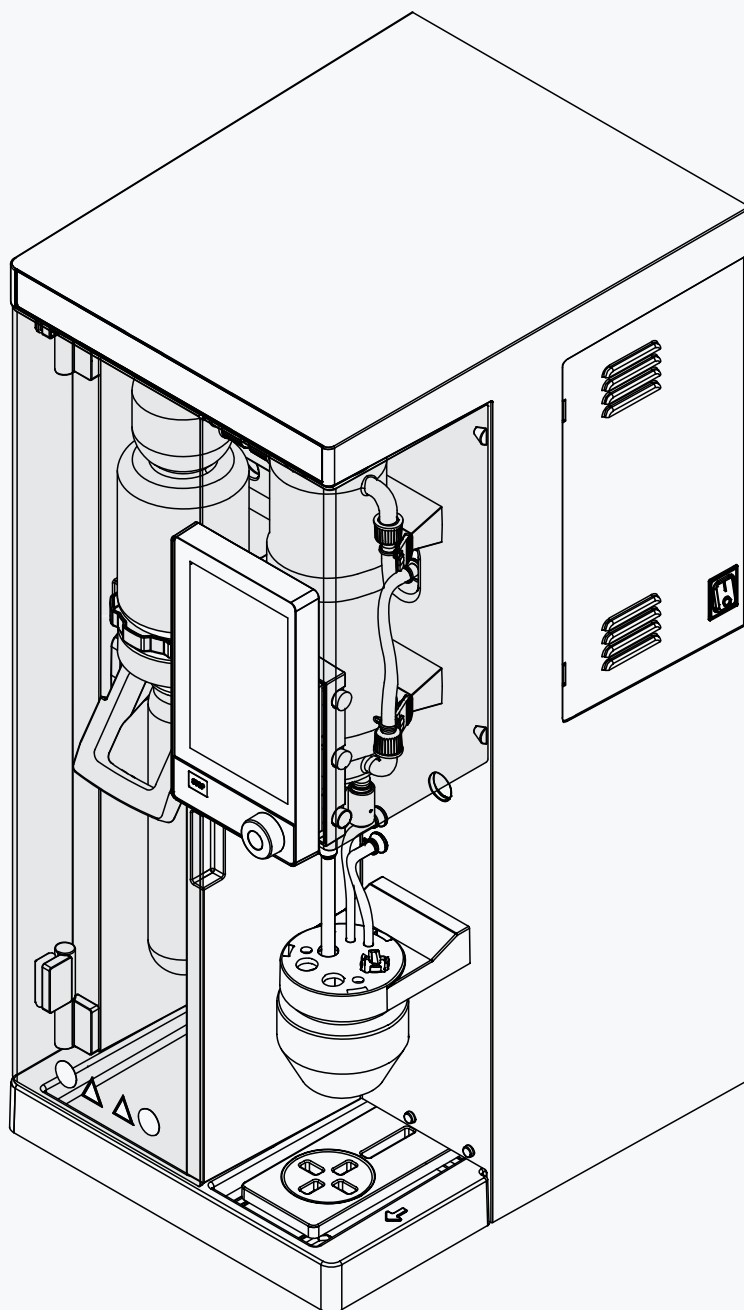




Technical data sheet

# K-365 Kjeld Line



## Kjel Line

Due to its modular concept the Kjel systems can be adapted to various needs. The different instrument configurations allow to meet different application requirements.

### A) Three instrument performance levels

- EasyKjel: Entry level unit
- BasicKjel: Intermediate unit
- MultiKjel: Advanced unit

### B) Splash protectors

Devarda splash protector (glass only):

- designed to protect the condenser from splashes caused by the Devarda alloy reaction and the steam distillation

Kjeldahl splash protector:

- designed to protect the condenser from splashes caused by the steam distillation

Advantage of the plastic splash protector:

- increased durability to sodium hydroxide and extended lifetime

Advantage of the glass splash protector:

- visual monitoring of the distillation process makes method development more convenient

### C) Application versatility

All Kjel systems are designed to distill analytes of the Kjeldahl method:

- Protein
- Total Kjeldahl Nitrogen (TKN)  
Non-Protein Nitrogen (NPN)  
Total Volatile Basic Nitrogen (TVBN)  
Ammonia  
Nitrate/nitrite  
Casein

### D) External titrator

Various titrators can be connected to the MultiKjel systems:

- Metrohm (Eco Titrator and TitrinoPlus 848/877)
- SI Analytics (TitroLine 5000, TitroLine 7000 and Titronic 300)
- Mettler Toledo (G10S, G20S, T5, T7 and T9)

All other titrator models can be used via a semi automated integration.

