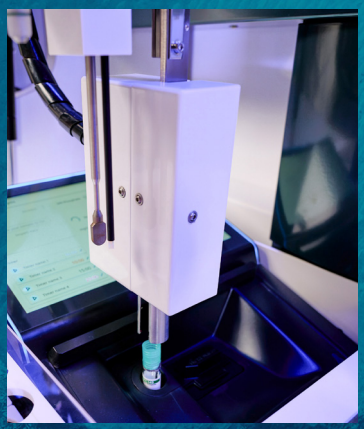
AP4900 Laboratory Robot

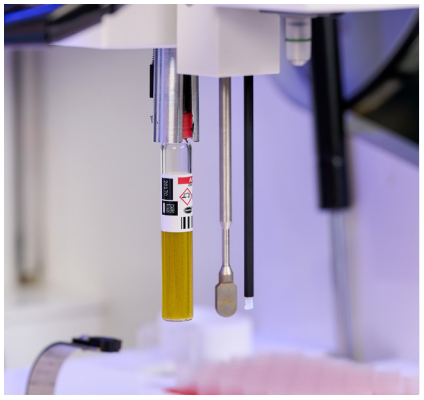


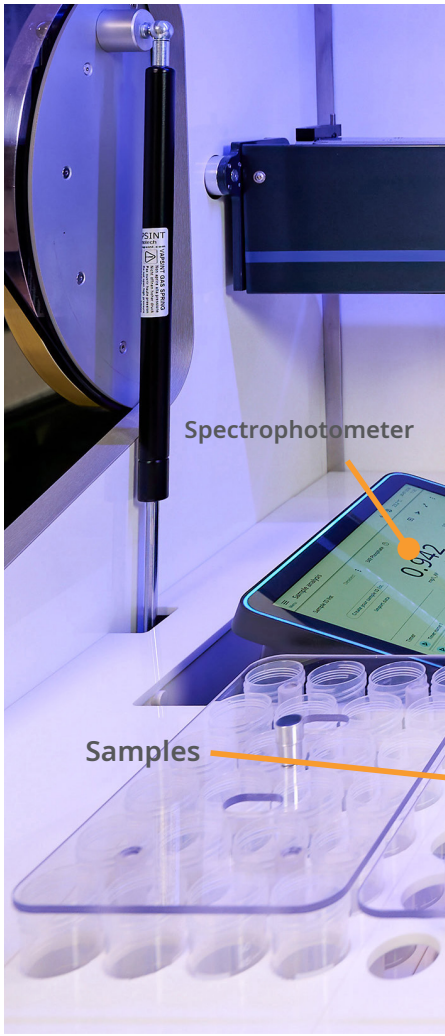
FULLY AUTOMATED WATER ANALYSIS



- Saves time and costs
- Increases productivity and flexibility
- Highest precision and accuracy due to automated procedures
- Parallel execution of different samples and methods
- Reliable and complete traceability of results







Water quality analytics made easy

For more than 80 years, Hach™ has been helping laboratories make water analysis simpler, faster and more reliable. Building on decades of expertise in analytical chemistry, Hach has continuously evolved water testing from manual methods to advanced instrumentation and laboratory automation. Today, the AP4900 helps laboratories streamline workflows, reduce manual steps and variability, and deliver consistent, traceable results with confidence.

Why automate basic chemistry?

- Modern laboratories are increasingly overloaded with additional analysis required by new EU regulations
- Demand for automation comes directly from laboratories, especially for basic routine chemistry
- To improve analytical repeatability
- To reduce human error caused by manual handling and distractions
- Routine analysis does not contribute to operator professional growth

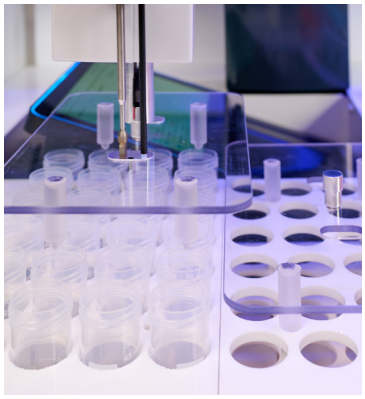
What does the AP4900 do?

