

Kiwa Expert Centre Polymers

Your Expert in Polymers from Cradle to Cradle

Kiwa Expert Centre Polymers is a joint initiative of different Kiwa divisions, in which all available knowledge, experience and laboratory facilities regarding plastics and rubbers, within the entire Kiwa organisation, will be at your disposal via one central point of co-ordination. In this way your question or challenge will quickly arrive at the right location and be dealt with by the most suitable experts for the job. Another large benefit is that the Kiwa Expert Centre Polymers can overview the entire life cycle of a polymer product, from Cradle to Cradle, which can create great value for you, e.g. in terms of time savings and cost efficiency. Of course the one-stop-shop advantage is a result of this approach as well.

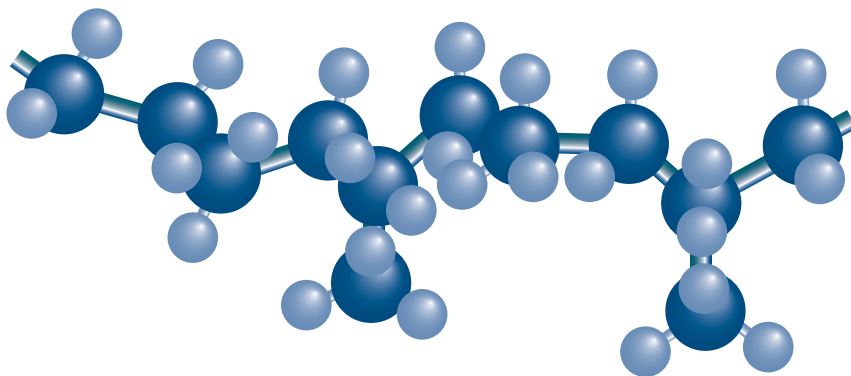
It is important for you to know that we ensure that our independency remains intact. This means that consultancy and R&D work is always performed within our Technology division, which acts as a separate company, independent from our Certification divisions within the Kiwa Group, where the testing & certification activities are executed, and from the division Kiwa Training.

The different Kiwa divisions within the group have each built up a vast knowledge and experience with plastics and rubbers in the gas (energy), water, construction and infrastructure sector. However, the Kiwa Expert Centre Polymers can create value in the field of polymers in many other sectors and markets as well. For example, in the past we already have provided successful solutions to challenges in the automotive, chemical and environmental industry.

From Cradle to Cradle

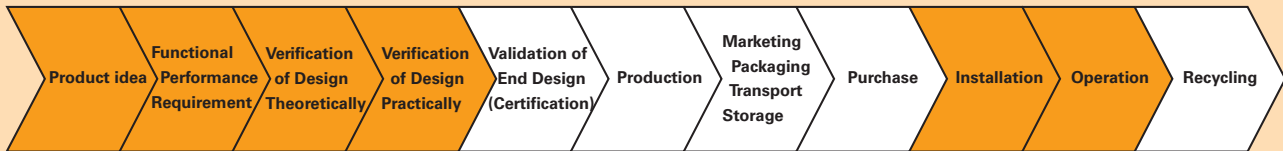
Whatever the sector you are in, Kiwa can act as your Expert in Polymers from Cradle to Cradle, whether you are a manufacturer, supplier, installer, contractor, operator, user, authority or any other party who is somehow involved in one or more stages of a Polymer product's life cycle.

In the polymer product life cycles on the next pages is shown in which stage the Kiwa Divisions Technology, Certification and Training can create added value for you.



Products & Services of the Technology Division of Kiwa

Kiwa Gas Technology can create added value for you in many stages of a polymer product's life cycle (indicated in orange):



• Product Idea Stage

- market studies
- support in materials selection in relation to the application

• Functional Performance Requirements Stage

- support in material selection in relation to the application
- support in selecting right design in relation to pretended use
- drafting of clear product requirements

• Theoretical Verification of Design Stage

- design and realisation of new test methods
- drafting of first test programme

• Practical Verification of Design Stage

- pre-certification testing

• Installation Stage

- supervision during installation
- consultancy and R&D regarding installation & jointing techniques
- consultancy and R&D regarding destructive and non destructive testing (NDT) of pipes and joints
- trouble shooting & problem solving (supported by testing)
- analyses of damages during installation

• Operation Stage

- damage and incident analyses
- trouble shooting & problem solving (supported by testing)
- consultancy regarding maintenance & inspection schemes
- residual quality & lifetime predictions
- asset management consultancy
- second opinions

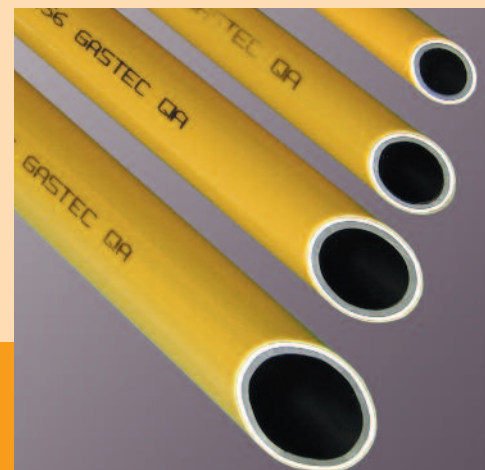
Benefits of Kiwa Gas Technology as Your Expert in Polymers

