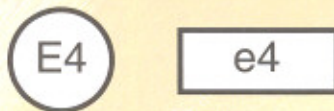


## KIWA Gastec Offers testing and certification of Air-conditioning for Automotive

The automotive parts and systems laboratory of KIWA Gastec has recently received an extension of the notification by the Dutch Vehicle Authority, RDW. It means for you that by means of an efficient and smooth process all tests and certification activities can be carried out in order to reach the E4 marking on your air-conditioning systems and/or components.



Already over 15 years KIWA Gastec offers testing and certification services on automotive parts in the fields of LPG, CNG, LNG and Hydrogen, as well as EMC, Electrical safety and a variety of climatologically tests. This covers services on complete vehicles, systems and components (like pressurized cylinders) as well.

### Air-conditioning systems according to Regulation No. 706/2007

If you wish to market components like Compressors, Hose assemblies or complete systems on the European market, you have to obtain for the E approval, according Regulation 706/2007.

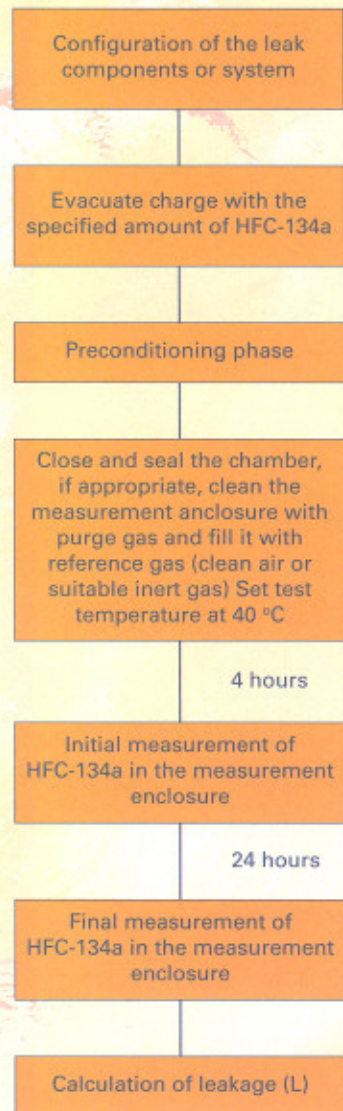
One of the most recognized certification authorities in Europe but even world wide is the Dutch Vehicle Authority RDW ([www.rdw.nl](http://www.rdw.nl)).



With KIWA Gastec as the renowned and recognized laboratory you can be assured of not only the highest market value on your approvals but an extended service and state of the art experts as well. You will find yourself surprisingly well treated by our dedicated automotive team.

### Test flow

The following figure shows the separate steps in the testing process. The sample to be tested is closed and sealed gas-tight. We test in an atmospheric test chamber, completely filled with purified synthetic air with oxygen content between 18% and 21% as reference gas.



Before we start the test cycle it has to be determined which option you choose for the pre-conditioning phase (Single step at 40°C or a shorter version in two steps). See following figure:

System part	Option 1	Option 2	
	40 °C Time [h]	Step 1 - 50 °C Time [h]	Step 2 - 40 °C Time [h]
Complete system	480	240	24
Compressor	144	72	24
Hose assemblies	480	240	24
All other leak parts	96	48	24

Shorter conditioning cycles are possible if the permeation losses are known already (for example by means of earlier tests as part of a system).

#### All relevant tests for the automotive sector

At KIWA Gastec, we offer you the availability of an extend variety of testing facilities and equipment. Amongst many others we mention:

- Temperature shock tests at extreme circumstances
- Pressure cycles (up to 1.000 Bar)
- Pressure tests and cycles with real gasses (such as LPG, CNG and Hydrogen)
- Determination of Kv or Cv value (rated flow)
- Mechanical strength tests under severe circumstances
- Emission and combustion tests (NOx, CO, CO2, etc.)
- Bonfire tests on cylinders
- Ballistic tests on cylinders
- Analysis of (Bio) gasses
- Etc.

#### We arrange approvals according the following regulations and standards

**ECE R10:** Uniform provisions concerning the approval of vehicles with regard to electromagnetic compatibility (EMC).

**ECE R110:** Uniform provisions concerning the approval of specific components of motor vehicles using compressed natural gas (CNG) in their propulsion system.

**ECE R67:** Uniform provisions concerning the approval of specific equipment of motor vehicles using Liquefied Petroleum Gases (LPG) in their propulsion system.

**ECE R115:** Uniform provisions concerning the approval of specific LPG (liquefied petroleum gases) or CNG (compressed natural gas) retrofit systems to be installed in motor vehicles for the use of LPG or CNG in their propulsion system.

**ISO 15500** Road vehicles – compressed natural gas (CNG) fuel system components.

Besides Europe we are also able to offer testing and certification services for many other markets, like Northern America via CSA, Australia via SAI, etc.

*Please contact us for any questions or enquiries and let us help and surprise you!*

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