



DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

JAN 09 2009

Office Of The Assistant Secretary

MEMORANDUM FOR ASSISTANT DEPUTY UNDER SECRETARY OF DEFENSE
(ENVIRONMENT, SAFETY AND OCCUPATIONAL HEALTH)

SUBJECT: Reducing Toxic and Hazardous Chemicals under Executive Order (EO) 13423,
Strengthening Federal Environmental, Energy and Transportation Management

In reference to USD(AT&L)'s 3 Dec 08 memorandum, same subject, please find attached for your information the Air Force's Toxic and Hazardous Chemical reduction goals.

The Air Force accomplishes toxic and hazardous chemicals reductions through an integrated approach that utilizes an environmental management system risk management framework applied across the weapon system, facility, and infrastructure life cycles to respond to specific environment, safety, and occupational health (ESOH) impacts. The Air Force Hazardous Materials Management Process (HMMP) is a key part of this integrated approach. AFI 32-7086, *Hazardous Materials Management*, established the Air Force HMMP in 1997, and the Air Force has continued to improve its processes for supporting the Air Force mission and reducing ESOH risks.

In its current structure, the HMMP conforms to the processes institutionalized by the DoD Hazardous Materials Management Business Process Reengineering effort. As such, it is primarily focused on the installation-level review and authorization of hazardous processes, tracking and reduction of hazardous chemicals, and establishment of controls that protect people and the environment. As the Air Force continues to mature the HMMP and improve the enterprise resource planning systems that support it, the Air Force will be better able to target and report hazardous material reductions at all levels of command.

Our goals, as well as the plans to achieve them, have been generated through this ongoing Air Force approach to hazardous materials management. These reflect a representative snapshot of the continuously improving toxic and hazardous chemicals reduction activities within the Department. My point of contact is Lt Col Mark Smallwood, at (703) 692-9515 if you have questions or require additional information.

A handwritten signature in black ink, appearing to read "M. McGhee", written over a horizontal line.

MICHAEL F. MCGHEE
Acting Deputy Assistant Secretary
(Energy, Environment, Safety and Occupational Health)

Attachment:
USAF Toxic Chemical Reduction Goals

USAF Executive Order 13423 Toxic Chemical Reduction Goals

PROPOSED GOAL 1: Reduction of Lead Content in Desktop Personal Computers (PCs), Laptops, Liquid Crystal Displays (LCDs)

| Identification of Chemicals (minimum of three) | Chemical Name and CAS Number, if applicable | Family (F) or Type (T) or Not applicable (N/A) | Baseline/year (approx. pounds, gallons, etc. used) | As of (approx. dates) | Based on Est. Total Usage OR Est. Intensity specific Usage (please describe) | Reduction Goals |
|---|---|--|--|-----------------------|--|---|
| Lead content in desktop PCs, laptops, and LCDs purchased under the Air Force Information Technology Commodity Council (AFITCC) Quarterly Enterprise Buy (QEB) | Lead | N/A | Estimated 76,798 pounds of lead content installed in AFITCC QEB-purchased desktop PCs, laptops, and LCDs in use across Air Force | 2005 | | By 31 Dec 2009, 99% of all AFITCC QEB-purchased electronics used across the Air Force will be lead-free |

Reasons for Selection

Lead is a highly toxic chemical that has been designated as one of 31 Priority Chemicals targeted for reduction by EPA. Lead is a documented contaminant of air, land, water, plants and animals and exposure can cause serious health problems.

Desktop PCs, Laptops, and LCDs:

The July 2008 Office of the Federal Environmental Executive (OFEE) guidance document, *How to Use EPEAT to Meet Your E.O. 13423 Toxic and Hazardous Chemicals and Materials Reduction Goals*, encourages Federal agencies to use “the purchase of Electronic Product Environmental Assessment Tool (EPEAT)-registered products as a strategy for achieving the toxic and hazardous chemicals and materials reduction goals of E.O. 13423.” It also provides guidance for using the Electronics Environmental Benefits Calculator (EEBC) to demonstrate reductions. The AFITCC QEB is the procurement source for more than 75% of the desktop PCs, laptops, and computer monitor purchases AF-wide. A few months before the E.O. was signed, the AFITCC mandated that 99% of QEB-purchased desktop PCs, laptops, and LCDs would be EPEAT Silver registered. By 31 December 2009, the AFITCC aims to have purchased more than 980,000 EPEAT-silver registered products. The AFITCC estimates that this will fully replace 99% of the non-EPEAT registered, QEB-purchased desktop PCs, laptops, and LCDs. Using the EEBC, as suggested by OFEE, the Air Force has estimated the lead content reduction associated with the AFITCC’s procurement goal: 76,798 pounds of lead.

PROPOSED GOAL 2: Elimination of Lead in Fleet Vehicle Tire Weights

| Identification of Chemicals (minimum of three) | Chemical Name and CAS Number, if applicable | Family (F) or Type (T) or Not applicable (N/A) | Baseline/year (approx. pounds, gallons, etc. used) | As of (approx. dates) | Based on Est. Total Usage OR Est. Intensity specific Usage (please describe) | Reduction Goals |
|--|---|--|---|-----------------------|--|---|
| Lead used in Fleet Vehicle Automobile Tire Weights | Lead | N/A | At least 10,000 pounds of lead tire weights installed on Air Force fleet-vehicles | 2007 | | 100% elimination of installed lead tire weights by 2012 |

Reasons for Selection

Lead is a highly toxic chemical that has been designated as one of 31 Priority Chemicals targeted for reduction by EPA. Lead is a documented contaminant of air, land, water, plants and animals and exposure can cause serious health problems.

Tire Weights: The EPA (<http://www.epa.gov/epawaste/hazard/wastemin/nlffwwi.htm#quick>) and the Office of the Federal Environmental Executive (<http://www.ofee.gov/gp/lead.asp>) recognize the use of lead in automobile tire weights as one of the most significant opportunities to reduce the release of lead into the environment. The EPA estimates that 13% of installed lead tire weights are released uncontrolled into the environment each year. On 29 August 2008, the United States Air Force joined 37 corporations and organizations and three other Federal agencies as a Charter member of the US EPA's National Lead Free Wheel Weight Initiative (NLFWWI). During 2008, the Air Force will began to procure only non-lead tire weights, and will have replaced all lead tire weights on fleet vehicles (at least 10,000 pounds of lead) by the end of 2012.

PROPOSED GOAL 3: Reduction of the use of chromate conversion coatings as a bare surface treatment in depot-level painting of USAF aircraft

| Identification of Chemicals (minimum of three) | Chemical Name and CAS Number, if applicable | Family (F) or Type (T) or Not applicable (N/A) | Baseline/year (approx. pounds, gallons, etc. used) | As of (approx. dates) | Based on Est. Total Usage OR Est. Intensity specific Usage (please describe) | Reduction Goals |
|---|--|---|---|------------------------------|---|--|
| Chromate conversion coatings (hexavalent chromium, phosphoric acid, hydrofluoric acid, potassium ferricyanide, etc) used as bare surface treatment in depot-level painting of USAF aircraft | | N/A | 49,000 gallons per year | 2003 | | 70% reduction in annual procurement and use by 31 Dec 2012 |

Reasons for Selection

Chromate conversion coatings pose a range of hazards to maintenance personnel and the environment. They contain hexavalent chromium (Cr6+), which is a highly toxic chemical that has been designated as one of 31 Priority Chemicals targeted for reduction by EPA. The Air Force has long targeted Cr6+ for reduction, and has, in partnership with the other Services, spent significant funds to identify, qualify, and implement alternatives for chromium-based compounds. Alternative qualification and implementation must be performed on a process-by-process and platform-by-platform basis, which makes Cr6+ reduction a technically challenging, time-consuming, and expensive effort. The above goal reflects the objective associated with one of the Cr6+ reduction efforts currently underway within the Air Force. The Air Force also supports the DoD-wide initiative to review all existing uses of Cr6+ for replacement opportunities, and expects to be able to add to and refine USAF Cr6+ reduction goals over the coming months and years.

