

**AquaScreen® Fast  
Extract, Legionella  
pneumophila,  
Legionella species,  
Pseudomonas  
aeruginosa and  
Escherichia coli**

**Detection  
of Water  
Pathogens  
via qPCR**

- ✓ DNA based
- ✓ Combines water filtration, lysis of collected microorganisms, optimized DNA extraction system and qPCR analysis
- ✓ Included Internal control DNA to verify the success of both the DNA extraction and qPCR assays
- ✓ Temperature stable components

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# Water Testing – Procedure

## Step 1: Preparation of the Sample Material

Drinking water, condensed water from cooling systems, bathing or pool water, and waste water released from suspended particles can be used as sample material.

As intact microorganisms are needed for the filtration procedure thermal decontamination procedures can not be monitored immediately. With suspended particles or fixed volatile contents, contaminated water samples can be purified by prior filtration with a paper folded filter. The samples may not be centrifuged for purification.

For the testing procedure, at least 100 ml is minimally required, however a sample volume of 1000 ml is recommended for highest sensitivity.

## Step 2: qPCR

Currently, AquaScreen® qPCR kits are available for quantitative detection of *Legionella pneumophila*, *Legionella spp.*, *Pseudomonas aeruginosa* and *Escherichia coli* in water samples. Kits for additional contaminants/parameters are in preparation.

The test is based on quantitative real-time PCR (qPCR) for highest precision, specificity, and sensitivity. The PCR mix contains a primer/probe set specific for the microorganism to be detected (fluorescence at ~520 nm, FAM™ channel). The kit includes also an internal control, which is detected by an additional probe (~560 nm, ROX™ channel). With a unique internal sequence, the internal control shares the primer binding sites with the target, thereby serving as a homologous control to identify and exclude false negative results (e.g. due to inhibition of the reaction by the sample matrix).

# AquaScreen® Fast Extract

## Features

### Short Description:

Rapid DNA extraction from water samples

### Recommended Use:

AquaScreen® Fast Extract can be used with your established filtration device (47 mm frit) for the extraction of legionella and other microorganisms from water samples. AquaScreen® Fast Extract is optimized for high flow and throughput and provides high quality DNA for subsequent PCR analysis.

### Compliance:

AFNOR XP T90-471 and ISO/TS 12869:2012 in combination with AquaScreen® qPCR kits

### Kit Components:

Membrane filters, Incubation dishes, Incubation, collection and sample storage tubes, Lysis, binding, wash and elution buffers

**Required Lab Devices & Consumables:** Vacuum pump, Microcentrifuge, Filtration system, 47 mm frit, Pipetting equipment, filtered tips, Incubator (37 °C for petri dishes, 70 °C for reaction tubes), Ethanol (96 - 100 %)

### Shelf Life and Storage:

Components are stable for at least 6 months at room temperature.

## Ordering Information

### Catalog Number

Cat. No. 32-1010 10 extractions  
Cat. No. 32-1050 50 extractions

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# AquaScreen® Legionella pneumophila

## Features

**Type of PCR:** Quantitative real-time PCR (qPCR)

**Description:** The AquaScreen® Legionella pneumophila qPCR Detection kit is used for DNA samples extracted with the AquaScreen® Fast Extract system for quantification of Legionella pneumophila in water samples. The supplied primer set is specific for a segment of the mip region of the Legionella pneumophila genome.

**Recommended Use:** Applicable in research and industry for QA testing of household and process water. Not recommended for clinical diagnostics, testing of human samples or pharmaceutical products.

**Compliance:** AFNOR XP T90-471 and ISO/TS 12869:2012

**Kit Components:** Freeze-dried primers, probes, nucleotides and Taq polymerase, Rehydration Buffer, Freeze-dried Positive Control DNA, Freeze-dried Internal Amplification Control

**Required Consumables:** PCR reaction tubes  
Optional: For calibration we recommend our *Legionella pneumophila* DNA Calibration Reagent (Cat. No. 52-0101).

**Required Lab Devices:** Pipetting equipment, qPCR cyclers with filter sets for FAM™ and ROX™

**Storage and Shelf Life:** Components are stable for at least 6 months if stored at +2 to +8 °C. After rehydration the reagents must be stored below -18 °C.

## Ordering information

### Catalog Number

Cat. No. 34-2025 25 reactions  
Cat. No. 34-2100 100 reactions

Cat. No. 34-2250 250 reactions

Primer sets and nucleotides are provided in aliquots of 25 reactions each.