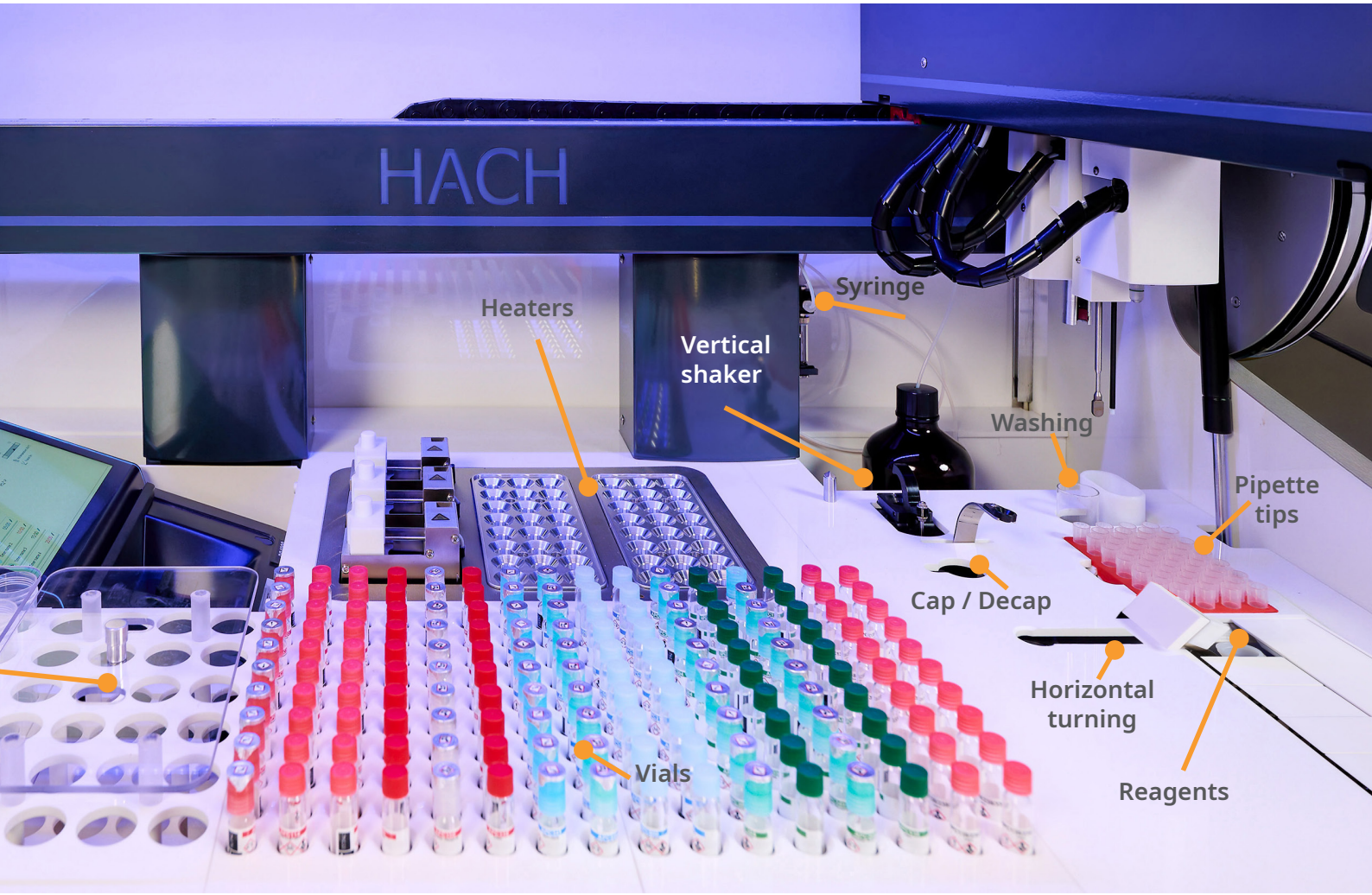
- Aspiration of samples under agitation
- Tube preparation
- Decapping
- Sample and reagent injection
- Capping
- Shaking
- Heating for digestion
- Measurement
- Archiving of results









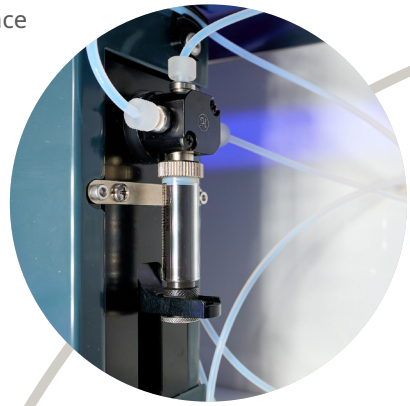


Liquid management: Syringe system

Optimised management of samples and reagents

Syringe module

- For sample and reagents management
- Only filled with Ultra Pure Water (no contact with chemistry)
- Calibrated, following ISO standard, with ultrapure water and a laboratory analytical balance





Sampling & handling

Efficient management of even the most challenging samples

1 2 mm PTFE sampling needle

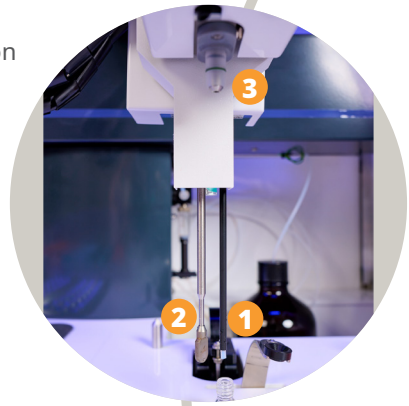
For sample management – Allows suspended solids to pass through