## Scope of delivery

All configurations are supplied ready to use.

|                                     | EasyKjel | BasicKjel | Multikjel |
|-------------------------------------|----------|-----------|-----------|
| Instrument                          | 1        | 1         | 1         |
| Splash protector                    | 1*       | 1*        | 1*        |
| Titration set                       | -        | -         | *         |
| External titrator                   | -        | -         | *         |
| Recirculating chiller               | *        | *         | *         |
| Power cable                         | 1        | 1         | 1         |
| Sample tube (300 mL)                | 1        | 1         | 1         |
| Tanks (10 L)                        | 2        | 1         | 2         |
| Cap Set, 10 L tank                  | 2        | 1         | 2         |
| Tank (20 L)                         | -        | 1         | 1         |
| Cap Set, 20 L tank                  | -        | 1         | 1         |
| Suction tube tank                   | 1        | 3         | 4         |
| Tank labels                         | 1        | 2         | 3         |
| Hose for chemical feed (2 m)        | 2        | 3         | 4         |
| Hose for cooling water feed (1.5 m) | 1        | 1         | 1         |
| Hose for cooling water drain (3 m)  | 1        | 1         | 1         |
| Hose for peristaltic pump (2.5 m)   | -        | *         | 2         |
| Pair of glass tongs                 | 1        | 1         | 1         |
| Hose for instrument drain           | 1        | *         | -         |
| Hose clips reagent pumps            | 2        | 3         | 4         |
| Hose clip peristaltic pumps         | -        | *         | 2         |

\* According to order code

## Order code EasyKjel

Choose the configuration according to your needs:

1 1 K 3 6 5 1 1 0

Splash Protector

- 1 Glass with Dosing Inlet
- 2 Plastic with Dosing Inlet
- 3 Devarda

Recirculation Chiller

- 0 None
- 1 F-314 230V

## Order code BasicKjel

Choose the configuration according to your needs:

1 1 K 3 6 5 2 1

Configuration

- 0 Base Unit
- 1 Base Unit with Sample Tube Aspiration
- 2 Base Unit with Sample Tube Aspiration and I-300 Pro

Splash Protector

- 1 Glass with Dosing Inlet
- 2 Plastic with Dosing Inlet
- 3 Devarda

Recirculation Chiller

- 0 None
- 1 F-314 230V

## Order code MultiKjel

Choose the configuration according to your needs:

1 1 K 3 6 5 3 1

### Configuration

- 0 Base Unit
- 1 Base Unit with Titration Setup and Receiver Waste Aspiration
- 2 Base Unit with Titration Setup, Receiver Waste Aspiration and Metrohm Eco Titrator (potentiometric)
- 3 Base Unit with Titration Setup, Receiver Waste Aspiration and Metrohm Eco Titrator (colorimetric), only with glass splash protector

