



U.S. EPA MAC Regulatory Landscape

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United States Environmental Protection Agency
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Agenda

1. SNAP MVAC Final Rule

2. CO₂ and HFC-152a Servicing

3. New Low GWP Refrigerants

4. 609 Standard Update

5. On the Horizon



SNAP MVAC Final Rule

CO₂ & HFC-152a Acceptability

- Fall 2006: Proposal published!
- Received comment during public comment period
- Developed text for Final Rule
- Under review at US EPA Office of General Counsel
- Expect approval by end of February



September 2006 Proposal

- New CO₂ MVAC systems acceptable with the use condition that systems are designed to avoid occupant exposure to 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 occupant exposure to concentrations above 3.7% for more than 15 seconds in the passenger cabin free space



Final Rule – 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

March

US EPA
Policy Office
Review

April - June

Office of
Management
& Budget
Review

July

US EPA
Policy Office
Review

August

**Final Rule
Publication**



Final Rule: Barrier Removal

Barriers to New Auto A/C Technology

- After 2011/2017 EC will only allow new cars with refrigerants <150 and is considering similar regulation for light trucks
- CO₂ (R744), HFC-152a (R152a) and new fluorocarbons are candidates
- Unintentional barriers exist
 - Department of Transportation accumulator pressure requirements
 - State bans on toxic & flammable auto A/C refrigerants
- Barriers must be removed before vehicles with alternative AC refrigerants can be globally deployed



Final Rule: Barrier Removal

Removing Barriers Through Unprecedented Global Private/Public Cooperation

Barrier Removal Team Chaired by Kristen Taddonio, US EPA

Alliance of Automobile Manufacturers	PSA Peugeot Citroën – France
Audi – Germany	Red Dot - USA
Behr Group - Germany	Sandeen - Japan
BMW – Germany & North America	Shecco Technology – Norway
Centro Ricerche Fiat - Italy	Society of Automotive Engineers International
DENSO - Japan	Texas Instruments - Holland
Environmental Protection Agency – USA	TEXA S.p.A. - Italy
European Commission	Thomas Magnete - Germany
Hydro - Norway	Toyota – Japan & United States
Ingersoll-Rand - Czech Republic	U.S. Army - USA
MACS Worldwide - USA	Volvo - Sweden
Modine - United States	VDA - Germany
Obrist Engineering - Austria	VOSS Automotive - Germany
Parker Hannifin - Germany	Witzenmann - Germany
Prospective Technology - United States	



Final Rule: Barrier Removal

OSHA, EPA, & SAE Cooperate to Assure New Technology Satisfies US Health and Safety Requirements

- SAE J-Standards in progress: “Recommended practice for servicing R744 [CO₂] & R152a mobile air conditioning systems”
- The SAE Standards will meet Occupational Safety and Health Administration (OSHA) requirements for training, personal protective equipment, safe handling, pressure relief devices, equipment inspection, worker exposure, ventilation, and refrigerant storage



Final Rule: Barrier Removal

Successes!

- “[Air conditioning systems] are an integral component of a motor vehicle and necessary for the operation of the vehicle”... “Based on the information you provided, the air conditioning system...is not subject to the Hazardous Materials Regulation.”
 - John A. Gale, Chief of Standards Development
US Department of Transportation (DoT) Pipeline and
Hazardous Materials Safety Administration
11 July 2006
- 9 states confirm alternative refrigerant acceptability,
10 states left to go



CO₂ and HFC-152a Servicing

- Reference SAE service standards that are currently under development
 - CO₂ charging
 - HFC-152a recycling and recovery
- Venting of CO₂
- 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



Section 609 Update

- Updating reference to Section 609 approved refrigerant handling machines
- Current EPA 609 regulations reference a SAE standard that will be obsolete after Dec 2007
- New machines provide 20 – 30% improvement in refrigerant recovery
- Anticipate grandfathering old machines and providing a grace period for sale of current machines after SAE effective date



On the Horizon

- Review of SNAP MVAC acceptable list
- Update Section 609 technician training & testing
- Provisions for new low GWP refrigerant servicing



Thank you!

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