

GE Healthcare
Life Sciences

ÄKTA™ pure 25

Product Documentation

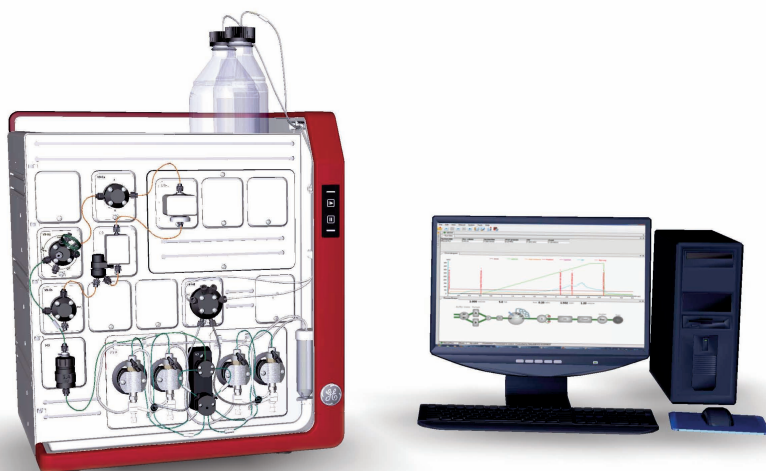


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1 Introduction

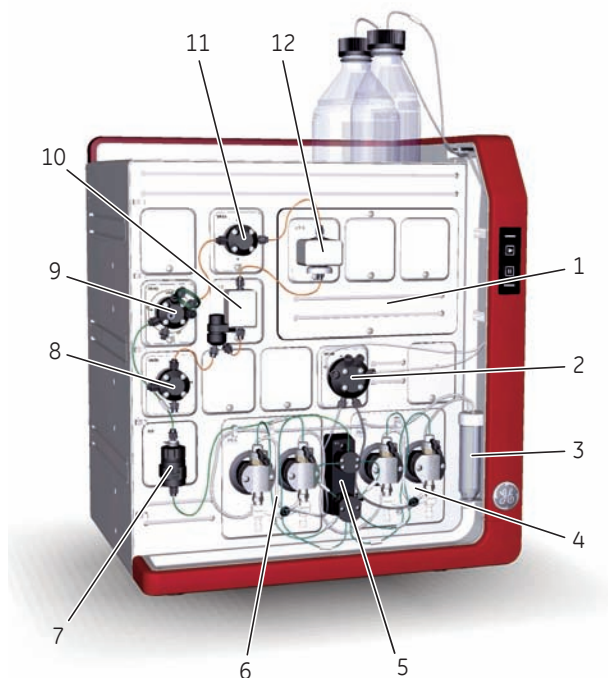
Purpose of this document

This document provides an overview of ÄKTA pure 25, general specifications, certificate of conformance and EC Declaration of conformity. For more information about ÄKTA pure 25, refer to the user documentation.

1.1 Instrument view

Example of a typical configuration of the wet side

A typical configuration of ÄKTA pure 25 is illustrated below.



Part	Function
1	Multi-module panel
2	Inlet valve
3	Pump rinsing liquid tube
4	System pump B
5	Pressure monitor
6	System pump A
7	Mixer
8	Outlet valve
9	Injection valve
10	Conductivity monitor
11	Column valve
12	UV monitor

Available modules

The modular design allows the user to customize the system in multiple ways. ÄKTA pure 25 is always delivered with the core modules, but one or more optional modules may be added to the flow path. The tables below contain information on core modules and optional modules.

Core modules

Core module	Description
System pump P9 A	A high precision pump, which delivers buffer or sample in purification runs.
System pump P9 B	A high precision pump, which delivers buffer in purification runs.
Pressure monitor R9	Reads the system pressure after System pump A and System pump B.

Core module	Description
Mixer M9	Mixes the buffers delivered from the system pumps to a homogenous buffer composition. Three Mixer chambers are available for ÄKTA pure 25, their volumes are: 0.6 ml, 1.4 ml (mounted at delivery) and 5 ml.
Injection valve V9-Inj	Directs sample onto the column.

Optional modules

Module	Description
Inlet valve V9-IA	Inlet valve with seven inlet ports and integrated air sensor.
Inlet valve V9-IB	Inlet valve with seven inlet ports and integrated air sensor.
Inlet valve V9-IAB	Inlet valve with two A inlet ports and two B inlet ports. No integrated air sensor.
Sample inlet valve V9-IS	Inlet valve with eight inlet ports (seven sample inlets and one buffer inlet) and an integrated air sensor. Sample inlet valve V9-IS requires the external module Sample pump S9.
Inlet valve V9-IX	Inlet valve with eight inlet ports. No integrated air sensor.
Mixer valve V9-M	Directs the flow to the Injection valve, bypassing the Mixer, or to the Injection valve via the Mixer.
Loop valve V9-L	Enables the use of up to five loops connected to the instrument.
Column valve V9-C	Connects up to five columns to the instrument, and directs the flow to one column at a time. The Column valve features two integrated pressure sensors. Allows the user to chose flow direction through the column, or to bypass the column.
Column valve V9-Cs	Connects a single column to the instrument. Allows the user to chose flow direction through the column, or to bypass the column.
pH valve V9-pH	Enables the pH electrode to be included in the flow path or bypassed during a run. The pH electrode may be calibrated when installed in the pH valve.