### Splash Protector

- 1 Glass with Dosing Inlet
- 2 Plastic with Dosing Inlet
- 3 Devarda

### Recirculation Chiller

- 0 None
- 1 F-314 230V

## Technical data

### K-365 Kjel Line

|                                                                    | EasyKjel             | BasicKjel            | MultiKjel            |
|--------------------------------------------------------------------|----------------------|----------------------|----------------------|
| Dimensions (W x D x H)                                             | 320 x 400 x 730 mm   | 320 x 400 x 730 mm   | 320 x 400 x 730 mm   |
| Weight                                                             | 23 kg                | 23 kg                | 23 kg                |
| Connection voltage                                                 | 220 - 240 ± 10 % VAC | 220 - 240 ± 10 % VAC | 220 - 240 ± 10 % VAC |
| Power consumption                                                  | 2100 W               | 2100 W               | 2100 W               |
| Frequency                                                          | 50 / 60 Hz           | 50 / 60 Hz           | 50 / 60 Hz           |
| IP Code                                                            | IP20                 | IP20                 | IP20                 |
| Pollution degree                                                   | 2                    | 2                    | 2                    |
| Overvoltage category                                               | II                   | II                   | II                   |
| Tap water pressure                                                 | 1 - 10 bar           | 1 - 10 bar           | 1 - 10 bar           |
| Tap water condition                                                | 1 - 25°C             | 1 - 25°C             | 1 - 25°C             |
| (If the temperature is more than 25°C use a recirculating chiller) |                      |                      |                      |
| Tap water consumption                                              | ~ 1.2 L/min          | ~ 1.2 L/min          | ~ 1.2 L/min          |
| Approvals                                                          | CE, CSA              | CE, CSA              | CE, CSA              |

## Analysis specifications

|                                                                                                   | EasyKjel                                                                                                                                      | Basickjel                                                         | MultiKjel                                                         |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|
| Measuring range N                                                                                 | 0.02 – 220 mg                                                                                                                                 | 0.02 – 220 mg                                                     | 0.02 – 220 mg                                                     |
| Analytes                                                                                          | Protein, Total Kjeldahl Nitrogen (TKN), Non-Protein Nitrogen (NPN), Total Volatile Basic Nitrogen (TVBN), Ammonia, Nitrate/Nitrite and Casein |                                                                   |                                                                   |
| Analysis time for 30 mg N<br>(With Metrohm Eco Titrator without titrator preparation)             | -                                                                                                                                             | -                                                                 | 3.5 min                                                           |
| Analysis time for 200 mg N<br>(With Metrohm Eco Titrator without titrator preparation)            | -                                                                                                                                             | -                                                                 | 5 min                                                             |
| LOD (Limit of Detection) of N                                                                     | -                                                                                                                                             | -                                                                 | 0.007 mg                                                          |
| LOQ (Limit of Quantification) of N                                                                | -                                                                                                                                             | -                                                                 | 0.02 mg                                                           |
| Recovery<br>(From 1 - 220 mg N)                                                                   | N: >98% with digestion process<br>N: >99.5% (direct distillation)                                                                             | N: >98% with digestion process<br>N: >99.5% (direct distillation) | N: >98% with digestion process<br>N: >99.5% (direct distillation) |
| Measurement reproducibility<br>(Direct distillation of 1 mg N absolute and 300 sec. distillation) | < 0.8 %                                                                                                                                       | < 0.8 %                                                           | < 0.8 %                                                           |

## Instrument specifications

|                                                                                                                                         | EasyKjel      | BasicKjel     | MultiKjel     |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|---------------|
| Distillation capacity (100%)                                                                                                            | ~ 40 mL/min   | ~ 40 mL/min   | ~ 40 mL/min   |
| Distillation capacity (10%)                                                                                                             | ~ 12.5 mL/min | ~ 12.5 mL/min | ~ 12.5 mL/min |
| Adjustable distillation power                                                                                                           | 10 - 100%     | 10 - 100%     | 10 - 100%     |
| MaxAccuracy Mode<br>(Compensation of power grid fluctuations by voltage stabilizer)                                                     | Yes           | Yes           | Yes           |
| Distillate reproducibility (RSD)<br>(At 300 seconds distillation time)                                                                  | <1%           | <1%           | <1%           |
| AutoDist Mode<br>(Automatic detection of the condensation start)                                                                        | No            | Yes           | Yes           |
| NaOH pump                                                                                                                               | Yes           | Yes           | Yes           |
| H <sub>2</sub> O pump                                                                                                                   | No            | Yes           | Yes           |
| Acid pump                                                                                                                               | No            | No            | No            |
| Boric acid pump                                                                                                                         | No            | No            | Yes           |
| Automatic sample disposal                                                                                                               | No            | Optional      | Yes           |
| Automatic receiver disposal                                                                                                             | No            | No            | Optional      |
| Safety sensors (safety door sensor, cooling water temperature sensor, sample tube in-place sensor, steam generator overpressure sensor) | Yes           | Yes           | Yes           |
| Titration vessel                                                                                                                        | No            | No            | Optional      |
| Titration connection                                                                                                                    | No            | No            | Optional      |
| IQ/OQ                                                                                                                                   | No            | Yes           | Yes           |