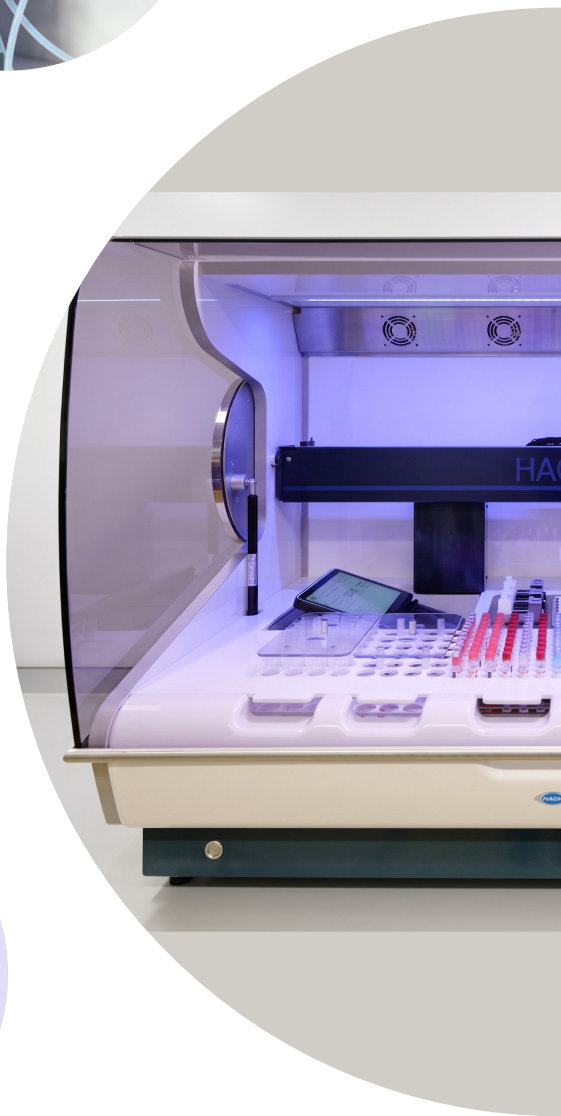
2 9 mm octagonal stirrer

For efficient sample homogenization before aspiration (for total parameters)

3 Automatic reagents pipetting

Reuses tips several times for the same liquid reagent (up to 48 tips)





Cuvette handling

Ensure optimal handling of the tubes for each method

- **Cap/Decap station**

  Automatically opens and closes cuvette tests for sample and reagent addition

- **Cuvette shakers**

  Gentle horizontal shaker

  Intensive vertical shaker



Washing stations

Efficient washing for accurate results

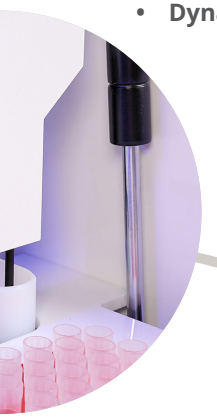
1 Two independent washing stations:

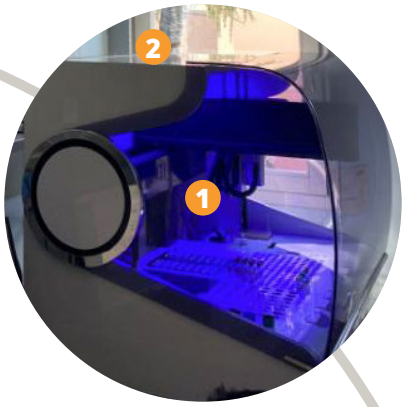
- **Dynamic washing**

  Internal and external rinsing of the needle with ultrapure water

- **Static washing**

  Automatic hypochlorite-based cleaning to fully rinse the hydraulic system, at the start and end of each run and/or after a challenging sample