Module	Description
Outlet valve V9-O	Directs the flow to the Fraction collector, Fraction collector 2 (out 10), any of the ten outlet ports, or waste.
Outlet valve V9-Os	Directs the flow to the Fraction collector, Fraction collector 2, the outlet port, or waste.
Versatile valve V9-V	A 4-port, 4-position valve, which can be used when adding extra features to the flow path.
UV monitor U9-L	Measures the UV absorbance at a fixed wavelength of 280 nm.
UV monitor U9-M	Measures the UV/Vis absorbance at up to three wavelengths simultaneously in the range 190-700 nm.
Conductivity monitor C9	Measures the conductivity of buffers and eluted proteins.
External air sensor L9-1.5 or L9-1.2	Prevents air from being introduced into the flow path.
Fraction collector F9-C	Flexible fraction collector that can collect up to 576 fractions. Up to two fraction collectors can be connected at the same time, of which only one (the primary) can be a Fraction collector F9-C.
Fraction collector F9-R	Round fraction collector that can collect up to 350 fractions. Up to two fraction collectors can be connected at the same time.
I/O-box E9	Receives analog or digital signals from, or transfers analog or digital signals to, external equipment that has been incorporated in the system.
Sample pump S9	A high precision pump with an integrated pressure monitor. The sample pump delivers buffer or sample in purification runs.

1.2 Liquid flow path

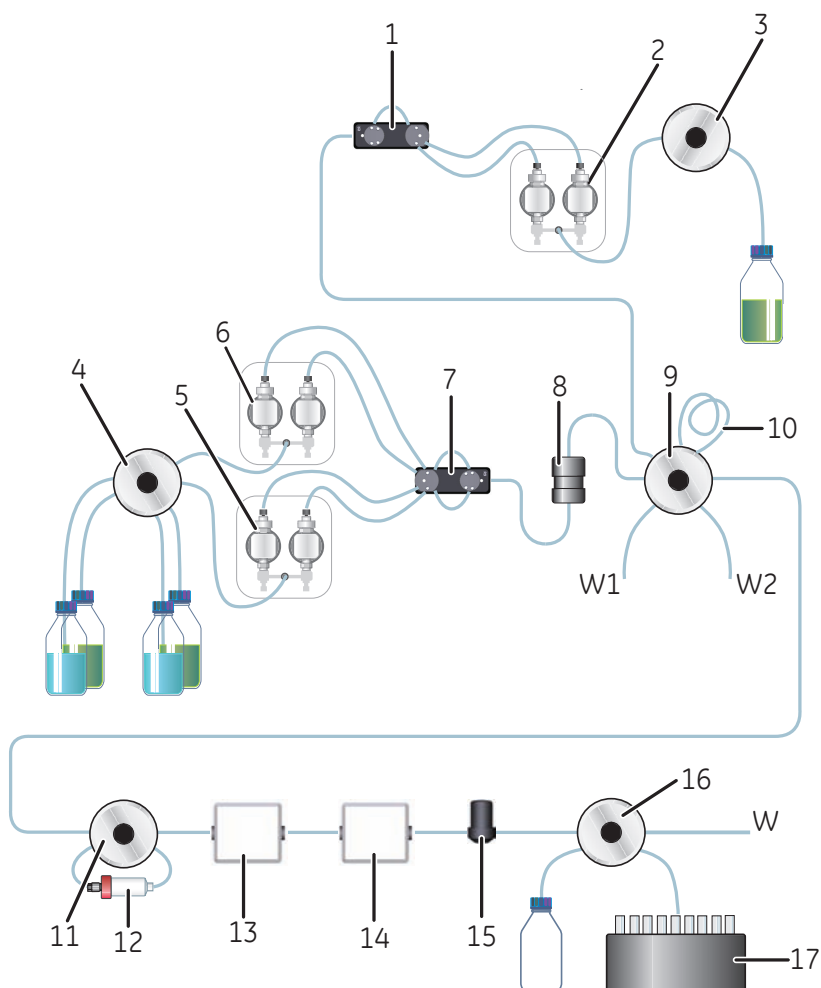
Introduction

ÄKTA pure 25 is a liquid chromatography system with a flexible flow path. This section provides an overview of the liquid flow path, and its possibilities.

Example of a typical liquid flow path

The liquid flow path and system functionality can be customized in multiple ways to fit the user's needs. One or more optional components can be added to the flow path. External equipment can also be connected to the instrument via the I/O-box E9.

The illustration below shows the flow path for a typical system configuration. The individual instrument modules are presented in the table below. The configuration of the system is defined by the user.