## Interface specifications

|                                          | Interface<br>EasyKjel, BasicKjel               | Interface pro<br>BasicKjel (option), Multi-Kjel |
|------------------------------------------|------------------------------------------------|-------------------------------------------------|
| Display                                  | LCD color, 4.3 in                              | LCD color, 7.0 in                               |
| Control elements                         | Buttons / control knob                         | Touch-screen / control knob                     |
| Max. number of methods                   | 8                                              | 96                                              |
| Max. number of determinations            | 36                                             | 512                                             |
| Max. number of determinations per series | 16                                             | 32                                              |
| Max. number of templates                 | 4                                              | 16                                              |
| Max. number of users                     | 4                                              | 32                                              |
| Max. number of determination results     | 40                                             | 256                                             |
| Language                                 | en, de, fr, it, es, pt, ja, zh, ru, pl, ko, id | en, de, fr, it, es, pt, ja, zh, ru, pl, ko, id  |

## Connections

|                                                       | EasyKjel | Basickjel | Multikjel |
|-------------------------------------------------------|----------|-----------|-----------|
| LAN port                                              | -        | -         | 1         |
| BUCHI standard communication ports (COM)              | 2        | 2         | 3         |
| Stirrer port                                          | -        | -         | 1         |
| Level detection sensor port                           | 1        | 1         | 1         |
| H <sub>2</sub> O tank level sensor port               | 1        | 1         | 1         |
| H <sub>3</sub> BO <sub>3</sub> tank level sensor port | -        | -         | 1         |
| Acid tank level sensor port                           | -        | -         | -         |
| NaOH tank level sensor port                           | 1        | 1         | 1         |
| Waste tank level sensor port                          | -        | option    | 2         |
| Dispenser port<br>(RS-232)                            | -        | -         | 1         |
| Titration port<br>(RS-232)                            | -        | -         | 1         |
| USB port                                              | -        | option    | 1         |

## Ambient conditions

For indoor use only.

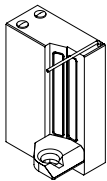
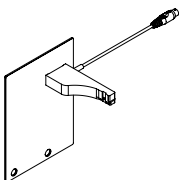
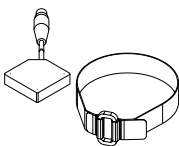
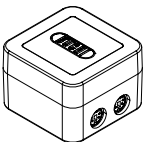
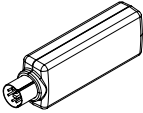
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|---------------------------------|--------------------------------------------------------------------------------------------|
| Max. altitude above sea level   | 2000 m                                                                                     |
| Ambient and storage temperature | 5–40 °C                                                                                    |
| Maximum relative humidity       | 80% for temperatures up to 31 °C<br>decreasing linearly to 50 % relative humidity at 40 °C |

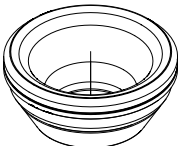
## Materials

| Component                | Materials of construction            |
|--------------------------|--------------------------------------|
| Housing                  | Polyurethane                         |
| Housing electric         | Stainless steel                      |
| Steam generator housing  | Stainless steel                      |
| Housing stirrer          | Glass fiber reinforced polypropylene |
| Rear cover               | Polyvinyl chloride                   |
| Glass parts              | Borosilicate 3.3                     |
| Plastic splash protector | Glass fiber reinforced polypropylene |
| Protective cover         | PMMA                                 |
| Sealing                  | CSM                                  |
| NaOH hose                | EPDM                                 |
| Three-way valve          | PP / PE                              |

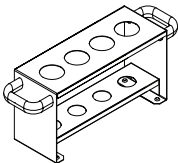
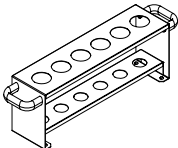
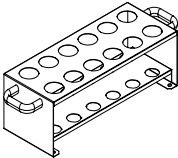
## Spare parts and accessories