- independent, international reputation
- fully equipped state-of-the-art laboratories
- long experience in performing wide scope of physical, chemical and mechanical testing
- wide view of regulations and knowledge of (inter)national standards
- extensive network of contacts of all stakeholders
- extensive knowledge of markets and products
- centre of an international network of stakeholders and we are your intermediary towards them
- knowledge of wide range of materials (PE, PEX, PP, PVC, PA, POM, PPSU, PVDF, rubbers, etc.)
- wide knowledge of product specifications
- specialist expertise regarding the relation between material, construction and regulations
- highly qualified experts with international orientation and reputation
- extensive expertise in material behaviour in practice, due to internal and external factors, and time

More information

Further information regarding consultancy and R&D support in these stages of a polymer product life cycle can also be found on the website of Kiwa Gas Technology: www.kiwagastechnology.nl, click on Gas Distribution Systems:

- Material Research
- Test Possibilities
- Permeation
- Jointing Techniques



Your Expert in Polymers from Cradle to Cradle

Products & Services of the Certification Division of Kiwa

Kiwa Certification can create added value for you in many stages of a polymer product's life cycle (indicated in blue):



• Product Idea & Development Stage

- drafting of new product or system standards (e.g. BRL's)
- consultancy regarding regulations, standards and ISO9001, ISO14001, etc
- support to prepare for future political, regulatory & technical developments in European Economical Area (EEA)
- **Added Value for you in this stage:**
 - independent, international reputation
 - wide view of regulations and knowledge of (inter)national standards
 - extensive network of contacts of all stakeholders
 - extensive knowledge of markets and products
 - centre of an international network of stakeholders and we are your intermediary towards them
 - knowledge of wide range of materials
 - wide knowledge of product specifications
 - highly qualified experts with international orientation and reputation
 - already involving us in these stages will shorten your time-to-market & will avoid non-compliances at the certification stage

• Certification Stage (Validation of End Design)

- certification of your product according to the desired standard
- providing your product with the Kiwa, KOMO , GASTEC QA , and many more quality marks
- providing you with a Europe wide, or national certification: the Kiwa Quality Kitemark (KQ)
- **Added Value for you in this stage:**
 - independent and accredited
 - fully equipped state-of-the-art laboratories
 - wide experience with certification processes
 - mutual agreements with other certification bodies to recognise each other's test results
 - Notified Body for Materials Directive
 - one stop shop: we can certify your product(s) for different applications (gas/ water/ construction) and different certificates
 - wide notification of EU-directives (e.g. PED, CPD)

• Production, Marking, Packaging, Transport & Storage Stage

- we can inspect your quality control processes as part of the certification
- periodical product and production surveillance
- witness testing
- Type testing (TT)
- Audit testing (AT)
- **Added Value for you in this stage:**
 - knowledge of and experience with quality control and quality management systems

• Purchase / Procurement Stage

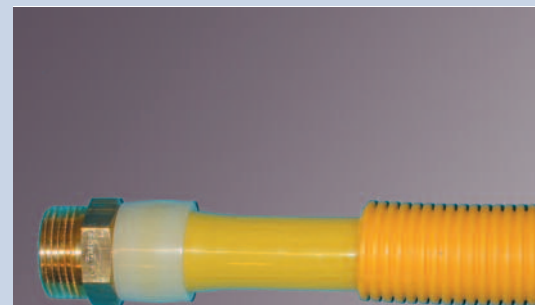
- auditing your quality entry control
- inspection of a batch according to customers specifications
- batch release test
- **Added Value for you in this stage:**
 - extensive knowledge of entry quality control
 - extensive knowledge of quality management

• Installation Stage

- process certification
- quality control of installed welds (e.g. by destructive testing)
- **Added Value for you in this stage:**
 - knowledge of and field experience with quality control processes during installation

• Recycling Stage

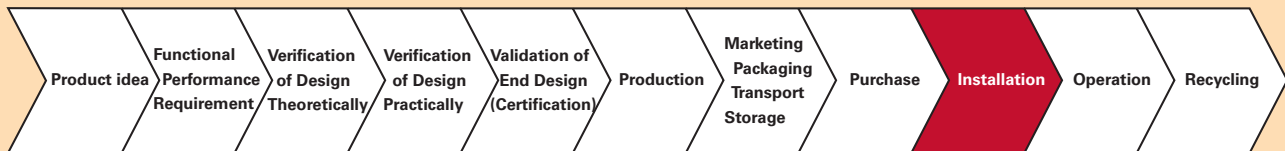
- **Added Value for you in this stage:**
 - knowledge of the possibilities of many plastics products to certify these products and related processes



Kiwa Expert Centre Polymers

Products & Services of the Training Division of Kiwa

Kiwa Training can create added value for you in the following stage of a polymer product's life cycle (indicated in red):



• Installation Stage

- training of installers / contractors / welders
- person certification (e.g. butt fusion and electrofusion welders)
- *Added Value for you in this stage:*
 - fully equipped training facilities and experienced trainers

More information

Further information regarding these Kiwa Training Services can also be found under the following link for training and certification of PE welders: www.kiwatraining.nl (in Dutch), click on 'Energiedistributietechniek'

Profile of Kiwa

Kiwa wishes to be a 'Partner for progress' based on acknowledged leadership in certification and related testing and inspections, supported by training, technology and consultancy. To achieve this in the best possible way, the various activities are carried out by specific, market-oriented business units. These business units operate independently of each other in the market with a large degree of autonomy and have joined forces in the Expert Centres. Kiwa's head office is situated in Rijswijk (province of South Holland), the Netherlands. With over 600 employees Kiwa operates in more than forty countries from offices in Belgium, China, Germany, Italy, the Netherlands, Turkey, the United Kingdom and Sweden.



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