PROPOSED GOAL 4: Elimination of HCFC-225g Usage in Cleaning of Aircraft Oxygen Systems and Equipment

| Identification of Chemicals (minimum of three) | Chemical Name and CAS Number, if applicable | Family (F) or Type (T) or Not applicable (N/A) | Baseline/year (approx. pounds, gallons, etc. used) | As of (approx. dates) | Based on Est. Total Usage OR Est. Intensity specific Usage (please describe) | Reduction Goals |
|---|---|--|--|-----------------------|--|--------------------------------|
| HCFC-225g used to clean aircraft oxygen systems and equipment | | Class II Ozone Depleting Substance | 4,542 pounds | 2008 | | 100% elimination by 1 Jan 2015 |

Reasons for Selection

The Air Force continues to use Class II Ozone Depleting Substance (ODS) solvents to clean aircraft oxygen systems and equipment. This technically challenging precision cleaning process is the last significant Air Force use of ODS solvents, a class of chemicals that the Air Force used in million-pound quantities just over 15 years ago. The Air Force goal is to implement a technically viable replacement Air Force-wide by 1 Jan 2015.

PROPOSED GOAL 5: Reduction in Aerospace Hydraulic Fluid Procurement and Waste Generation

| Identification of Chemicals (minimum of three) | Chemical Name and CAS Number, if applicable | Family (F) or Type (T) or Not applicable (N/A) | Baseline/year (approx. pounds, gallons, etc. used) | As of (approx. dates) | Based on Est. Total Usage OR Est. Intensity specific Usage (please describe) | Reduction Goals |
|--|--|--|--|-----------------------|--|---|
| Aerospace Hydraulic Fluids | Multiple chemicals: oils, esters, polyalphaolefins, glycols, butanol, silicones, aromatic hydrocarbons, etc. | N/A | 246,219 gallons per year | 2007 | | 65% reduction in annual new aircraft hydraulic fluid purchases by 31 Dec 2015 |

Reasons for Selection

Hydraulic fluids are a critical, safety of flight material for all Air Force aircraft. Hydraulically actuated mechanisms are responsible for a large number of aircraft functions, including highly sophisticated flight controls, landing gear operation, rudder flap control, and accessory door actuation. Because of their potential effects on the environment, used hydraulic fluids must be disposed of as containerized waste and form the second largest fluid waste stream for the Air Force. Hydraulic fluid procurement and disposal costs are a significant operating expense for the Air Force. At least 147,731 gallons of used fluid are dispositioned off-base each year at an average cost of \$2.41 per gallon.

The Air Force has nearly completed several years of testing to obtain airframe and subsystem approval to use recycled rather than new hydraulic fluid in sensitive aerospace applications. Over the next seven years and at a cost of almost \$15 million, the Air Force will finish qualification of recycled hydraulic fluid and buy equipment to implement the recycling/purification process across the Air Force.

PROPOSED GOAL 6: Reduction of Greenhouse Gas (GHG) Emissions from Facility Energy

| Identification of Chemicals (minimum of three) | Chemical Name and CAS Number, if applicable | Family (F) or Type (T) or Not applicable (N/A) | Baseline/year (approx. pounds, gallons, etc. used) | As of (approx. dates) | Based on Est. Total Usage OR Est. Intensity specific Usage (please describe) | Reduction Goals |
|--|---|--|---|-----------------------|--|--|
| GHG emissions | Combustion-related GHGs (CO ₂ , CH ₄ , N ₂ O). | N/A | Facility energy usage ~ 71,840.70 MMBTU (~8,384,910 MT CO ₂ e) | FY 2003 | Based on reduction in energy intensity and associated emissions impact. | Reduce GHG emissions through a reduction in energy intensity by 3% annually, or 30% by 2015 relative to 2003 |

Reasons for Selection

The Air Force is committed to reducing its greenhouse gas emissions and carbon footprint through the reduced use of fossil fuels consumed directly through vehicles and facilities or indirectly through the consumption of fossil fuel-generated electricity from the national electrical grids. EO 13423 requires each federal agency to reduce GHG emissions through the reduction of its energy intensity relative to the agency's energy use in FY2003.