

Connecting**Chemistry**

A CLEAN SOLUTION

COMPOUNDS FOR
DRINKING WATER
APPLICATIONS



POLYMERS DACH

Product information

A clean Solution

AQUAFORCE® products complement our product portfolio in the field of metal replacement materials. The PA66-based engineering materials have been specially developed for components with the required drinking water approval.

Drinking water is a high-quality food product and must meet the highest hygiene demands. However, quality can be adversely affected on the way to the consumer, for example by heavy metals in the supply system. AQUAFORCE® products can replace conventional metal components and thus ensure perfect drinking water quality.

AQUAFORCE® PA66 materials comply with both the German Federal Environment Agency's Guideline for Hygienic Assessment of Organic Materials in Contact with Drinking Water (KTW Guideline) and the microbiological requirements laid down in Worksheet W 270 issued by the German Technical and Scientific Association for Gas and Water (DVGW). All the materials have additionally been certified as being in conformity with the ACS positive list in France and the WRAS approval in the UK (requirements of BS 6920-1:2000).

AQUAFORCE® PA66 can be supplied with 30% to 60% glass fiber reinforcement. Its outstanding mechanical properties make AQUAFORCE® the ideal material for parts subject to static and dynamic loading and permit the substitution of metals such as brass and zinc. Users thus have suitable engineering alternatives to metallic materials at their disposal.

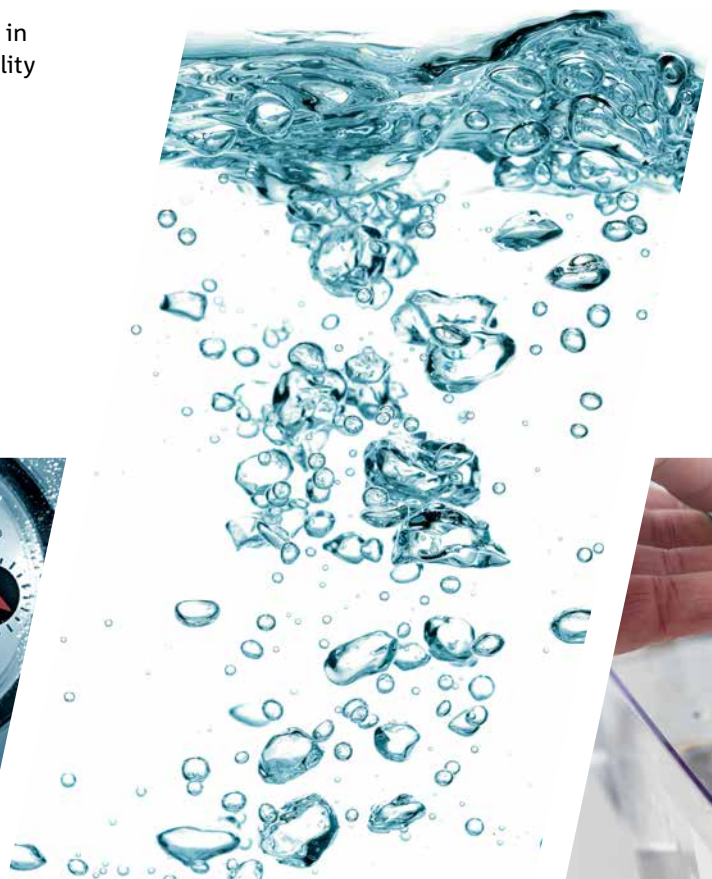
AQUAFORCE® PA66 G610-01, for example, has a tensile strength of 240 MPa and a modulus of elasticity in tension in excess of 20 000 MPa. The fact that it offers the processability of a thermoplastic and a low price per unit volume gives it clear economic advantages over metals and metal alloys.

Application Options

The product range is used, for example, in the areas of water meters, filters, coffee machines, pumps, tubes, fittings, etc.

AQUAFORCE® Features

- Metal substitute material
- Compounds especially for use in drinking water applications
- Excellent mechanical properties
- Glass fiber reinforcements from 30% to 60%
- Very good thermoplastic processability
- Uncontaminated drinking water
- Corrosion resistant
- More cost effective than brass components of the same volume
- Design freedom allows fabrication of complex components
- Approvals:
 - KTW Guideline / DVGW Worksheet W 270 (Germany)
 - ACS (France)
 - WRAS (UK, BS 6920-1:2000)



Physical and mechanical properties

AQUAFORCE®			PA66 G30-01	PA66 G50-01	PA66 G60-01
Glass fiber reinforcement		%	30	50	60
Density	ISO 1183	g/cm ³	1.36	1.57	1.69
Tensile strength dry 23 °C	ISO 527	MPa	190	235	240
Tensile strength conditioned 23 °C	ISO 527 ISO 110	MPa	120	160	165
Tensile strength conditioned water 23 °C	ISO 527 saturated	MPa	95	130	130
Elongation at break dry 23 °C	ISO 527	%	3	2.7	2.6
Elongation at break conditioned 23 °C	ISO 527 ISO 110	%	5.5	4.5	4
Elongation at break conditioned water 23 °C	ISO 527 saturated	%	6.5	4.5	4
Tensile modulus dry 23 °C	ISO 527	MPa	10 500	16 900	20 500
Tensile modulus conditioned 23 °C	ISO 527 ISO 110	MPa	7 000	11 500	14 200
Tensile modulus conditioned water 23 °C	ISO 527 saturated	MPa	5 400	9 000	11 000
Charpy impact strength unnotched dry 23 °C	ISO 179/1eU	kJ/m ²	70	90	85
Charpy impact strength unnotched conditioned 23 °C	ISO 179/1eU ISO 110	kJ/m ²	70	85	80
Charpy impact strength unnotched conditioned water 23 °C	ISO 179/1eU saturated	kJ/m ²	75	75	70
Charpy impact strength notched dry 23 °C	ISO 179/1eA	kJ/m ²	10	13	14
Charpy impact strength notched conditioned 23 °C	ISO 179/1eA ISO 110	kJ/m ²	12	18	18
Charpy impact strength notched conditioned water 23 °C	ISO 179/1eA saturated	kJ/m ²	25	28	26
Melting temperature	ISO 3146 (10K/min)	°C	260	260	260
Moisture absorption 23 °C / 50 % r. F.	ISO 62	%	2	1.4	1.1
Water absorption 23 °C / saturated	ISO 62	%	5.2	3.8	3.1
Moulding shrinkage	ISO 294 ¹⁾	%	0.1 - 0.9	0.1 - 0.5	0.1 - 0.5

The specified values refer to uncoloured materials

¹⁾ Internal test method in accordance with ISO 294 (test specimen 60 mm x 60 mm x 2 mm)



Brenntag Polymers in brief

- Innovative development partner for your projects
- Decades of compounding experience
- Certified to ISO 9001:2015 and ISO 14001:2015
- More than 700 products from our own development work
- Own production processes (feed-up process)
- State-of-the-art compounding facilities
- Cooperation with other, well-known global market leaders
- Flexible demand adjustment, fast reaction times
- Networked in regional and global markets
- Cross-industry solutions

Our core Competencies

- Compound Development
- Individual Material Solutions
- Metal Substitution
- Thermally conductive Compounds
- Compounds for the Food Industry
- Detectable Compounds
- Tribologically optimized Compounds
- Drinking Water Compounds



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