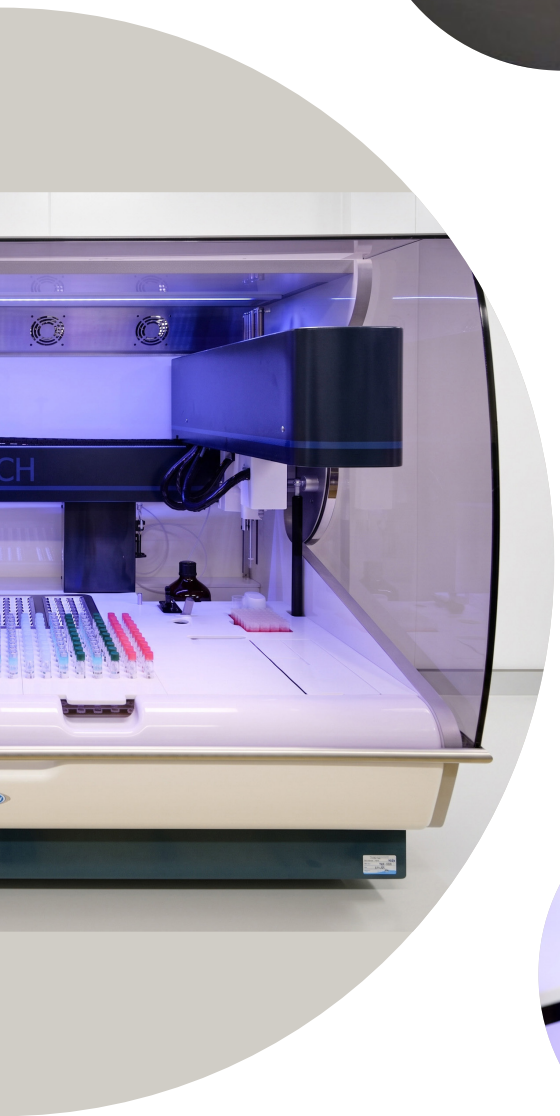


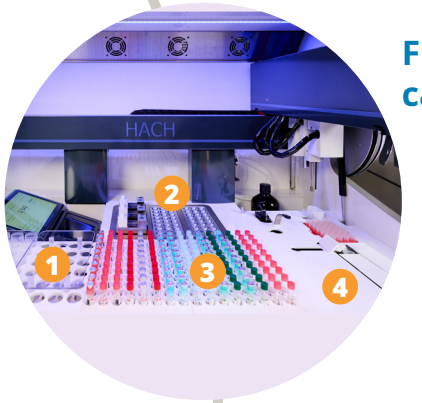
Safety

1 **Fully enclosed instrument** for maximum operator safety

2 **Active exhaust tunnel** for fumes and exhausted gases

- **Connectable to laboratory hood or chimney**





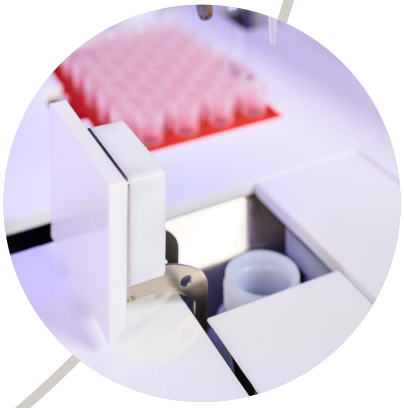
Flexible configuration and capacity

1 24 to 100 standard samples

2 48 (2 x 24) to 96 (2 x 48) Heating positions for digestion

3 160 (16 x 10) cuvette tests

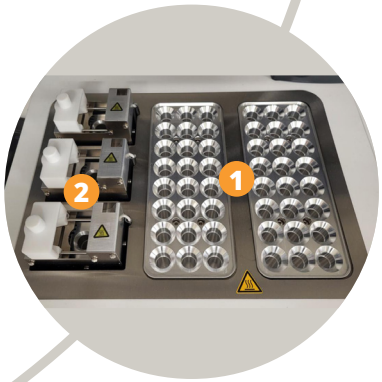
4 6 + 6 reagents bottles



Reagent management independent of samples

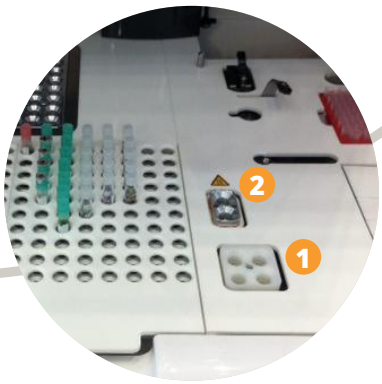
Automatic reagents pipetting:

- Up to 12 reagents
- Reuses tips several times for the same liquid reagent (up to 48 tips)
- Reagents are protected by covers to avoid contamination and odors



Optional modules: High temperature heaters

1. Standard dual heating blocks operating at two different temperatures (up to 150 °C). Ideal for COD and TN and TP
2. Up to **6 optional high temperature (HT) positions** (up to 180 °C) for high-speed digestion



Optional modules: Surfactants

1. Orbital shaker
2. Heating block (40 °C)
   - Enables automated surfactants cuvette tests

Surfactants		
LCK332	Surfactants, anionic	0.5 - 2 mg/L
LCK432	Surfactants, anionic	0.1 - 4 mg/L
LCK331	Surfactants, cationic	0.2 -2 mg/L
LCK333	Surfactants, nonionic	0.2 - 6 mg/L