Part	Description
1	Pressure monitor

1 Introduction

1.2 Liquid flow path

Part	Description
2	Sample pump
3	Sample inlet valve
4	Inlet valve
5	System pump B
6	System pump A
7	Pressure monitor
8	Mixer
9	Injection valve
10	Sample loop or Superloop™
11	Column valve
12	Column
13	UV monitor
14	Conductivity monitor
15	Flow restrictor
16	Outlet valve
17	Fraction collector
W, W1, W2	Waste

2 General specifications

2.1 System specifications

Parameter	Data
System configuration	Benchtop system, external computer
Control system	UNICORN™ 6.3 or later version
Connection between PC and instrument	Ethernet
Dimensions (W x D x H)	535 x 470 x 630 mm
Weight (excluding computer)	up to 53 kg
Power supply	100-240 VAC, 50-60 Hz
Power consumption	300 VA (typical) 25 VA (power-save)
Enclosure protective class	IP 21
Tubing and connectors	<ul style="list-style-type: none"> • Inlet: FEP tubing, i.d. 1.6 mm, 5/16-24 UNF connections • Pump to injection valve: PEEK tubing, i.d. 0.75 mm, 10-32 UNF connections • After Injection valve: PEEK tubing, i.d. 0.50 mm, 10-32 UNF connections • Outlet and waste: ETFE tubing, i.d. 1.0 mm, Fingertight connector, 1/16" • Optional tubing kits: i.d. 0.25 mm, i.d. 0.75 mm, i.d. 1.0 mm

2.2 Environmental ranges

Parameter	Data
Storage and transport temperature range	-25°C to +60°C
Chemical environment	See <i>ÄKTA pure System Handbook</i> .

2 General specifications

2.3 Operating range

2.3 Operating range

Parameter	Data
Operating temperature range	4°C to 35°C
Relative humidity	20% to 95%, non-condensing

2.4 Module specifications

System pumps

Parameter	Data
Pump type	Piston pump, metering type
Flow rate range	0.001 to 25 ml/min (up to 50 ml/min during column packing)
Pressure range	0 to 20 MPa (2900 psi)
Viscosity range	0.35 to 10 cP (5 cP above 12.5 ml/min)
Flow rate specifications	<ul style="list-style-type: none">• Accuracy: $\pm 1.2\%$• Precision: RSD < 0.5% (Conditions: 0.25 to 25 ml/min, < 3 MPa, 0.8 to 2 cP)

Sample pump

Parameter	Data
Pump type	Piston pump, metering type
Dimensions (W x D x H)	215 x 370 x 210 mm
Weight	11 kg
Flow rate range	0.001 – 50 ml/min
Pressure range	0 to 10 MPa (1450 psi)
Viscosity range	0.7 – 10 cP
Flow rate specifications	<ul style="list-style-type: none"> Accuracy: $\pm 2\%$ Precision: RSD < 0.5% (Conditions: 0.25 – 50 ml/min, < 3 MPa, 0.8 – 3 cP)

Valves

Parameter	Data
Type	Rotary valves
Number of valves	Up to 12
Functions	Standard: Injection Options: Inlet A, Inlet B, Sample inlet, Extra inlet, Mixer by-pass, Loop selection, Column selection, pH, Outlet, Versatile

Inlet options

Parameter	Data
Inlet A	1, 2 or 7 inlets
Inlet B	1, 2 or 7 inlets
Sample inlet	Up to 7 sample inlets and 1 buffer inlet

2 General specifications

2.4 Module specifications

Outlet options

Parameter	Data
Number of outlets	1 or 10

Mixer

Parameter	Data
Mixing principle	Chamber with magnetic stirrer
Mixer volume	0.6, 1.4 or 5 ml

Gradient formation

Parameter	Data
Gradient flow rate range	0.1 to 25 ml/min
Gradient composition accuracy	±0.6% (Conditions 5 to 95% B. 0.5 to 25 ml/min, 0.2 to 2 MPa, 0.8 to 2 cP)

Pressure monitors

Parameter	Data
Number of sensors	Up to 4
Placement of sensors	Standard: The System pressure monitor is located after the System pump Options: <ul style="list-style-type: none">• The Pre-column pressure monitor and the Post-column pressure monitor are integrated in Column valve V9-C.• The Sample pressure monitor is located after the Sample pump.
Range	0 to 20 MPa (2900 psi)

Parameter	Data
Accuracy	± 0.02 MPa or $\pm 2\%$ whichever is greater

Air sensor options

Parameter	Data
Number of sensors	Up to 7
Placement	<ul style="list-style-type: none"> • After the injection valve • Before the system pumps • Before the sample pump
Sensing principle	Ultrasonic

UV monitor options

Parameter	Data
Number of monitors	Up to 2
Wavelength range	U9-L: 280 nm U9-M: 190 to 700 nm in steps of 1 nm, up to 3 wavelengths
Absorbance range	-6 to +6 AU
Linearity	within $\pm 2\%$ at 0 to 2 AU
Operating pressure	0 to 2 MPa (290 psi)
Flow cells: U9-L	Standard: Optical path length 2 mm Cell volume 2 μ l Total volume: 30 μ l Options: Optical path length 5 mm Cell volume 6 μ l Total volume 20 μ l

