

May 2, 2006

To: Chemical Suppliers

Subject: Potential replacement chemicals for R134a to meet European Union regulations in 2011

The SAE Interior Climate Control Committee [ICCC] met on April 4-5, 2006 and is proposing to create a new SAE Cooperative Research Program [CRP] to evaluate potential low GWP replacement mobile A/C refrigerants. This is judged to be the least costly and most expedient manner to evaluate the alternatives from an Industry perspective. The details of the CRP are under development, but the Committee requests the chemical suppliers by this letter to submit candidate refrigerants with the following minimum data:

Refrigerant Chemical Name	
Refrigerant Chemical Formula	
MSDS documentation	
Global Warming Potential(GWP)	
Ozone Depletion Potential(ODP)	
VOC Classification	
List of completed Toxicity tests	
Operating Pressures (Max.)	
ASHRAE flammability ratings	
ATEL(PPM)	
TWA [ppm]	
List of chemical components that occur on break down	
Molecular Weight	
Critical point	

Timing is critical to make a decision on any new alternative that meets the GWP target of 150, and might be considered for use in future mobile A/C systems. As a result, the committee is asking if you have a refrigerant that you would propose as an alternative, that this data be submitted no later than **June 15, 2006**. Send the data to:

SAE Interior Climate Control Standards Committee
c/o Gary Pollak
Program Manager, Technical Projects
SAE World Headquarters
400 Commonwealth Drive
Warrendale, PA 15096
Phone: 724-772-7196
Email: gary@sae.org

The ICCC will assemble a board of Chemists, Toxicologists, and HVAC Engineers from the OEM's and Tier One Suppliers to screen these alternatives and make recommendations on which candidates should be subjected to further scrutiny and testing. This further testing will be conducted under the SAE CRP umbrella and will include the following:

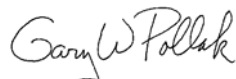
- Risk and toxicology assessment
- Materials compatibility testing
- System development and optimization
- Service and Leakage impacts

Refrigerants that meet the initial screening will be considered for further evaluation under the SAE CRP. To offset the costs of this evaluation of the selected refrigerants, the supplier will be requested to submit to SAE a check for \$10,000 for each chemical candidate. After the initial evaluation, each supplier will also be expected to bear 10% of the total cost of the CRP that will be conducted to evaluate the chemical.


The OEM's will review the list of submitted chemicals during a special meeting during the SAE Alternate Refrigerant Symposium in Phoenix during the week of June 26, 2006.

The following is a list of the OEM and Tier 1 suppliers from the ICCC member companies that were represented during the meeting or have expressed support.

Ward Atkinson	Sun Test Engineering/ ICCC Chair Person
Jay Amin	Visteon Corp.
James Baker	Delphi Corp.
Jacob Bayyouk	Sanden International, Inc.
Hans Fernqvist	Volvo Car Corp.
William Hill	General Motors Corp.
Stephen Lepper	Ford Motor Co.
Gursaran Mathur	Calsonic Kansei N.A., Inc.
Joseph McCorkel	Freightliner LLC
Christophe Petitjean	Valeo Systems Thermiques SAS
Joe Rahaim	Daimler Chrysler Corp.
Alberto Reginaldo	Toyota Technical Center USA, Inc.
Juergen Wertenbach	Daimler Chrysler Corp
Frank Rogers	General Motors Corp.
Steven Lambert	Ford Motor Co.
Kwangtaek Hong	Daimler Chrysler Corp.
Cary Haramoto	Parker Hannifin
Peter Nickels	Volkswagon
Robert Mager	BMW Group
Stefan Wiedemann	BMW Group
William Kumpf	Delphi Corp
Edward Wolfe	Delphi Corp
Maximilian Sauer	Robert Bosch GmbH
Stephen Memory	Modine Manufacturing Co.
Bill Jamo	Visteon
Jie Zeng	Denso international America, Inc.
Alex Moulthanovsky	ACC Climate Control, Inc.



Gary Pollak
SAE CRP
Manager



Ward Atkinson
SAE Interior Climate
Control Chairman