### Accessories

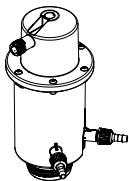
|                                                                                                                                                                                       | Order no. | Image                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| <p>Reaction detection sensor</p> <p>Detects the optimal alkalization point, saves up to 30 % of NaOH in every determination, saves resources and reduces the ecological footprint</p> | 11072666  |   |
| <p>OnLevel sensor</p> <p>Sensor to set the desired distilled volume in the receiving vessel, for most reproducible results in every determination</p>                                 | 11070270  |  |
| <p>Tank level sensor kit</p> <p>Detects the current reagent / water / waste level in the tank, for higher convenience and smooth operation during runs</p>                            | 11072294  |  |
| <p>Eco Titrator</p> <p>Including pre-defined methods for MultiKjel / MultiDist and connection to enable automatic titration</p>                                                       | 11072748  |                                                                                       |
| <p>StatusLight cpl., incl. communication cable</p> <p>Indicates the status of the instrument (instrument is ready to use, has an error or is in operation).</p>                       | 11068959  |  |
| <p>BUCHI Bluetooth® Dongle, connects instrument to smart-phone via Bluetooth®</p>                                                                                                     | 11067770  |  |

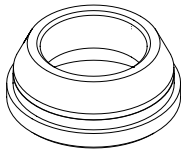
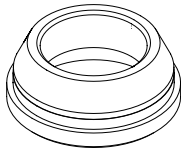
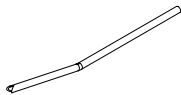
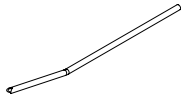
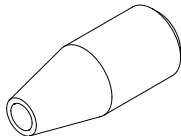
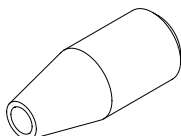
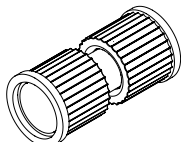
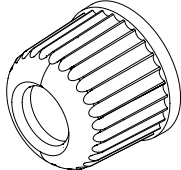
|                                                                                                       | Order no. | Image                                                                               |
|-------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------|
| Adapter for 3rd party sample tubes<br>Adapter setup for other sample tubes (250 mL), sealing included | 11072398  |  |
| Sealing for sample tube 3rd party adapter                                                             | 11072180  |  |

## Racks and rack parts

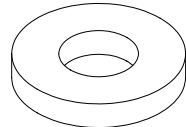
|                                                                                                    | Order no. | Image                                                                                 |
|----------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| Sample tube holder (4x 500 mL tubes)                                                               | 016951    |    |
| Sample tube holder (6 x 300 mL tubes)                                                              | 043039    |   |
| Sample tube holder (12 x 300 mL tubes)                                                             | 043041    |  |
| Dispenser unit Titronic 300<br>For back titration, including connection cable to distillation unit | 11075111  |                                                                                       |

## Splash protector spare parts

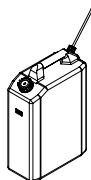
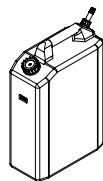
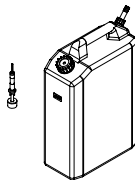
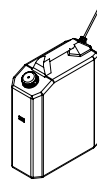
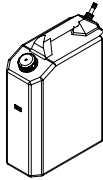
|                                                                | Order no. | Image                                                                                 |
|----------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| Glass splash protector<br>For visible distillation processes.  | 11071013  |  |
| Plastic splash protector<br>The most durable splash protector. | 11070670  |  |

|                                                                                                          | Order no. | Image                                                                                 |
|----------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| Devarda splash protector<br>Prevents from foaming into the condenser.                                    | 11071014  |    |
| Sealing with ring (CSM)                                                                                  | 11073674  |    |
| Sealing with ring (CSM)<br>4 pcs.                                                                        | 11085448  |    |
| Steam inlet tubing to sample tube                                                                        | 043424    |    |
| Steam inlet tubing to sample tube (750 mL)                                                               | 043119    |  |
| Connecting piece (CSM)<br>Rubber piece between splash protector and steam outlet tube, alkali-resistant. | 019002    |  |
| Connecting piece (CSM)<br>4 pcs.                                                                         | 11085449  |  |
| Bridge splash protector to condenser                                                                     | 11070620  |  |
| Cap nut GL14                                                                                             | 033577    |  |