AP4900 Multi Configuration

Version	Art. Number	Multi	Pipetting / Dilution	Samples capacity	Heaters capacity	Cuvette tests capacity (same for all versions)
AP4900 Multi						
Standard version	SMAP4900-Multi	X	X	24 (1 x 24)	48 (2 x 24)	160 (2 x 80)
AP4900 Multi Upgrades						
Upgrade to 48 samples (1 extra samples rack 24 positions)	SMUpgrade-48S	X	X	48	48 or 96	160
Upgrade to 100 samples (2 racks of 50 positions)	SMUpgrade-100S	X	X	100	48 or 96 (SMUpgrade-96H recommended)	160
Upgrade to 96 heating positions (2 blocks of 48 positions)	SMUpgrade-96 H	X	X	24 or 48 or 100 (SMUpgrade-485 or 96S recom-mended)	96	160
Upgrade with 3 High temperature positions + 48 heating positions	SMUpgrade-H3-48	x	x	24 or 48 or 100	3 = HT + 48	160
Upgrade with 3 High temperature headers blocks 170°C (Replace 1 x 24 position header by 3HT heaters)	SMUpgrade-HT3	X	X	24 or 48 or 100	3 = HT + 24	160
Upgrade with 6 High temperature heaters blocks 170°C (Replace 1 x 24 positions heater by 6 HT heaters)	SMUpgrade-HT6	X	X	24 or 48 or 100	6 = HT + 24	160
Upgrade surfactants (1 x 2 positions heater + 1 x 4 positions shaker)	SMUpgrade-4SF	X	X	24 or 48 or 100	48 or 96	160

Parameters Summary

Ammonium			
APC304	According ISO 23695	0.015 – 2 mg/L NH_4-N	0.02 – 2.5 mg/L NH_4
LCK505	According ISO 23695	0.5 – 5 mg/L NH_4-N	0.65 – 6.5 mg/L NH_4
LCK305	According ISO 23695	1 – 12 mg/L NH_4-N	1.3 – 15 mg/L NH_4
APC303	According ISO 23695	2 – 47 mg/L NH_4-N	2.5 – 60 mg/L NH_4
LCK302	According ISO 23695	47 – 130 mg/L NH_4-N	60 – 167 mg/L NH_4

COD			
APC500	According ISO 15705	0 – 150 mg/L O_2	
APC400	According ISO 15705	0 – 1000 mg/L O_2	
LCK1414		5 – 60 mg/L O_2	
APC314		15 – 150 mg/L O_2	
LCK614		50 – 300 mg/L O_2	
LCK714		100 – 600 mg/L O_2	
LCK514		100 – 2000 mg/L O_2	
APC114		150 – 1000 mg/L O_2	
LCK014		1000 – 10000 mg/L O_2	
LCK914		5000 – 60000 mg/L O_2	
LCK1014	Cl^- up to 4 g/L	100 – 2000 mg/L O_2	
LCK1814	Cl^- up to 20 g/L	7 – 70 mg/L O_2	
LCK1914	Cl^- up to 20 g/L	70 - 1000 mg/L O_2*	
LCK214	Hg Free	0 – 1000 mg/L O_2	

*Measuring range starts at 70 mg/L for AP3900 / AP4900.

LATON, Total Nitrogen			
APC138	According ISO 23697-1	1 – 16 mg/L TN_b	
APC238	According ISO 23697-1	4 – 40 mg/L TN_b	
APC338	According ISO 23697-1	20 – 100 mg/L TN_b	

Nitrate			
APC339	According ISO 23696-1	0.23 – 13.5 mg/L NO_3-N	1 – 60 mg/L NO_3
APC340	According ISO 23696-1	5 – 35 mg/L NO_3-N	22 – 155 mg/L NO_3

Nitrite			
APC341		0.015 – 0,6 mg/L NO_2-N	0.05 – 2 mg/L NO_2
APC342		0.6 – 6 mg/L NO_2-N	2 – 20 mg/L NO_2

TP, Total Phosphate			
APC349	Ortho and Total P	0.05 – 1.5 mg/L PO_4-P	0.15 – 4.5 mg/L PO_4
APC348	Ortho and Total P	0.5 – 5 mg/L PO_4-P	1.5 – 15 mg/L PO_4
APC350	Ortho and Total P	2 – 20 mg/L PO_4-P	6 – 60 mg/L PO_4

Chlorides			
LCK311		1 – 70 mg/L and 70 – 1000 mg/L Cl	

Free Cyanide			
LCK315		0.01 – 0.6 mg/L	

Formaldehyde			
LCK325		0.5 – 10 mg/L	

Organics acids (Fatty Acids)			
LCK365		50 – 2500 mg/L Acetic Acid	

Orthophosphate			
LCK049		1.6 – 30 mg/L PO_4-P	5 – 90 mg/L PO_4

Permanganate index			
LCK394		0.5 – 10 mg/L O_2	

Phenole			
LCK345		0.05 – 5 mg/L	
LCK346		5 – 150 mg/L	

Sulfide			
LCK653		0.1 – 2 mg/L	

Surfactants			
LCK332	Surfactants, anionic	0.05 – 2 mg/L	
LCK432	Surfactants, anionic	0.1 – 4 mg/L	
LCK331	Surfactants, cationic	0.2 – 2 mg/L	
LCK333	Surfactants, nonionic	0.2 – 6 mg/L	