# AquaScreen® Legionella Species

## Features

**Type of PCR:** Quantitative real-time PCR (qPCR)

**Description:** The AquaScreen® Legionella species qPCR Detection Kit is used for DNA samples extracted with the AquaScreen® Fast Extract system for quantification of Legionella spp. in water samples. The supplied primer set is specific for a broad range of legionella species, but does not detect other waterborne bacteria as required by ISO/TS 12869:2012.

**Recommended Use:** Applicable for water testing as described in ISO/TS 12869:2012, in research and industry for QA testing of process water. Not recommended for clinical diagnostics, testing of human samples or pharmaceutical products.

**Compliance:** AFNOR XP T90-471 and ISO/TS 12869:2012

### Kit Components:

Freeze-dried primers, probes, nucleotides and Taq polymerase, Rehydration Buffer, Freeze-dried Positive Control DNA, Freeze-dried Internal Amplification Control

**Required Consumables:** PCR reaction tubes  
Optional: For calibration we recommend our *Legionella pneumophila* DNA Calibration Reagent (Cat. No. 52-0101).

**Required Lab Devices:** Pipetting equipment, qPCR cyclers with filter sets for FAM™ and ROX™

**Storage and Shelf Life:** Components are stable for at least 6 months if stored at +2 to +8 °C. After rehydration the reagents must be stored below -18 °C.

## Ordering Information

### Catalog Number

Cat. No. 34-2025 25 reactions  
Cat. No. 34-2100 100 reactions

Cat. No. 34-2250 250 reactions

Primer sets and nucleotides are provided in aliquots of 25 reactions each.

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# AquaScreen® *Pseudomonas aeruginosa*

## Features

**Type of PCR:** Quantitative real-time PCR (qPCR)

**Description:** The AquaScreen® *Pseudomonas aeruginosa* qPCR Detection kit is used for DNA samples extracted with the AquaScreen® FastExtract system for quantification of *Pseudomonas aeruginosa* in water samples.

**Recommended Use:** Applicable in research and industry for QA testing of household and process water. Not recommended for clinical diagnostics, testing of human samples or pharmaceutical products.

**Compliance:**

No guidelines are available for molecular testing of water samples for *Pseudomonas aeruginosa*.

**Kit Components:** Freeze-dried primers, probes, nucleotides and Taq polymerase, Rehydration Buffer, Freeze-dried Positive Control DNA, Freeze-dried Internal Amplification Control

**Required Consumables:** PCR reaction tubes  
Optional: For calibration we recommend our *Pseudomonas aeruginosa* DNA Calibration Reagent (Cat. No. 52-0071).

**Required Lab Devices:** Pipetting equipment, qPCR cycler with filter sets for FAM™ and ROX™

**Storage and Shelf Life:** Components are stable for at least 6 months if stored at +2 to +8 °C. After rehydration the reagents must be stored below -18 °C.

## Ordering Information

**Catalog Number**

Cat. No. 34-6025 25 reactions  
Cat. No. 34-6100 100 reactions

Cat. No. 34-6250 250 reactions  
Primer sets and nucleotides are provided in aliquots of 25 reactions each.

# AquaScreen® *Escherichia coli*

## Features

**Type of PCR:** Quantitative real-time PCR (qPCR)

**Description:** The AquaScreen® *Escherichia coli* qPCR Detection kit is used for DNA samples extracted with the AquaScreen® FastExtract system for quantification of *Escherichia coli* in water samples.

**Recommended Use:** Applicable in research and industry for QA testing of household and process water. Not recommended for clinical diagnostics, testing of human samples or pharmaceutical products.

**Compliance:**

No guidelines are available for molecular testing of water samples for *Escherichia coli*.

**Kit Components:** Freeze-dried primers, probes, nucleotides and Taq polymerase, Rehydration Buffer, Freeze-dried Positive Control DNA, Freeze-dried Internal Amplification Control

**Required Consumables:** PCR reaction tubes  
Optional: For calibration we recommend our *Escherichia coli* DNA Calibration Reagent (Cat. No. 52-0083).

**Required Lab Devices:** Pipetting equipment, qPCR cycler with filter sets for FAM™ and ROX™

**Storage and Shelf Life:** Components are stable for at least 6 months if stored at +2 to +8 °C. After rehydration the reagents must be stored below -18 °C.

## Ordering Information

**Catalog Number**

Cat. No. 34-7025 25 reactions  
Cat. No. 34-7100 100 reactions

Cat. No. 34-7250 250 reactions  
Primer sets and nucleotides are provided in aliquots of 25 reactions each.

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