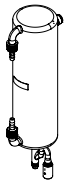
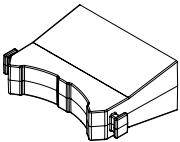
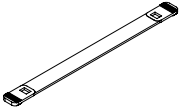
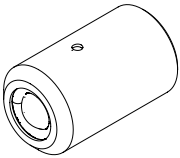
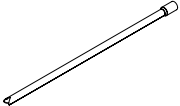
|                                                                                            | Order no. | Image                                                                               |
|--------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------|
| Hose barbs, set. 4 pcs, straight, GL 14, FPM seal<br>Content: Hose barbs, cap nuts, seals. | 040296    |  |

|                                                      |        |                                                                                     |
|------------------------------------------------------|--------|-------------------------------------------------------------------------------------|
| Seals, set. 10 pcs, for hose barbs GL 14, FPM, green | 040040 |  |
|------------------------------------------------------|--------|-------------------------------------------------------------------------------------|

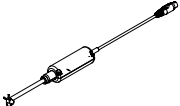
## Tank spare parts

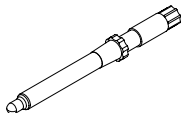
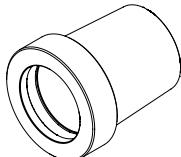
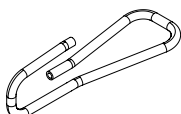
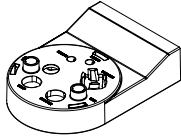
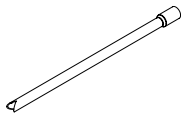
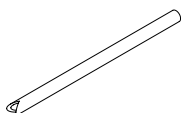
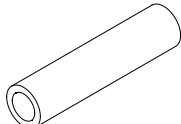
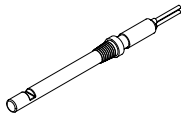
|                                                    | Order no. | Image                                                                                 |
|----------------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| Cap set, 10L tank                                  | 11073639  |                                                                                       |
| Storage tank (10 L) for chemicals                  | 043468    |    |
| Storage tank (10 L) for waste                      | 043470    |  |
| Storage tank (10 L) with level sensor for waste    | 043474    |  |
| Cap Set, 20 L tank                                 | 11072174  |                                                                                       |
| Storage tank (20 L) for chemicals<br>Caps included | 043469    |  |
| Storage tank (20 L) for waste<br>Caps included     | 043471    |  |
| Tank labels                                        | 043434    |  |

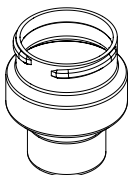
## Condenser spare parts

|                                            | Order no. | Image                                                                                 |
|--------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| Glass condenser with check valve           | 11072183  |    |
| Clamp for condenser                        | 11066868  |    |
| Rubber band<br>Holding the glass condenser | 11070669  |    |
| Check valve<br>For overpressure safety     | 11071740  |   |
| Dist. Outlet PTFE L=300 for receiver side  | 11071940  |  |

## Titration related parts

|                                                                  | Order no. | Image                                                                                 |
|------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| Receiving vessel 420 mL                                          | 043390    |  |
| Stirrer<br>For the receiving vessel.                             | 11070246  |  |
| pH Electrode glass, refillable<br>For potentiometric titrations. | 11065834  |                                                                                       |

|                                                                                                                     | Order no. | Image                                                                                 |
|---------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| pH Electrode gel, maintenance-free<br>For potentiometric titrations.                                                | 11056842  |    |
| pH Electrode Solitrode without cable<br>For potentiometric titrations.                                              | 11086770  |                                                                                       |
| Clamp cone pH-electrode                                                                                             | 11069793  |    |
| Hose Tygon Ø 8.0 x 4.8<br>Hose to receiving module (waste aspiration, boric acid dosing)                            | 043364    |    |
| Receiving support<br>For attaching the receiving vessel to the distillation unit                                    | 11071003  |   |
| Condensate outlet to receiving module, PTFE                                                                         | 11071941  |  |
| Aspiration tubing receiving vessel                                                                                  | 11072589  |  |
| H <sub>3</sub> BO <sub>3</sub> tubing receiving vessel<br>For dosing H <sub>3</sub> BO <sub>3</sub>                 | 11072637  |  |
| Colorimetric sensor (Optrode)<br>For colorimetric titrations.                                                       | 11066601  |  |
| Kit colorimetric titration (Optrode)<br>Includes all Optrode accessories (w/o Optrode sensor and receiving vessel). | 11068260  |                                                                                       |