APC packaging: 4 boxes of 25 cuvette tests (100 tests)

Only for Laton: 2 x 25 cuvettes for digestion + 2 x 25 cuvettes for measurement

LCK packaging: 25 cuvette tests / box



APC chemistry – exclusively suitable for the AP4900

Part number	Parameter	Measuring Range	Method	Fast digestion option	According to standard	Quality control	Number of tests	GHS Hazard Code
APC304	Ammonium	0.015 - 2.0 mg/L NH_4-N	Indophenol Blue		ISO 7150-1, DIN 38406 E5-1, UNI 11669:2017, ISO 23695	LCA700 LCA721	100	GHS05, GHS07, GHS09
APC303	Ammonium	2 - 47 mg/L NH_4-N	Indophenol Blue		ISO 7150-1, DIN 38406 E5-1, UNI 11669:2017, ISO 23695	LCA703 LCA720	100	GHS05, GHS07, GHS09
APC114	COD	150 - 1000 mg/L O_2	Dichromate	■	ISO 6060-1989, DIN 38409-H41-H44	LCA703 LCA720	100	GHS05, GHS06, GHS08, GHS09
APC314	COD	15 - 150 mg/L O_2	Dichromate	■	ISO 6060-1989, DIN 38409-H41-H44	LCA704 LCA721	100	GHS05, GHS06, GHS08, GHS09
APC500	COD	0 - 150 mg/L O_2	Dichromate		ISO 15705	LCA704 LCA721	100	GHS05, GHS06, GHS08, GHS09
APC400	COD	0 - 1000 mg/L O_2	Dichromate		ISO 15705	LCA703 LCA720	100	GHS05, GHS06, GHS08, GHS09
APC339	Nitrate	0.23 - 13.5 mg/L NO_3-N	2.6-Dimethylphenol		DIN 38405 D9-2, ISO 23696-1	LCA703 LCA721	100	GHS02, GHS05, GHS07
APC340	Nitrate	5 - 35 mg/L NO_3-N	2.6-Dimethylphenol		DIN 38405 D9-2, ISO 23696-1	LCA704 LCA720	100	GHS02, GHS05
APC341	Nitrite	0.015 - 0.6 mg/L NO_2-N	Diazotisation		EN ISO 26777, DIN 38405 D10	LCA707	100	GHS07
APC342	Nitrite	0.6 - 6.0 mg/L NO_2-N	Diazotisation		EN ISO 26777, DIN 38405 D10	LCA709	100	GHS07
APC138	Nitrogen total (LATON)	1 - 16 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	■	EN ISO 11905-1, ISO23697-1	LCA709 LCA721	50	GHS02, GHS05, GHS07, GHS08
APC238	Nitrogen total (LATON)	5 - 40 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	■	EN ISO 11905-1, ISO23697-1	LCA700	50	GHS02, GHS05, GHS07, GHS08
APC338	Nitrogen total (LATON)	20 - 100 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	■	EN ISO 11905-1, ISO23697-1	LCA708 LCA720	50	GHS02, GHS05, GHS07, GHS08
APC348	Phosphate / Phosphate, ortho	0.5 - 5.0 mg/L PO_4-P	Phosphormolybdenum Blue	■	EN ISO 6878-1-1986, DIN 38405 D11-4	LCA700 LCA707	100	GHS05, GHS07, GHS08
APC349	Phosphate / Phosphate, ortho	0.05 - 1.5 mg/L PO_4-P	Phosphormolybdenum Blue	■	ISO 6878-1-1986, DIN 38405 D11-4	LCA704 LCA709 LCA721	100	GHS05, GHS07, GHS08
APC350	Phosphate / Phosphate, ortho	2 - 20 mg/L PO_4-P	Phosphormolybdenum Blue	■	ISO 6878-1-1986, DIN 38405 D11-4	LCA703 LCA708 LCA720	100	GHS05, GHS07, GHS08

