



U.S. EPA MAC Regulatory Landscape

Karen Thundiyil

United States Environmental Protection Agency
2007 Alternate Refrigerant Systems Symposium, Phoenix



Agenda

1. SNAP MVAC Rule

2. CO₂ and HFC-152a Servicing

3. New Low GWP Refrigerants

4. Section 609 Activities

5. On the Horizon



SNAP MVAC Final Rule

CO₂ & HFC-152a Acceptability

- Fall 2006: Proposal published!
- Received comment during public comment period
- Under review at White House/Office of Management and Budget
- Expect final publication by end of summer



September 2006 Proposal

- New CO₂ MVAC systems acceptable with the use condition that systems are designed to avoid concentrations above the CO₂ short term exposure limit (STEL) of 3% averaged over 15 minutes in the passenger cabin free space
- New HFC-152a MVAC systems acceptable with the use condition that systems are designed to avoid concentrations above 3.7% for more than 15 seconds in the passenger cabin free space



Proposal – Public Comment

- Use conditions
 - Free space vs. driver breathing zone
 - Ignition on/off?
- CFD modeling
- New SAE standards
- Risk mitigation strategies



Final Rule: Steps Ahead

Now

White House
Office of
Management
& Budget
Review

End of Summer

Final Rule
Publication



CO₂ and HFC-152a Servicing

- Reference SAE service standards that are currently under development
 - CO₂ charging
 - HFC-152a recovery and recycling?
- Venting of CO₂
- If necessary, address odorized CO₂ issues



New Low GWP Refrigerants

- SNAP has not received a complete submission for any of these refrigerants
- New chemical alternatives must undergo review under both section 612 and section 5 of Toxic Substances Control Act (TSCA)
- EPA's 90-day review period for SNAP submissions would begin once EPA receives a complete submission



New Low GWP Refrigerants

SNAP submission requirements

- Physical & chemical properties
 - ODP, GWP, flammability
 - Materials compatibility
- Cardiosensitization study
- Occupational exposure during end-use
- Consumer exposure
- General population exposure



SNAP Approval Timing

- EPA's 90-day review period for SNAP submissions would begin once EPA receives a complete submission
- Previous SNAP approvals have taken as little as 90 days
- HFC-152a & CO₂ has taken longer for a couple of reasons



Section 609 Activities

- Updating Section 609 approved refrigerant handling machines SAE standard reference
 - HFC-134a recovery only
 - HFC-134a R/R/R
- Current EPA 609 regulations reference a SAE standard that will be obsolete after Dec 2007
- New machines provide 10 – 30% improvement in refrigerant recovery
- Anticipate grandfathering old machines



609 Final Rule: Steps Ahead

Now

EPA
Office of
Policy
Review

End of Summer

Final Rule
Publication



Revising 609 Regulatory Impact Analysis

- Reviewing impact of current regulatory requirements and any future updates
- Updating assumptions to best available information, particularly the SAE I-MAC CRP
- Coordinating and discussing with California and EU colleagues
- Welcome input from others!



Revising 609 Regulatory Impact Analysis

- Review of SNAP MVAC acceptable list
- Update Section 609 technician training & testing
- Revisit currently approved Section 609 technician certification programs



609 Enforcement

- Cal EPA/US EPA cooperation
- Series of inspections scheduled this week...west of the Mississippi



Disposable Containers

- Disposable containers report complete
 - <http://epa.gov/ozone/title6/609/index.html#reports>
 - 30 lb cylinder heel
 - Small can heel
- Identified best practices
- ARPI membership agreement



On the Horizon

- Provisions for new low GWP refrigerant servicing
- Address leak detection
- Hose fittings/couplings
- Continued cooperation within EPA and with California, EU and others!



For Additional Information

Karen Thundiyil

+1 202.343.9464

thundiyil.karen@epa.gov