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(This article was written by Steve Pawlett, of Jobber News Magazine, dated april 2014)

IN PRAISE OF A NEW REFRIGERANT

The European Commission's top scientific and technical body has concluded that the new low-global-warming-potential mobile air-conditioning refrigerant, HFO-1234yf, is safe for use in automobiles, marking the final word in a thorough and inclusive evaluation process. "A scientific review of the research regarding the safety aspects of the use of refrigerant R1234yf in mobile air conditioning systems, published today by the European Commission, concludes that there is no evidence of a serious risk in the use of this refrigerant in MAC systems under normal and foreseeable conditions of use, "the European Commission said in a statement, following an extensive evaluation by the Commission's Joint Research Centre. "The review reinforces the conclusions by the German market surveillance authorities the KBA (Kraftfahrt Bundesamt), which stated that there is no sufficient supporting evidence of a serious risk that would entail the intervention of the authorities."

The JRC issued a 17-page report supporting its conclusions after a three-month evaluation during which it thoroughly reviewed the extensive testing done by a range of leading automakers as well as the world's foremost automotive engineering body, SAE International, and independent test agencies.

The JRC provides independent scientific and technical advice to the European Commission to broadly support policy-setting activities. It oversees seven scientific institutes across Europe with a wide range of laboratories and research capabilities.

"The JRC's independent and unimpeachable report leaves no doubt that HFO-1234yf is safe for automotive applications," said Ken Gayer, vice president and general manager for Honeywell Fluorine products, makers of the refrigerant. "We continue to see strong adoption by global automakers of this new refrigerant as they work to meet new environmental regulations, especially in Europe, and are investing in production capacity to ensure adequate supply."

HFO-1234yf was developed as an effective replacement for the current automotive air-conditioning refrigerantHFC-134a, and is already widely used by the auto industry. There are more than 500,000 automobiles using HFO-1234yf on the road today, and by the end of 2014 that number is expected to grow more than two million. Third-party data shows that HFO-1234yf's widespread adoption globally would have the greenhouse gas reduction equivalent of permanently removing more than 30 million cars from the road worldwide, or about 3% of the total global fleet.

HFO-1234yf is being adopted by automakers in part to meet the European Union's Mobile Air Conditioning Directive, which aims to reduce the green-house gas emissions of air-conditioning systems in passenger cars and light commercial vehicles. As reconfirmed last month by the Intergovernmental Panel on Climate Change, HFO-1234yf has a global warming potential of less than one, which is even lower than that of carbon dioxide. This GWP is 99.9% lower than that of HFC-134a, whose GWP of 1,300 makes it an especially potent greenhouse gas. The JRC began its extensive evaluation of the extensive testing already conducted on HFO-1234yf in October 2013 at the request of The Directorate General for Enterprise to conclusively determine the safety of the refrigerant.

Diamler in late 2012 had raised questions about the refrigerant's safety due to its mild flammability. Last year, SAE International, which comprises engineers from the world's leading automotive manufacturers, concluded that the refrigerant was safe after completing an expanded and extensive evaluation. Those conclusions were backed by 10 global automakers who took part in the SAE Cooperative Research Project, including Chrysler/Fiat, Ford, General Motors, Honda, Hyundai, Jaguar Land Rover, Mazda, PSA, Renault, and Toyota. The SAE report called Daimler's testing of the product "unrealistic."

SAE representatives as well as experts from several global car manufacturers also presented at the JRC meetings, and the JRC reviewed testing and evaluations from multiple SAE Cooperative Research Programs as well as more recent testing by the KBA. The KBA's testing demonstrated that using HFO-1234yf creates no serious risks, and as a result it did not pursue action under Germany's Product Safety Act. For more information, visit www.1234facts.com/resources.

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