TOWARDS THE FUTURE WITH CO₂

Dear Reader,

Mercedes has won its legal battle with the French government over the new automotive refrigerant R1234yf. It remains to be seen, however, whether this will set the course for a truly forward-looking development. For the time being, only one thing is certain: The introduction of a climate-friendly refrigerant as a replacement for R134a is no simple matter.

And yet, the solution had actually already been found. German carmakers initially decided on the particularly eco-friendly refrigerant R744 (CO₂), and the VDA proclaimed at the 2007 IAA that it would do everything within its power to make R744 the international standard for mobile air-conditioning units. But instead, all those involved subsequently turned their attention to the perfluorinated hydrocarbon HFC-1234yf (tetrafluoropropene).

This is incomprehensible in several respects. Firstly, suppliers and OEMs have been investing heavily in the development of CO₂ technology for many years now – as has been documented in numerous technical articles in ATZ since 2001. Secondly, it squanders the opportunity to give a decisive stimulus to the global market with innovative technology. And thirdly, R1234yf conceals an incalculable risk. If it ignites, it produces very toxic and highly corrosive hydrogen fluoride (and, when in contact with water, hydrofluoric acid). Studies at Daimler under practical conditions have provided clear evidence of this. For that reason, the decision by the Stuttgart carmaker not to introduce R1234yf is a logical one, and shows responsibility and backbone. However, the further use of the refrigerant R134a for the time being can and will

be only a stopgap solution. The next logical step must surely be the establishment of CO₂ as the international standard for mobile air-conditioning systems on the basis of the secure knowledge now available.

The decision against the hydrofluorocarbon (HFC) R134a with its GWP of 1430 was convincing and necessary. The 2006 EU Directive 2006/40/EC is right in principle. However, if an admittedly more eco-friendly but evidently more dangerous refrigerant such as 1234yf is accepted, even though a climate-neutral and safe alternative is available, it hardly represents progress. Decision-makers from politics, associations and industry would be well-advised to put their heads together and to set the course for a genuinely forward-looking impetus.

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