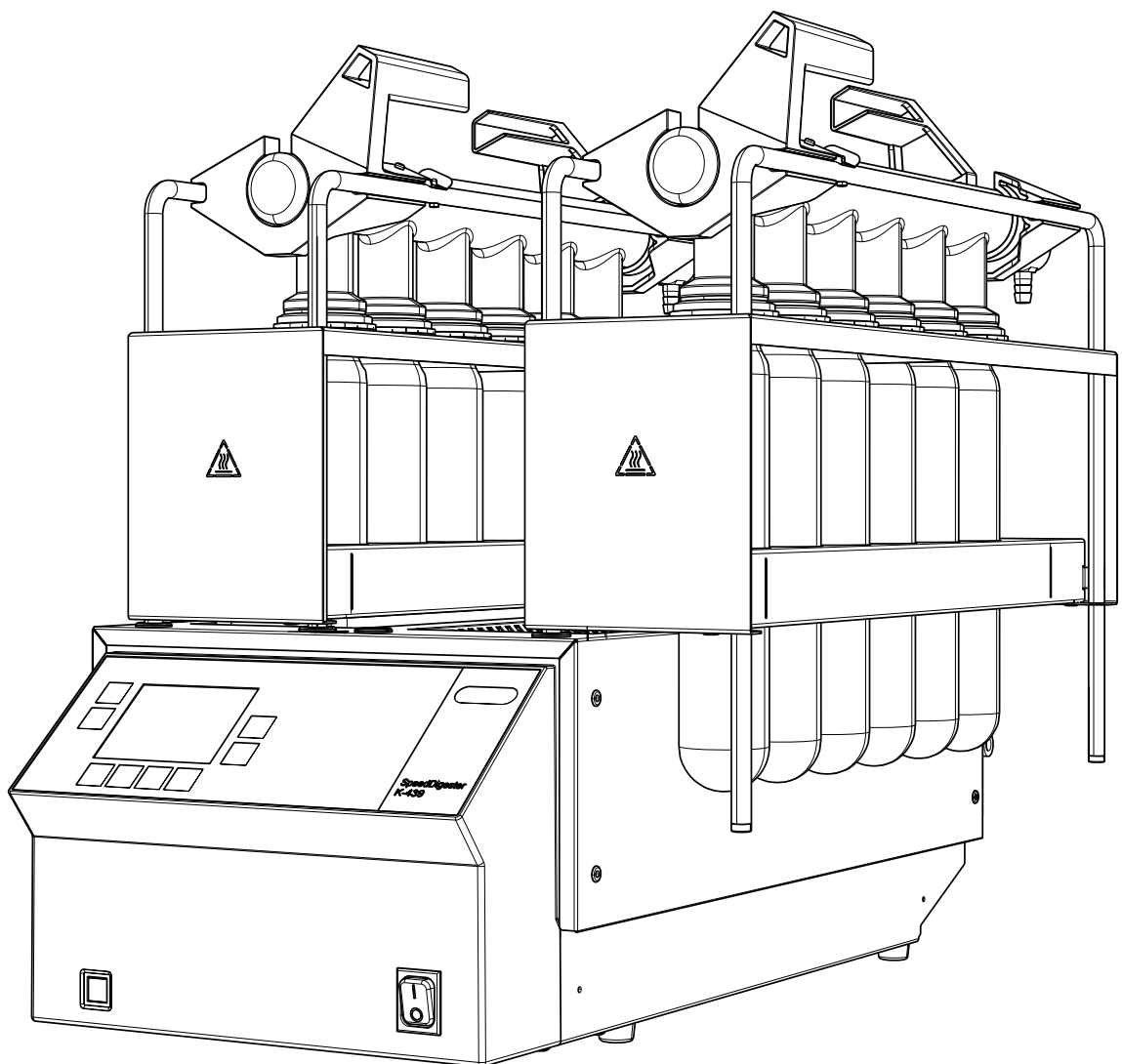




SpeedDigester K-439

Technical data sheet

The SpeedDigester K-439 combines all advantages of IR and block heating digestion systems and is revolutionizing Kjeldahl digestion. It is the only IR digestion system with an integrated temperature sensor, so that fast IR digestion is achievable at precise temperatures.