2 General specifications

2.4 Module specifications

Parameter	Data
Flow cells: U9-M	Standard: Optical path length 2 mm Cell volume 2 μl Total volume: 11 μl Options: Optical path length 10 mm Cell volume 8 μl Total volume 12 μl Optical path length 0.5 mm Cell volume 1 μl Total volume 10 μl

Conductivity monitor options

Parameter	Data
Conductivity reading range	0.01 mS/cm to 999.99 mS/cm
Accuracy	± 0.01 mS/cm or $\pm 2\%$, whichever is greater, (within 0.3 to 300 mS/cm)
Operating pressure	0 to 5 MPa (725 psi)
Flow cell volume	22 μl
Temperature monitor range	0°C to 99°C
Temperature monitor accuracy	$\pm 1.5^\circ\text{C}$ within 4°C to 45°C

pH monitor option

Parameter	Data
pH reading range	0 to 14
Accuracy	± 0.1 pH unit within pH 2 to 12, temperature within $\pm 3^\circ\text{C}$ from calibration temperature
Operating pressure	0 to 0.5 MPa (72 psi)
Flow cell volume	76 μl

Outlet valve fractionation option

Parameter	Data
Number of outlets	10
Fraction volumes	0.01 to 20 000 ml
Delay volume (UV – outlet valve)	125 µl 66 µl with optional tubing kit (i.d. 0.25 mm)

Fraction collector options

Parameter	Data
Number of fraction collectors	Up to two. The second fraction collector must be an F9-R.
Number of fractions	F9-C: Up to 576 F9-R: Up to 350
Vessel types	F9-C: <ul style="list-style-type: none"> • Deep well plates, 96, 48 or 24 wells • Tubes 3, 8, 15, 50 ml • Bottle, 250 ml F9-R: 3, 8, 15 or 50 ml tubes
Fraction volumes	F9-C: 0.1 to 250 ml F9-R: 0.1 to 50 ml
Spillage-free mode	F9-C: Automatic, Drop sync or Accumulator F9-R: Drop sync
Flammable liquids	F9-C: no F9-R: yes
Delay volume (UV – dispenser head)	F9-R: 205 µl, 86 µl with optional tubing kit (i.d. 0.25 mm) F9-C: 435 µl, 214 µl with optional tubing kit (i.d. 0.25 mm)

2 General specifications

2.4 Module specifications

Parameter	Data
Dimensions (W x D x H)	<ul style="list-style-type: none">• F9-C: 390 x 585 x 320 mm• F9-R: 320 x 400 x 250 mm
Weight	<ul style="list-style-type: none">• F9-C: 21 kg• F9-R: 5 kg

I/O box

Parameter	Data
Number of ports	2 analog in, 2 analog out 4 digital in, 4 digital out
Analog range	In +/- 2 V Out +/- 1 V

3 Certificate of conformance

Material definitions

The tables below list the materials that come into contact with process fluids in the ÄKTA pure 25 system.

Primary flow path: Material

Material	Abbreviation
Ethylene ChloroTriFluoroEthylene	ECTFE
Ethylene TetraFluoroEthylene	ETFE
Fluorinated Ethylene Propylene	FEP
Fluorinated Propylene Monomer	FPM/FKM
Fully Fluorinated Propylene Monomer	FFPM/FFKM
PolyChloroTriFluoroEthylene	PCTFE
PolyEtherEtherKetone	PEEK
PolyPropylene	PP
PolyTetraFluoroEthylene	PTFE
PolyVinylidene DiFluoride	PVDF
UltraHighMolecularWeightPolyEthylene	UHMWPE
Aluminum oxide	
Elgiloy™	
Hastelloy™ C-276	
Quartz glass	
Ruby	
Sapphire	
Titanium grade 2	
Titanium grade 5	

Pump rinse system: Material

Material	Abbreviation
EthylenePropyleneDiene M-class rubber	EPDM
PolyEtherEtherKetone	PEEK
PolyPropylene	PP
PolyPhenylene Sulfide	PPS
PolyVinylidene DiFluoride	PVDF
Silicone	

Primary flow path: Parts

Part	Code No.	Component	Material
P9 A	-	28942298 Pump P9 Cpl (primary flow path)	
P9 B		56116124 Piston	Sapphire
		28945400 Y-Connector	ECTFE
		56119415 Membrane	EPDM
		28939480 Pump Head P9	
		20939097 Pump Head	Titanium
		28943626 Purge Valve	PEEK
		56118261 Seal	UHMWPE/Elgiloy
		Check valves in/out	
		28963058 Outlet Check valve	
		28962655 Valve housing Out	PEEK
		28962657 Ball retainer	PEEK
		28962659 Washer	PEEK
		28950137 Ball and Seat	Sapphire/Ruby
		28963062 Inlet Check Valve	
		28962653 Valve housing In	PEEK
		28962657 Ball Retainer	PEEK
		28950137 Ball and Seat	Sapphire/Ruby
		56305879 Purge Valve	PEEK