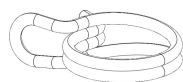
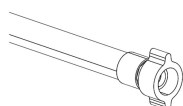
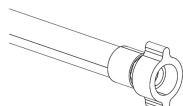
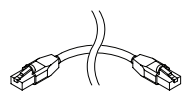
|                                                                                | Order no. | Image                                                                               |
|--------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------|
| Receiving vessel (Optrode)<br>For colorimetric titrations with Optrode sensor. | 11068263  |  |

## Sample tubes

|                                                                                   | Order no. | Image                                                                                 |
|-----------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| Sample tubes micro (100 mL)<br>4 pcs.                                             | 11057442  |    |
| Sample tubes 300 mL<br>20 pcs.                                                    | 11059690  |    |
| Sample tubes 300 mL<br>For sample volumes up to 200 mL or 5 g in weight<br>4 pcs. | 037377    |   |
| Sample tubes graduated 300 mL<br>4 pcs.                                           | 043049    |  |
| Sample tube 500 mL                                                                | 026128    |  |
| Sample tubes 500 mL<br>4 pcs.                                                     | 043982    |  |
| Set sample tube 750 mL with long suction tubing                                   | 11058999  |  |

|                     | Order no. | Image                                                                               |
|---------------------|-----------|-------------------------------------------------------------------------------------|
| Pair of glass tongs | 002004    |  |

## Cable and tubing

| Specification                                                                                                                                                      | Order no. | Image                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|
| Hose peristaltic pump out (2.5 m)                                                                                                                                  | 11071630  |                                                                                       |
| Hose clips peristaltic pump hose                                                                                                                                   | 043586    |    |
| Hose to NaOH/ H <sub>2</sub> O/H <sub>3</sub> BO <sub>3</sub> pumps or drain (2 m)                                                                                 | 11072687  |                                                                                       |
| Hose clip to NaOH/H <sub>2</sub> O/ H <sub>3</sub> BO <sub>3</sub> pumps or drain                                                                                  | 043841    |    |
| Suction to tube tank (0.58 m)                                                                                                                                      | 043407    |   |
| Tap water hose cpl.                                                                                                                                                | 037780    |  |
| Cable to Metrohm & Mettler (T-series) titrator                                                                                                                     | 043617    |                                                                                       |
| To connect the Metrohm Titrimo plus, a Metrohm remote box is needed, see also quick guide.                                                                         |           |                                                                                       |
| Set of sealings tap water hose                                                                                                                                     | 040043    |  |
| Connection cable to SI-Analytics TitroLine/Titronic for K-365                                                                                                      | 043618    |                                                                                       |
| Tubing to peristaltic pump                                                                                                                                         | 11070015  |                                                                                       |
| Communication cable RJ45, 2 m                                                                                                                                      | 044989    |                                                                                       |
| Connection between vacuum controller/interface and recirculating chiller, vacuum controller/interface and vacuum pump or steam distillation unit and Eco titrator. |           |  |