Scope of delivery

The SpeedDigester matches different and changing needs, and is available ready to be used with 100 mL, 300 mL, 500 mL, ground joint or 250mL 3rd party sample tubes.

The delivered rack and suction module type is depending on the sample tube size. For all configurations with 300 mL sample tubes three different suction module variants are available (standard, with condensate trap and for H₂O₂ addition). The configuration “only digester” does not contain any accessory, and can be used for individual configurations like micro-Kjeldahl, or reflux digestion (e.g. COD or aqua regia).

The scope of delivery is not valid for the configuration “only digester” and depends on the ordered instrument configuration:

| | Qty |
|---|-----|
| Insulation plate | 2 |
| Hose set (EPDM) | 1 |
| Rack | 2 |
| Connector to suction module | 2 |
| Suction module | 2 |
| Sample tubes (300 mL)* | 12 |
| Sample tubes (500 mL)* | 10 |
| Rubber plug for connector to suction module | 1 |
| Weighing Boats | 20 |

* either 300 mL or 500 mL

Order code

Choose the configuration according to your needs:

1 1 5 4 3 9 2 0 0

SpeedDigester K-439 configuration

- 0 only digester (without any accessory for individual configuration e.g. reflux or micro)
- 1 300 mL sample tubes and standard suction module
- 2 300 mL sample tubes and suction module with condensate trap
- 3 300 mL sample tubes and suction module for H₂O₂ addition
- 4 suction module for 250 mL 3rd party sample tubes
- 5 500 mL sample tubes and suction module with condensate trap

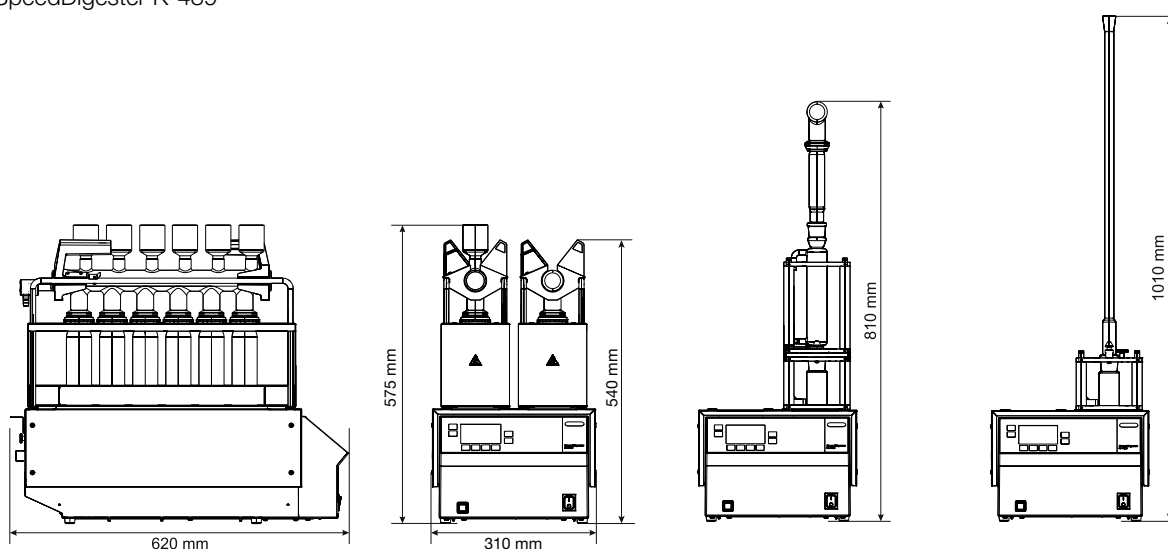
Possible configurations and maximum number of samples

| Possible sample tube configurations | Max. numbers of samples |
|---|-------------------------|
| 100 mL tubes (micro-Kjeldahl) | 12 |
| 300 mL tubes (standard Kjeldahl) | 12 |
| 500 mL tubes (TKN) | 10 |
| Ground joint tubes (NS 29/32; COD / reflux) | 12 |
| 3 rd party tubes | 12 |

Dimensions and weight

| | |
|---|--------------------|
| Dimensions with standard Kjeldahl setup (WxHxD) | 310 x 540 x 620 mm |
| Weight without accessory | 15.5 kg |