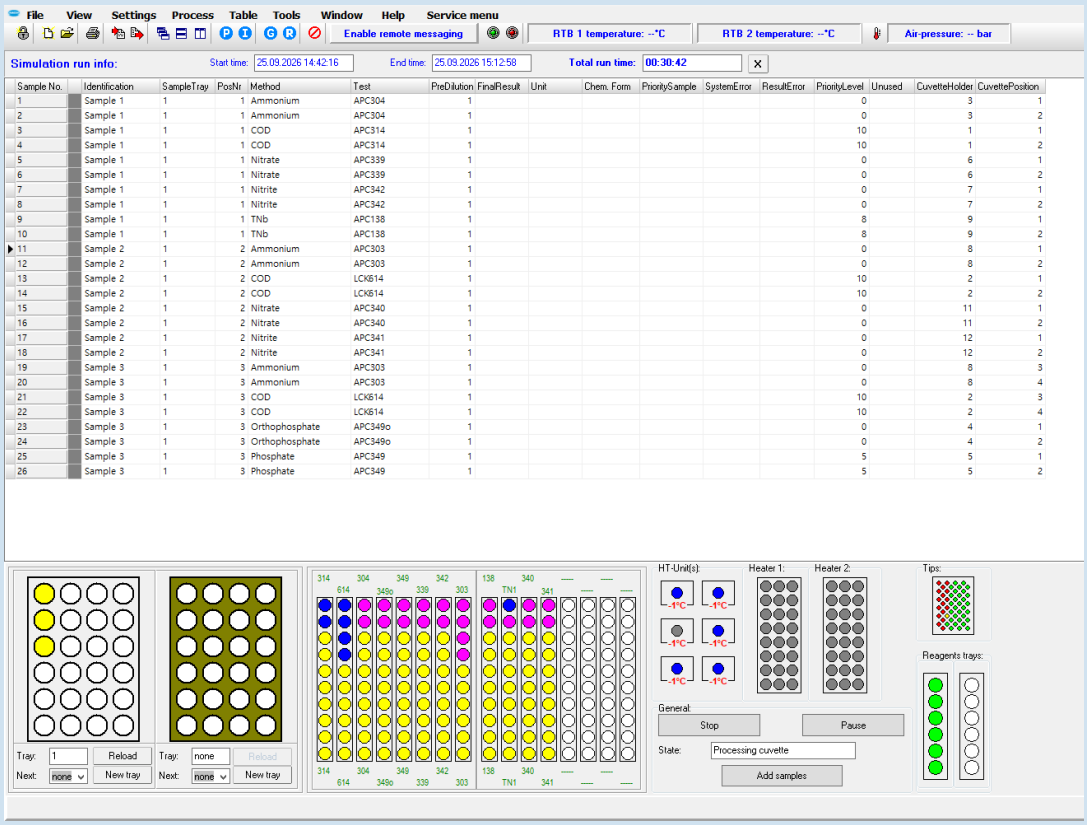
GHS Hazard Codes



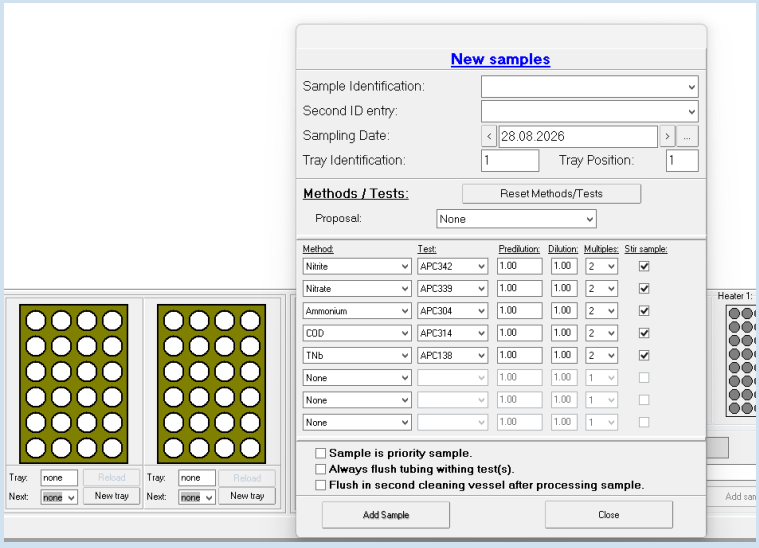
APC chemistries are available for the popular wastewater parameters. They are perfectly adapted to the way the AP4900 works. In addition many standard LCK Cuvette Tests can also be analysed with the robot, e.g. Surfactancts, Permanganate Index, Organic Acids, Formaldehyde, Free Cyanide or Chloride. Contact your local Hach expert to learn more.

Software Interface

The AP4900 software interface is designed to make laboratory workflows simple and efficient. Its intuitive interface provides a clear overview of samples, tasks, and system status, while intelligent workflow scheduling automatically organizes analyses for efficient processing. Users can add new samples even while the system is running and monitor progress in real time, helping laboratories manage changing workloads with greater flexibility and ease.'

