

## Type-Approval Procedure

### Information System of the German Type-Approval Authority

#### **Type-approvals with regard to air-conditioning systems designed to contain fluorinated greenhouse gases with a GWP-value not higher than 150.**

##### Question or problem

Since 2011-01-01 in newly approved types of vehicles of category M<sub>1</sub> and in a special range of vehicles of category N<sub>1</sub> air-conditioning systems may only be fitted if they are designed to contain fluorinated greenhouse gases with a global warming potential not higher than 150.

For all types of vehicles fitted with air-conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential higher than 150 it was necessary to be type-approved with regard to the emissions from the air-conditioning systems. Compliance with the limits for leakage rates had to be established. A type-approval for a component could be granted the manufacturer of the air-conditioning system. A type-approval for a vehicle with regard to emissions from the air conditioning-system could be granted the vehicle manufacturer.

How are in future air-conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential not higher than 150 to be handled with regard to type-approvals?

##### Result

Air-conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential not higher than 150 have to be type-approved or a test report has to be provided while granting the whole vehicle type-approval in mixed proceeding.

Different proceedings may be chosen:

- Directive 2006/40/EC provides the possibility to obtain an approval for the type of an air-conditioning systems as a component.
- According to article 6 of framework directive 2007/46/EC there is the possibility of a whole vehicle type-approval in mixed proceeding as well. In this case a test report regarding 2006/40/EC has to be provided with the application for the whole vehicle type-approval.
- A vehicle manufacturer who applies for example for several whole vehicle type-approvals may apply for one single component type-approval for the air-conditioning systems fitted to the different vehicle types. Air-conditioning systems that differ in design and construction are deemed to belong to one type in case that the same refrigerant is used.

The technical documentation to be provided with regard to the type-approval of an air-conditioning system should include:

- the value of the global warming potential (GWP)
- the name of the refrigerant
- a data sheet of the refrigerant respectively a suitable abstract from that data sheet. It is not deemed to be necessary to provide a data sheet if the following condition is fulfilled: The technical report confirms that the air-conditioning systems is designed to contain R-1234yf. In this case there has to be made reference to ISO 13043 (Road vehicles – Refrigerant systems used in mobile air conditioning systems (MAC) – Safety requirements).
- It is deemed to be meaningful to include a documentation of the design of the air-conditioning system.

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In case of mixed proceeding to grant a whole vehicle type-approval the above accounts for the test report of the air-conditioning system. In case that R-1234yf is used as refrigerant KBA asks for a risk assessment on foundation of ISO 13043:2011 in the frame work of granting a whole vehicle type-approval. The risk assessment may be issued by the vehicle manufacturer.

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