Part	Code No.	Component	Material
P9-S	-	28945183 Pump P9 Cpl (primary flow path) 28945183 Piston 56117787 Y-Connector 28978573 Membrane 28952471 Pump Head P9-S 56305641 Pump Head 28943626 Purge Valve 28962521 Seal Check valves in/out 28963058 Outlet Check valve 28962655 Valve housing Out 28962657 Ball retainer 28962659 Washer 28950137 Ball and Seat 28963062 Inlet Check Valve 28962653 Valve housing In 28962657 Ball Retainer 28950137 Ball and Seat 56305879 Purge Valve	Aluminium Oxide ECTFE EPDM Titanium PEEK UHMWPE/Elgiloy PEEK PEEK PEEK Sapphire/Ruby PEEK PEEK Sapphire/Ruby PEEK
R9 (System pumps)	-	28944995 Pressure monitor R9 (System) with pump restrictor 28951451 Pressure monitor R9 (System) 28947686 Pressure connector 28933525 Pressure sensor 28945164 Restrictor Housing R9 (System) Assembly 28977560 Compression Spring 28966920 Membrane 28989942 Plunger 28946870 Restrictor Stopper 28946577 Pump Restriction Housing	PEEK Titanium Hastelloy C-276 FFPM/FFKM PEEK PEEK PEEK
R9 (Sample pump)	-	28944998 Pressure monitor R9 (Sample) with pump restrictor 28951453 Pressure monitor R9 (Sample) 28947688 Pressure connector 28933525 Pressure sensor 28945174 Restrictor Housing R9 (Sample) Assembly 28977560 Compression Spring 28966920 Membrane 28989942 Plunger 28946870 Restrictor Stopper 28947779 Pump Restriction Housing	PEEK Titanium Hastelloy C-276 FFPM/FFKM PEEK PEEK PEEK

3 Certificate of conformance

Part	Code No.	Component	Material
M9-0.6	28956186	28922334 Mixer chamber 0.6 ml 56302238 Filter 10PP (1 µm) 56302237 Support net 28945536 Mixer top 28963112 Stirring magnet 9.1 mm 28916429 Mixer chamber 0.6 ml 28945544 O-ring 13.1 x 1.6	PP PP PEEK PTFE PEEK FPM/FKM
M9-1.4	28956225	28924642 Mixer chamber 1.4 ml 56302238 Filter 10PP (1 µm) 56302237 Support net 28945536 Mixer top 28924648 Stirring magnet 12 mm 28924646 Mixer chamber 1.4 ml 28945544 O-ring 13.1 x 1.6	PP PP PEEK PTFE PEEK FPM/FKM
M9-5	28956246	28924700 Mixer chamber 5 ml 56302238 FILTER 10PP (1 µm) 56302237 Support net 28945536 Mixer top 56105749 Stirring magnet 12 mm 28924702 Mixer chamber 5 ml 28945544 O-ring 13.1 x 1.6	PP PP PEEK PTFE PEEK FPM/FKM
	29011326	28948433 O-ring 13.1 x 1.6 mm	FFKM
V9-Inj	-	28920910 Injection valve V9-Inj 28943034 Valve stator injection 28943040 Valve rotor injection	PEEK PEEK + PTFE
FR	18112135	56304545 Flow restrictor FR-902 56302557 Housing 56303929 Diaphragm	PEEK FFPM/FFKM

Part	Code No.	Component	Material
V9-IS	29027746	Sample Inlet Valve Kit (V9-IS, 7 ports) 28920915 Sample Inlet Valve V9-IS 28934791 Valve stator inlet 1.5 asm. 28934276 Valve stator inlet 1.5 28934290 Valve rotor inlet 28934287 Valve inlet plug 29032923 Tubing S1 29032924 Tubing S2 29032925 Tubing S3 29032926 Tubing S4 29032927 Tubing S5 29032928 Tubing S6 29032929 Tubing S7 29032921 Tubing InS 56119885 Ferrule	PEEK PEEK PEEK PEEK FEP FEP FEP FEP FEP FEP FEP FEP
V9-V	29011353	28992313 Versatile valve V9-V 28987417 Stator versatile valve 28987420 Valve rotor versatile	PEEK PEEK + PTFE
V9-M 3-1 3-2 3-2	29011354	Mixer valve kit V9-M 28987417 Stator versatile valve 28987420 Valve rotor versatile 29010289 Tubing 3-1 29010290 Tubing 3-2 29010292 Tubing 3-3	PEEK PEEK + PTFE PEEK PEEK PEEK
V9-Cs	29011355	Column valve V9-Cs 28987417 Stator versatile valve 28987420 Valve rotor versatile	PEEK PEEK+PTFE
V9-Os Out	29011356	Outlet Valve Kit (V9-Os, 1-outlet) 28987417 Stator versatile valve 29021988 Valve rotor outlet 29010372 Tubing Out	PEEK PEEK ETFE

