

## Hydrogen components testing and certification



**The stricter environmental standards become, the larger the scope for using alternative fuels and other drive systems. Hydrogen, natural biogas, hybrids and fuel cells are all alternatives that are rapidly becoming reality. Kiwa can test and certify components of automotive vehicles using hydrogen in the propulsion system, according to the Directive No. 79/2009 (Dir. 79/2009), HGV standards, CSA standards and ECE R134.**

Not only hydrogen components but pressure vessels are commonly tested and certified in our lab. Full type approval and certification is in our scope of supply, Kiwa is authorised to issue the E4 certification by the Dutch Vehicle Authority (RDW), one of the most renowned certification authorities in the world.

The stricter environmental standards become, the larger the scope for using alternative fuels and other drive systems. Hydrogen, natural biogas, hybrids and fuel cells are all alternatives that are rapidly becoming reality. We test and certify automotive components for LPG, CNG, LNG and hydrogen sectors, as well as for electromagnetic compatibility and several climatic tests. Kiwa is authorized to issue the E4 certification on behalf of the Dutch Vehicle Authority (RDW), one of the most renowned certification authorities in the world.

Kiwa also provides hydrogen testing and certification services to manufacturers of components for automotive vehicles using hydrogen outside of Europe, such as for the North American marketplace.

We test various components, including:

- Containers and container assemblies
- Automatic shut-off valves
- Check valves or non-return valves (if used as a safety device)
- Flexible fuel lines (if upstream of first automatic shut-off valve or other safety devices)
- Heat exchangers
- Manual or automatic valves
- Pressure regulators

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- Pressure relief devices including valves
- Pressure, temperature, hydrogen and flow sensors (if used as a safety device)
- Refuelling connection or receptacles
- Hydrogen leakage detection sensors
- Fittings
- Hydrogen filters
- Removable storage system connectors

If your product is not listed here, please contact us by filling out the contact form.

If you wish to launch your automobile with one of the Hydrogen (H<sup>2</sup>) components on the European market, you are compelled to certify all those components that use Hydrogen (H<sup>2</sup>) in their propulsion system, according to the Directive 79/2009 (Dir. 79/2009). For the European market it is imperative to have an E trademark on your products which is also preferable in the Middle East and Asian countries.

You can ask for a quotation or information either by phone or e-mail. A starting point for a quotation is Directive 79/2009 (Dir. 79/2009). After approval of the quotation by both parties the actual test work starts. A certificate will be sent to you by RDW when all the test work has been performed successfully and you have entered into a surveillance agreement with Kiwa.

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