## Consumables

|                                                                                                                                                                                             | Order no. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 2% boric acid pH 4.65 +/- 0.15 w/o color indicator, 10 L<br>For potentiometric titrations.                                                                                                  | 11086758  |
| 4% boric acid pH 4.65 +/- 0.15 w/o color indicator, 10 L<br>For potentiometric titrations.                                                                                                  | 11086757  |
| 2% boric acid pH 4.65 +/- 0.15 with Sher indicator, 5 L                                                                                                                                     | 11064972  |
| 4% boric acid pH 4.65 +/- 0.15 with Sher indicator, 5 L                                                                                                                                     | 11064973  |
| 4% boric acid pH 4.65 +/- 0.15 with bromocresol green / methly red mixed indicator, 5 L                                                                                                     | 11064976  |
| Buffer solution pH 4.00 ± 0.01<br>twin-neck bottle, 250 mL                                                                                                                                  | 11064974  |
| Buffer solution pH 7 ± 0.01<br>twin-neck bottle, 250 mL                                                                                                                                     | 11064975  |
| KCl electrolyte, saturated<br>Electrode storage solution, 250 mL                                                                                                                            | 11064978  |
| Sher indicator 100 mL<br>Color indicator for colorimetric titrations.                                                                                                                       | 003512    |
| Ammonium phosphate monobasic, 25 g<br>Reference substance for the verification and OQ of the Kjeldahl distillation units.                                                                   | 045527    |
| Weighing boats<br>Nitrogen-free weighing paper 58 x 10 x 10 mm, 100 pcs.                                                                                                                    | 11060522  |
| Kjeldahl Tablets Titanium<br>For efficient digestions, 1000 tablets (3.5 g K <sub>2</sub> SO <sub>4</sub> / 0.105 g CuSO <sub>4</sub> * 5 H <sub>2</sub> O / 0.105 g TiO <sub>2</sub> )     | 11072627  |
| Kjeldahl Tablets Titanium Micro<br>For small sample sizes, 1000 tablets (1.5 g K <sub>2</sub> SO <sub>4</sub> / 0.045 g CuSO <sub>4</sub> * 5 H <sub>2</sub> O / 0.045 g TiO <sub>2</sub> ) | 11072628  |
| Kjeldahl Tablets Missouri<br>For efficient digestions without Titanium, 1000 tablets (4.98 g K <sub>2</sub> SO <sub>4</sub> / 0.02 g CuSO <sub>4</sub> * 5 H <sub>2</sub> O)                | 11072629  |
| Kjeldahl Tablets ECO<br>For eco-friendly digestions with minimum amount of copper, 1000 tablets (3.998 g K <sub>2</sub> SO <sub>4</sub> / 0.002 CuSO <sub>4</sub> * 5 H <sub>2</sub> O)     | 11072630  |
| Kjeldahl Tablets Antifoam<br>For foaming samples in digestions to avoid cross contamination due to foaming, 1000 tablets (0.97 g Na <sub>2</sub> -SO <sub>4</sub> / 0.03 g Silicone)        | 11072631  |
| Kjeldahl Tablets Copper Micro<br>For small sample sizes without Titanium, 1000 tablets (1.5 g K <sub>2</sub> SO <sub>4</sub> / 0.15 g CuSO <sub>4</sub> * 5 H <sub>2</sub> O)               | 11072632  |

## Maintenance kit

|                                                                                                            | Order no. |
|------------------------------------------------------------------------------------------------------------|-----------|
| Customer Kit for Kjel Line<br>Including suction tube with connecting piece, gaskets and CSM seal with ring | 11073024  |

## Upgrade kits

We offer the following upgrade kits:

- Upgrade Basic base unit with aspiration pump
- Upgrade Basic base unit and aspiration pump with I-300 Pro
- Upgrade Basic base unit with aspiration pump and I-300 Pro
- Upgrade Multi base unit with titration vessel
- Upgrade MultiKjel to MultiDist unit with acid-resistant pump

For ordering these upgrades please contact your local service support.

## Documentation

|                                                                                                                                         | Order no. |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------|
| IQ/OQ set BasicKjel & MultiKjel en<br>Including Eco Titrator if available                                                               | 11073604  |
| Rep. OQ BasicKjel & MultiKjel en<br>Including Eco Titrator if available                                                                 | 11073605  |
| Kjeldahl Knowledge Base (EN)<br>Comprehensive guide covering all aspects of the theoretical and practical know-how.                     | 11595478  |
| Kjeldahl Practice Guide (EN)<br>Provides theoretical background information, useful hints and calculation tables for daily routine work | 11592548  |
| Kjeldahl Practice Guide (DE)                                                                                                            | 11592547  |
| Kjeldahl Practice Guide (CN)                                                                                                            | 11592549  |



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