SpeedDigester K-439











Technical data











| | |
|------------------------|--|
| Operating voltage | 220 – 240 V \pm 10 % |
| Frequency | 50/60 Hz |
| Power consumption | 2000 W |
| Temperature range | 50 – 580 °C |
| Temperature error | \pm 5 °C at 200 °C / \pm 10 °C at 550 °C |
| Temperature resolution | 1 °C |
| Display | QVGA 240 x 320 pixels |
| Degree of protection | IP 20 |
| Approval | CE / CSA |

Accessories

| For 300 mL tubes | Qty | Order number | Picture |
|---|-----|--------------|--|
| Suction module standard Suitable for most applications | 1 | 11055849 |  |
| Suction module with condensate trap For aqueous samples, prevents backflow of condensate into the sample tube | 1 | 11055865 |  |
| Suction module for H ₂ O ₂ addition | 1 | 11055853 |  |
| Sample tubes 300 mL For sample volumes up to 200 mL in volume or 5 g in weight | 4 | 037377 |  |
| Sample tubes (300 mL) | 20 | 11059690 |  |
| Rack for 300 mL/micro tubes | 1 | 11055248 |  |
| Insulation plate for 300 mL tubes | 1 | 11055142 |  |
| Bed-plate to raising the sample tubes For raising the 300 mL sample tubes in the rack, for easier removal | 1 | 11055943 |  |
| Insulation cap for unused positions To cover individual unoccupied positions of the insulation plate, for 300 mL and 500 mL sample tubes | 1 | 11056024 |  |



| For 500 mL tubes | Qty | Order number | Picture |
|---|-----|--------------|---|
| Suction module with condensate trap | 1 | 11055851 |  |
| Sample tubes (500 mL) For sample volumes up to 400 mL in volume or more than 4 g in weight | 4 | 043982 |  |
| Rack for 500 mL tubes (incl. base and interlock spring) | 1 | 11056966 |  |
| Insulation plate for 500 mL tubes | 1 | 11055143 |  |
| Insulation cap for unused positions To cover individual unoccupied positions of the insulation plate, for 300 mL and 500 mL sample tubes | 1 | 11056024 |  |

| For micro-Kjeldahl tubes | Qty | Order number | Picture |
|---|-----|--------------|---|
| Suction module standard | 1 | 11055849 |  |
| Sample tubes micro For sample volumes up to 3 mL in volume or 0.2 g in weight. Reduction of chemicals of approx. 80% compared to the 300 mL tubes. | 4 | 11057442 |  |
| Rack for 300 mL/micro tubes | 1 | 11055248 |  |
| Insulation plate for micro tubes | 1 | 11055204 |  |

| For reflux and COD digestion | Qty | Order number | Picture |
|---|-----|--------------|---|
| Reflux rack | 1 | 11058226 |  |
| Air reflux condenser Length 700 mm, NS 29/32 | 6 | 11058300 |  |
| Water reflux setup Incl. holder with 6 water condensers, 6 absorption vessels and silicone hoses with quick coupling | 1 | 11058227 |  |
| Absorption vessels for water reflux | 6 | 11058377 |  |
| Insulation plate (reflux and 3 rd party tubes) | 1 | 11055877 |  |
| Sample tubes ground joint (NS 29/32) | 6 | 11058697 |  |
| Stand for air reflux condensers Stand for 12 condensers | 1 | 11058700 |  |
| Cooling tray To cool the sample tubes when adding the chemicals | 1 | 11058701 |  |
| Suction module standard | 1 | 11055849 |  |
| Connector to suction module (PVDF; high resistant) | 1 | 11056804 |  |

| High resistant parts * | Qty | Order number | Picture |
|------------------------------------|-----|--------------|---|
| Sealing (PTFE) | 1 | 022442 | |
| Hose set (FKM) | 1 | 11056891 | |
| Connector to suction module (PVDF) | 1 | 11056804 |  |

* For digestions using nitric acid, hydrochloric acid or aqua regia, special system requirements are necessary

| General Accessories | Qty | Order number | Picture |
|--|-----|-------------------------|---|
| Weighing Boats Nitrogen-free paper, 58 x 10 x 10 mm | 100 | 11060522 | |
| Glass caps For occupying empty sample positions, to close the suction circuit | 4 | 040049 |  |
| Stand with drip tray (for suction manifold) | 1 | 11055216 |  |
| Connection cable to Scrubber The Scrubber is controlled by the digester by the cable connection (already incl. at Scrubber ^{ECO} models) | 1 | 030973 | |
| Digestion rods To prevent boiling delays | 10 | 043087 | |
| Scrubber K-415 | 1 | see Data Sheet Scrubber | |