3 Certificate of conformance

Part	Code No.	Component	Material
V9-IAB	29011357	Inlet valve kit (V9-IAB)	
		28995489 Valve Stator Inlet	PEEK
		28995500 Valve Rotor Inlet	PEEK
InA		28996724 Tubing InA	FEP
InB		28996729 Tubing InB	FEP
A1		29009606 Tubing A1	FEP
A2		29009607 Tubing A2	FEP
B1		29009608 Tubing B1	FEP
B2		29009609 Tubing B2	FEP
		56119885 Ferrule	FEP
V9-L	29011358	Loop valve kit (V9-L)	
		28987182 Stator Loop Valve	PEEK
		28924597 Valve rotor column	PEEK + PTFE
L1		29011637 Tubing L1	PEEK
L2		29011638 Tubing L2	PEEK
V9-O	29012261	Outlet Valve Kit (V9-O, 10 outlets)	
		28920867 Valve stator out	PEEK
		28933172 Valve rotor out	PEEK + PTFE
Out1		29010374 Tubing Out1	ETFE
Out2		29010375 Tubing Out2	ETFE
Out3		29010376 Tubing Out3	ETFE
Out4		29010377 Tubing Out4	ETFE
Out5		29010378 Tubing Out5	ETFE
Out6		29010379 Tubing Out6	ETFE
Out7		29010380 Tubing Out7	ETFE
Out8		29010381 Tubing Out8	ETFE
Out9		29010382 Tubing Out9	ETFE
Out10		29010383 Tubing Out10	ETFE
V9-IA	29012263	Inlet valve kit V9-IA	
		28934791 Valve stator inlet 1.5 assembly	PEEK
		28934287 Valve inlet plug	PEEK
		28934276 Valve stator inlet 1.5	PEEK
		28934290 Valve rotor inlet 1.5	PEEK
A1		29009606 Tubing A1	FEP
A2		29009607 Tubing A2	FEP
A3		29011613 Tubing A3	FEP
A4		29011614 Tubing A4	FEP
A5		29011615 Tubing A5	FEP
A6		29011616 Tubing A6	FEP
A7		29011617 Tubing A7	FEP
InA		28996724 Tubing InA	FEP
		56119885 Ferrule	FEP

Part	Code No.	Component	Material
V9-IB	29012370	Inlet valve kit V9-IB 28934791 Valve stator inlet 1.5 assembly 28934287 Valve inlet plug 28934276 Valve stator inlet 1.5 28934290 Valve rotor inlet 1.5	PEEK PEEK PEEK
B1		29009608 Tubing B1	FEP
B2		29009609 Tubing B2	FEP
B3		29011618 Tubing B3	FEP
B4		29011619 Tubing B4	FEP
B5		29011620 Tubing B5	FEP
B6		29011621 Tubing B6	FEP
B7		29011622 Tubing B7	FEP
InB		28996729 Tubing InB 56119885 Ferrule	FEP FEP
V9-pH	29011359	pH valve kit V9-pH 28939643 Valve stator pH 28939641 Valve rotor pH 56322802 Dummy pH 56119556 pH Electrode dummy 56119557 O-ring 5.3 x 2.4 29010303 Tubing 8pH 29010304 Tubing 9pH 29010305 Tubing 1R 29010306 Tubing 2R 29010426 Tubing W3	PEEK PEEK+PTFE PTFE FFPM/FFKM PEEK PEEK PEEK PEEK PEEK ETFE
V9-C	29011367	Column valve kit V9-C 28924597 Valve rotor column 28920925 Valve stator column assembly 28931925 Valve stator column 2.0 28920897 Valve column plug 56119406 Tubing i.d. 0.5 mm, o.d. 1.58 mm 56119888 Tubing i.d. 0.75 mm, o.d. 1.58 mm	PEEK/PTFE PEEK PEEK PEEK PEEK
F9-C	29027743	Fraction collector F9-C 29015434 Nozzle 29017557 Capillary connection 56119406 Tubing i.d. 0.5 mm, o.d. 1.58 mm 28902730 Piston 28921813 Glass tube	PEEK PEEK PEEK UHMWPE/Elgiloy Borosilicate
F9-R	29011362	Fraction collector F9-R 56119406 Tubing i.d. 0.5 mm, o.d. 1.58 mm	PEEK