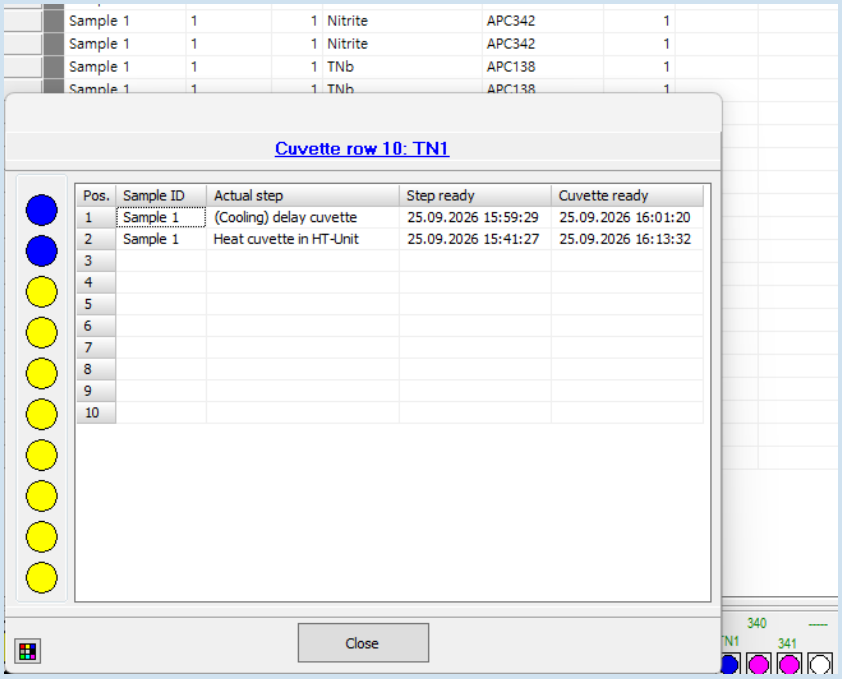


The software displays the instrument's status graphically and uses colour coding to help you keep an overview.

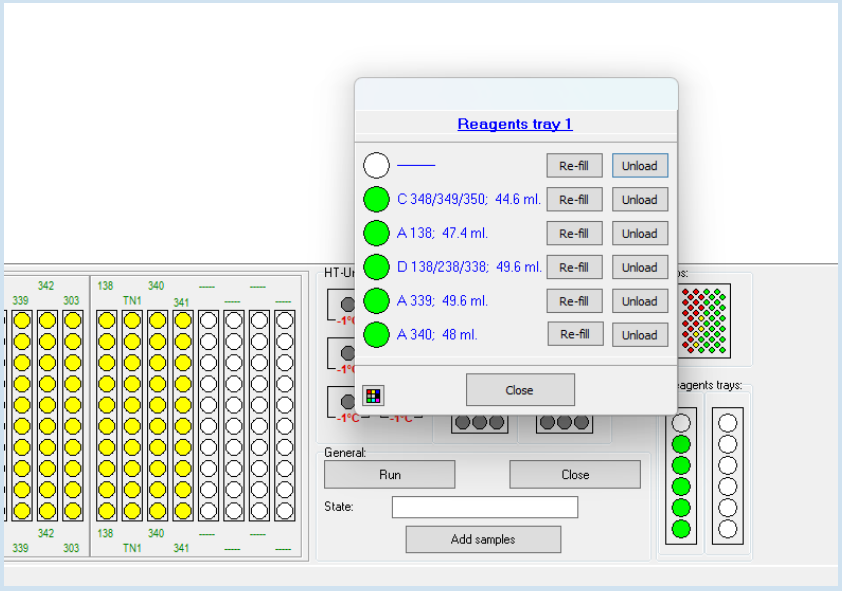


Set up multiple parameters for any sample and save your settings for repeated use.

Software Interface



The clear interface ensures you know exactly when the next step will happen and by when to expect the result.



The reagent levels are displayed in a clear manner, indicating when it needs to be refilled or replaced due to exceeding its shelf life.

HACH® SERVICE



Your Partner from Startup and Commissioning to Preventative Maintenance

Hach Service helps keep the AP4900 operating reliably by maintaining, calibrating, and inspecting the critical components behind its automated workflow.

- **Expert commissioning**

  Professional commissioning, start-up user training and application training help establish the AP4900 for reliable operation.

- **Preventive maintenance**

  Hach recommends four annual preventative maintenance per year. Routine and advanced maintenance address critical mechanical, fluidic components and prevents unexpected shutdowns.

- **Calibration & performance**

  Calibration and functional checks of critical systems help maintain the performance of the automated workflow.

- **A Service Certificate of Performance** provides documentation to support quality and regulatory compliance, a crucial document for your audits.



Hach Service helps prevent unexpected performance issues through proactive inspection, adjustment, lubrication, and replacement of critical wear components before they can impact operation.

- **Recommended maintenance frequency: 4x / year**
- **Commissioning + Startup User Training + Customized Application Training: up to 2 days**

With a Hach service plan, you can let your laboratory teams focus on analysis while Hach experts perform the specialized preventive maintenance (or repair) required to keep the AP4900 operating as intended.

	Warranty Plus	Field Plus	Premium Plus
Commissioning	X		
Preventative Maintenance + Maintenance Parts	X	X	X
Repair + Repair Parts	X		X







Contact Us

Looking forward to hearing from you!

Contact us to place an order, request product information, technical support, arrange a service plan or service engineer visit. Enquire about our training courses and workshops. We can also provide the recycling of your used reagents.

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