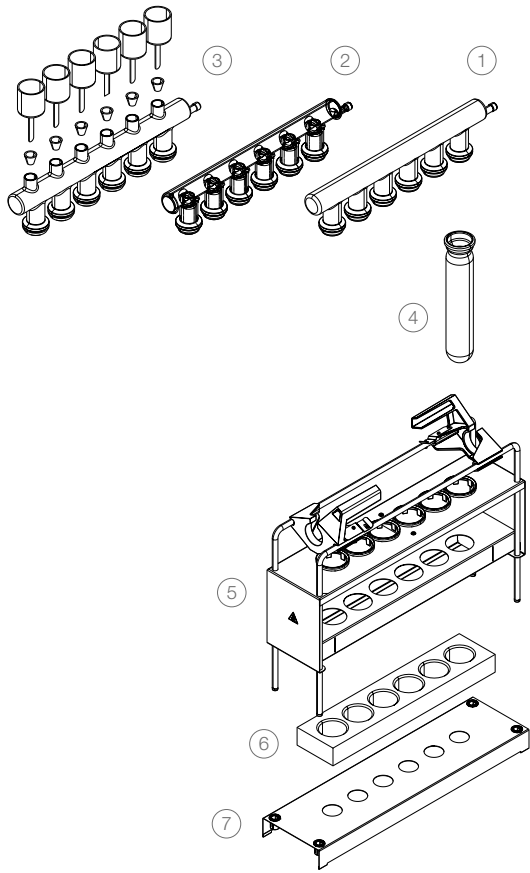
| Documentation | Qty | Order number |
|---|-----|--------------|
| Kjeldahl Guide (EN) Comprehensive guide covering all aspects of the theoretical and practical know-how | 1 | 11055033 |
| Kjeldahl Practice Guide (EN) Provides theoretical background information, useful hints and calculation tables for daily routine work | 1 | 11592548 |
| Kjeldahl Practice Guide (DE) | 1 | 11592547 |
| Kjeldahl Practice Guide (CN) | 1 | 11592549 |
| IQ/OQ set for K-439 (EN) | 1 | 11056167 |
| IQ/OQ set for K-439 (DE) | 1 | 11057207 |
| Repeating OQ K-439 (EN) | 1 | 11056253 |
| Repeating OQ K-439 (DE) | 1 | 11057209 |

| Kjeldahl Tablets* | | | Order number |
|-------------------|--------|--|--------------|
| Titanium | 3.71 g | (3.500 g K ₂ SO ₄ , 0.105 g CuSO ₄ • 5 H ₂ O, 0.105 g TiO ₂) | 11057980 |
| Missouri | 5.00 g | (4.980 g K ₂ SO ₄ , 0.020 g CuSO ₄ • 5 H ₂ O) | 11057982 |
| ECO | 4.00 g | (3.998 g K ₂ SO ₄ , 0.002 g CuSO ₄ • 5 H ₂ O) | 11057983 |
| Titanium Micro | 1.59 g | (1.500 g K ₂ SO ₄ , 0.045 g CuSO ₄ • 5 H ₂ O, 0.045 g TiO ₂) | 11057981 |
| Copper Micro | 1.65 g | (1.500 g K ₂ SO ₄ , 0.150 g CuSO ₄ • 5 H ₂ O) | 11057985 |
| Antifoam | 1.00 g | (0.970 g Na ₂ SO ₄ , 0.030 g Silicone Antifoam) | 11057984 |

