle Management
 - Need to Gather & Understand Additional Residual & Exposure Data
 - Fully Determine Where It Goes
 - Decide How Release & Exposure Can Be Further Reduced
- (Continued)

Status of SPI/APME ES&H Programs (continued)

- Environmental Impacts
 - Committed to Minimizing Environmental Impact
 - Source Reduction
 - Investigate Recovery, Recycle & Re-use
 - Committed to Preventing Exposure & Avoiding Any Human Health Effects
 - Replacement or Alternate Technology?
 - Repeated Attempts but No Success

Group Discussion

Questions/Feedback/Timelines