3 Certificate of conformance

Part	Code No.	Component	Material
S9	29027745	<p>Sample pump S9</p> <p>28945183 Pump P9 Cpl (primary flow path)</p> <p>28945183 Piston</p> <p>56117787 Y-Connector</p> <p>28978573 Membrane</p> <p>28952471 Pump Head P9-S</p> <p>56305641 Pump Head</p> <p>28943626 Purge Valve</p> <p>28962521 Seal</p> <p>Check valves in/out</p> <p>28963058 Outlet Check valve</p> <p>28962655 Valve housing Out</p> <p>28962657 Ball retainer</p> <p>28962659 Washer</p> <p>28950137 Ball and Seat</p> <p>28963062 Inlet Check Valve</p> <p>28962653 Valve housing In</p> <p>28962657 Ball Retainer</p> <p>28950137 Ball and Seat</p> <p>56305879 Purge Valve</p>	<p>Aluminium Oxide</p> <p>ECTFE</p> <p>EPDM</p> <p>Titanium</p> <p>PEEK</p> <p>UHMWPE/Elgiloy</p> <p>PEEK</p> <p>PEEK</p> <p>PEEK</p> <p>Sapphire/Ruby</p> <p>PEEK</p> <p>PEEK</p> <p>Sapphire/Ruby</p> <p>PEEK</p>
C9n	29011363	<p>Conductivity monitor C9n</p> <p>28921084 Thread housing</p> <p>28902003 Electrode</p> <p>28902005 Insulator</p>	<p>PEEK</p> <p>Titanium</p> <p>PCTFE</p>
U9-L	29011325	<p>56305582 UV Cell 2 mm for U9-L</p> <p>56305584 Cuvette</p> <p>56305586 Fix bushing</p> <p>56068200 Cuvette ANS. 2 U</p> <p>56068800 Seal assembly</p> <p>56068900 Seal</p>	<p>Titanium</p> <p>Titanium</p> <p>Quartz glass</p> <p>PTFE</p>
U9-2	28979380	<p>28975936 UV flow cell 2.0</p> <p>28975932 Cell In 1000 assembly</p> <p>28975442 Cell In 1000</p> <p>28975447 Cone 1000</p> <p>28977556 UV Fiber 1000</p> <p>28975445 Cell Shims 2.0 1000</p> <p>28975934 Cell Out 2.0 assembly</p> <p>56001792 Cone 400</p> <p>28975444 Cell Out 2.0</p>	<p>PEEK</p> <p>PEEK</p> <p>Quartz glass</p> <p>PEEK</p> <p>PEEK</p> <p>PEEK</p>

Part	Code No.	Component	Material
	29011327	Tubing kit i.d. 0.5 mm, standard	
1A1		28924371 Tubing 1A1	PEEK
1A2		28924374 Tubing 1A2	PEEK
1B1		28924375 Tubing 1B1	PEEK
1B2		28924376 Tubing 1B2	PEEK
2A		28955484 Tubing 2A	PEEK
2B		28955485 Tubing 2B	PEEK
3		28996745 Tubing 3	PEEK
4		28996751 Tubing 4	PEEK
5		28996768 Tubing 5	PEEK
6		28996769 Tubing 6	PEEK
7		28996764 Tubing 7	PEEK
8		28996771 Tubing 8	PEEK
9		28996772 Tubing 9	PEEK
W1		28996777 Tubing W1	ETFE
W2		29010370 Tubing W2	ETFE
W		28996779 Tubing W	ETFE
	29011328	Tubing kit i.d. 0.25 mm 0.25 mm	
5		29010431 Tubing 5	PEEK
6		29010432 Tubing 6	PEEK
7		29010433 Tubing 7	PEEK
8pH		29010434 Tubing 8pH	PEEK
9pH		29010435 Tubing 9pH	PEEK
8		29010436 Tubing 8	PEEK
1R		29010437 Tubing 1R	PEEK
2R		29010438 Tubing 2R	PEEK
9		29010439 Tubing 9	PEEK
		56119945 Tubing i.d. 0.25 mm, o.d.1.58 mm	PEEK
	29011329	Tubing kit i.d. 0.75 mm	
5		29010293 Tubing 5	PEEK
6		29010294 Tubing 6	PEEK
7		29010295 Tubing 7	PEEK
8pH		29010296 Tubing 8pH	PEEK
9pH		29010297 Tubing 9pH	PEEK
8		29010298 Tubing 8	PEEK
1R		29010299 Tubing 1R	PEEK
2R		29010300 Tubing 2R	PEEK
9		29010301 Tubing 9	PEEK
		56119888 Tubing i.d. 0.75 mm, o.d.1.58 mm	PEEK

3 Certificate of conformance

Part	Code No.	Component	Material
	29032426	Tubing kit i.d. 1.00 mm	
5		29034580 Tubing 5	PEEK
6		29034614 Tubing 6	PEEK
7		29034622 Tubing 7	PEEK
8		29034624 Tubing 8	PEEK
L1		29034615 Tubing L1	PEEK
L2		29034617 Tubing L2	PEEK
8pH		29034627 Tubing 8pH	PEEK
9pH		29034621 9pH	PEEK
1R		29034628 1R	PEEK
2R		29034629 2R	PEEK
9		29034625 Tubing 9	PEEK
		29034630 Tubing i.d. 0.25 mm, o.d.1.58 mm	PEEK
	29011330	Tubing kit for inlet valve V9-IAB	
InA		28996724 Tubing InA	FEP
InB		28996729 Tubing InB	FEP
A1		29009606 Tubing A1	FEP
A2		29009607 Tubing A2	FEP
B1		29009608 Tubing B1	FEP
B2		29009609 Tubing B2	FEP
		56119885 Ferrule	FEP
	29011331	Tubing kit for pH valve V9-pH, standard	
8pH		29010303 Tubing 8pH	PEEK
9pH		29010304 Tubing 9pH	PEEK
1R		29010305 Tubing 1R	PEEK
2R		29010306 Tubing 2R	PEEK
W3		29010426 Tubing W3	ETFE
	29011332	Tubing kit for inlet valve V9-IA (7 ports)	
A1		29009606 Tubing A1	FEP
A2		29009607 Tubing A2	FEP
A3		29011613 Tubing A3	FEP
A4		29011614 Tubing A4	FEP
A5		29011615 Tubing A5	FEP
A6		29011616 Tubing A6	FEP
A7		29011617 Tubing A7	FEP
InA		28996724 Tubing InA	FEP
		56119885 Ferrule	FEP