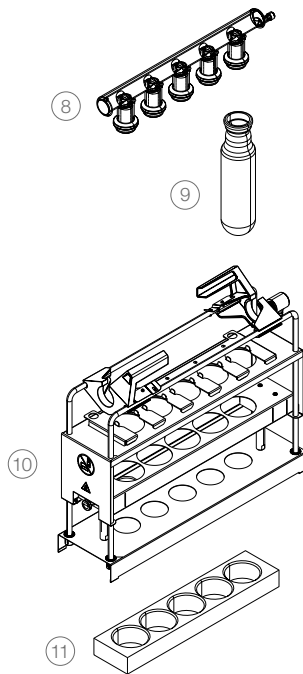
* Box of 1000 tablets

Accessories pictures

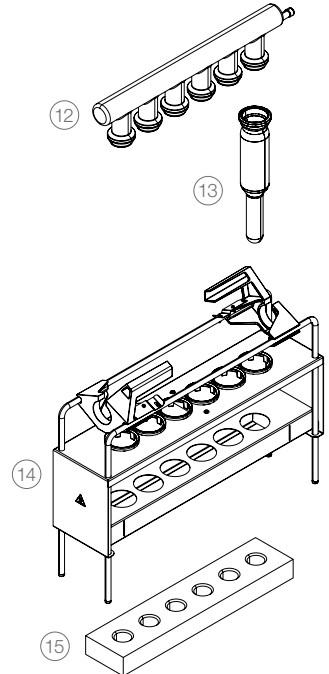
For 300 mL tubes



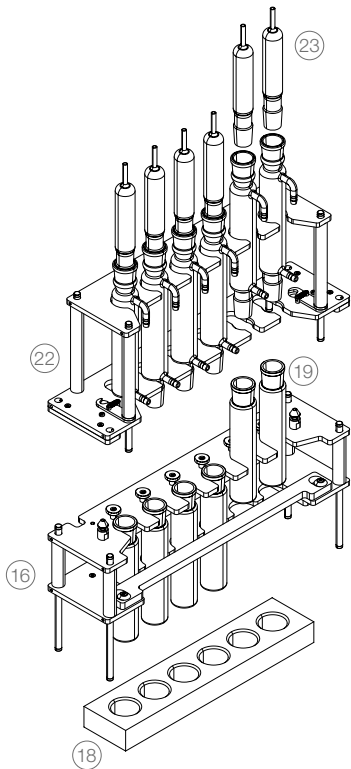
For 500 mL tubes



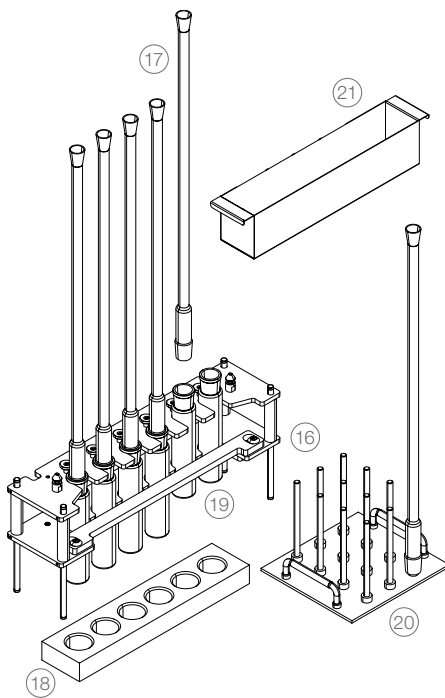
For micro-Kjeldahl tubes



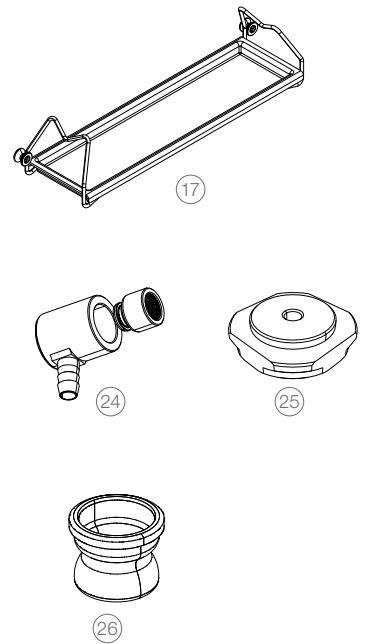
For Reflux digestion



For Reflux digestion COD



Other accessories



Functional principle

- The infrared heating ① generates high temperatures in the sample ②.
- The sample ② is digested in the constantly boiling acid.
- Hot acid fumes rise into the condensation zone ③, condense and rinse back down to the sample creating a constant reflux.
- Residual fumes which escapes the condensation zone is highly corrosive and must be withdrawn and efficiently neutralized (i.e. with the Scrubber K-415) ④.