Part	Code No.	Component	Material
	29011333	Tubing kit for inlet valve V9-IB (7 ports)	
B1		29009608 Tubing B1	FEP
B2		29009609 Tubing B2	FEP
B3		29011618 Tubing B3	FEP
B4		29011619 Tubing B4	FEP
B5		29011620 Tubing B5	FEP
B6		29011621 Tubing B6	FEP
B7		29011622 Tubing B7	FEP
InB		28996729 Tubing InB	FEP
		56119885 Ferrule	FEP
	29035331	Tubing kit for sample inlet valve V9-IS (7 ports)	
S1		29032923 Tubing S1	FEP
S2		29032924 Tubing S2	FEP
S3		29032925 Tubing S3	FEP
S4		29032926 Tubing S4	FEP
S5		29032927 Tubing S5	FEP
S6		29032928 Tubing S6	FEP
S7		29032929 Tubing S7	FEP
InS		29032921 Tubing InS	FEP
		56119885 Ferrule	FEP
	29011334	Tubing kit for outlet fractionation (10 outlets)	
Out1		29010374 Tubing Out1	ETFE
Out2		29010375 Tubing Out2	ETFE
Out3		29010376 Tubing Out3	ETFE
Out4		29010377 Tubing Out4	ETFE
Out5		29010378 Tubing Out5	ETFE
Out6		29010379 Tubing Out6	ETFE
Out7		29010380 Tubing Out7	ETFE
Out8		29010381 Tubing Out8	ETFE
Out9		29010382 Tubing Out9	ETFE
Out10		29010383 Tubing Out10	ETFE
	-	56118577 Fingertight HPLC	PEEK

Pump rinse system: Parts

Part	Code No.	Component	Material
	29011348	System Pump Rinse Tubing Kit 59129200 Tube i.d. 2.1 mm, o.d. 4.1 mm	Silicone
	28997722	Accessory Kit, ÄKTA pure 25 28959057 BD Falcon™ 50 ml tube	PP
P9 A P9 B	28953655	28942298 Pump P9 Cpl (rinse system) 28922118 Drainage check valve out (white) 28945852 Drainage check valve holder (black) 28940285 Pump Wash Housing 28940287 Pump Drainage Plate 56119415 Membrane	PVDF/PEEK/Alu- minum oxide PVDF PPS PPS EPDM
P9-S	18111203	28945183 Pump P9-S Cpl (Rinse system) 28922118 Drainage check valve out (white) 28945852 Drainage check valve holder (black) Pump Wash House Pump Drainage Plate Fitting mail luer to M6 Membrane	PVDF/PEEK/Alu- minum oxide PVDF PPS PPS PEEK EPDM

Note: *System Pump Rinse Tubing Kit and Accessory Kit can also be used with pump P9-S on Sample pump S9.*

**Certificate of conformance:
Signature**


The Quality System of GE Healthcare is certified according to ISO9001, and is thereby in control of the product realization process. GE Healthcare has a controlled process for quality assurance in selection, assessment and evaluation of supplier where strict adherence to specifications for all material is the basis.

A handwritten signature in blue ink that reads "Thomas Wallin". The signature is written in a cursive style with a large initial 'T'.

Thomas Wallin Valid from 14 November 2012
QA Site Leader
GE Healthcare

4 EC Declaration of Conformity

GE Healthcare



EC Declaration of Conformity

We: GE Healthcare Bio-Sciences AB

Declare under our sole responsibility that the product:

Type of equipment: **Chromatographic System**
Brand name: **ÄKTA™ pure with options**
Code/Article no: **29018224, 29018225, 29018226, 29018227, 29018228**

Is in conformity with the provision of the;

2006/42/EC Machinery Directive (MD)

And in conformity with the provision of the following EC Directives;

2004/108/EC Electromagnetic Compatibility Directive (EMC)
1999/5/EC Radio and Telecommunications Terminal Equipment Directive (R&TTE)

And that the standards referenced have been applied:

EN 12100:2010 Safety of machinery. General principles for design. Risk assessment and risk reduction.

EN 61010-1:2010 Safety requirements for electrical equipment for measurement, control, and laboratory use.


EN 61326-1:2006 Electrical equipment for measurement, control and laboratory use. EMC requirements.

EN 301 489-3 V1.4.1 Specific conditions for Short-Range Devices (SRD) operating on freq. between 9 kHz and 40 GHz

EN 300 330-2 V1.3.1 Radio equipment in the freq. range 9 kHz to 25 MHz and inductive loop sys. in the freq. range 9 kHz to 30 MHz

This product is CE marked in 2012.

Uppsala, 21 June 2012



Ewa Bylund
Director Regulatory Affairs

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