

Technical data sheet

KjelDigester K-446 / K-449

The KjelDigester offers fast and safe digestion of up to 20 samples simultaneously. The fully automated model K-449 offers a convenient automatic lift for raising and lowering the sample tube rack and a programming mode so that all digestion methods can be saved. The manual K-446 is an entry level block digester with effortless manual control and manual rack handling. The sample tube rack of both digesters can be placed directly into the KjelSampler K-376 and K-377 for fully automated, high throughput nitrogen and protein determination according to Kjeldahl.



Scope of delivery

The Kjeldigester models are delivered ready to use with the standard package comprising of:

| Components | Qty |
|---------------------------------|-----|
| Sample tubes 300 mL | 20 |
| Rack 20 position | 1 |
| Suction module * | 1 |
| Hose to Scrubber 1.5 m | 1 |
| Hose connector S19 (ball joint) | 1 |
| Clamp for hose connector S19 | 1 |
| Drip tray | 1 |
| Drip tray holder | 1 |

* standard or with condensate trap

Order code

Choose the configuration according to your needs:

1

1

5

4

4

0

0

0

Kjeldigester model

6 K-446 (manual)

9 K-449 (fully automated)

Suction module

1 Suction module standard

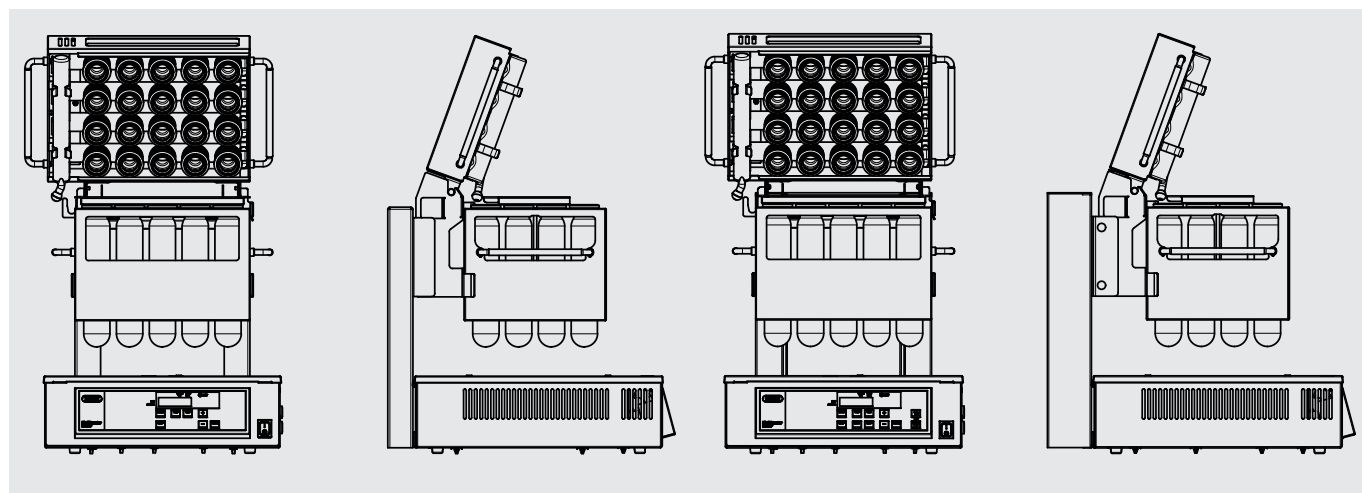
2 Suction module with condensate trap

Technical data

KjelDigester

| | K-446 | K-449 |
|--------------------------------|--------------------------|--------------------------|
| Dimensions (W x D x H) | 472 mm x 524 mm x 764 mm | 472 mm x 558 mm x 764 mm |
| Weight | 18.5 kg | 25.8 kg |
| Weight | 30.3 kg | 37.3 kg |
| Operating voltage | 220–240 V \pm 10 % | 220–240 V \pm 10 % |
| Frequency | 50 / 60 Hz | 50 / 60 Hz |
| Power consumption | max. 2,300 W | max. 2,300 W |
| Display | LCD (2 lines) | LCD (2 lines) |
| Temperature range | 30–450 °C | 30–450 °C |
| Resolution temperature display | \pm 1 °C | \pm 1 °C |
| Average temperature stability | \pm 1 °C | \pm 1 °C |
| Temperature accuracy absolute | \pm 7 °C at 420 °C | \pm 7 °C at 420 °C |
| Certificate | UL / CSA, CE | UL / CSA, CE |

Dimensions



KjelDigester K-446

Front view

Side view

KjelDigester K-449

Front view

Side view

Ambient conditions

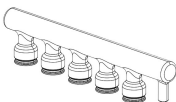

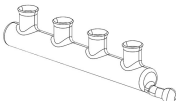
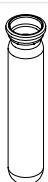
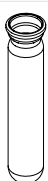

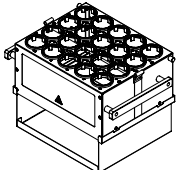
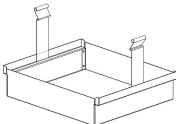

For indoor use only.



| Specification | Value |
|---------------------------------|---|
| Max. altitude above sea level | 2,000 m |
| Ambient and storage temperature | 5–40 °C |
| Max. relative humidity | 80% for temperatures up to 31 °C decreasing linearly to 50% relative humidity at 40 °C |

Spare parts and accessories

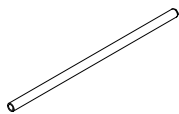
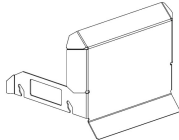
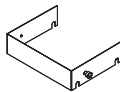
Accessories

General accessories

| Specification | Order no. | Image |
|--|-----------|---|
| Suction tube standard Suitable for most applications | 11058651 |  |
| Suction tube with condensate trap For aqueous samples, prevents backflow of condensate into the sample tube | 11058827 |  |
| Fume collection tube with ball joint Collects the digestion fumes from the four suction modules | 11058825 |  |
| Sample tubes 300 mL, 4 pcs. For sample volumes up to 200 mL or 5 g in weight | 037377 |  |
| Sample tubes 300 mL 20 pcs. | 11059690 |  |
| Glass caps, 4 pcs. For occupying empty sample positions, to close the suction circuit | 040049 |  |
| Rack with 20 positions for 300 mL tubes | 11059831 |  |
| Stand for rack Protects the sample tubes from smashing, as well as other damage. | 11058659 |  |
| Retaining plate Holds the tubes firmly in the rack when it is placed into the dish- washer for cleaning. | 038559 |  |

| Specification | Order no. | Image |
|---|-----------|---|
| Air supply for internal fan Supplies clean air to the display, as well as the built-in fan | 040079 |  |
| Brush for cleaning troughs in the block Is used in conjugation with an electric drill to remove heavy soiling's, it exactly matches the troughs in the block | 043929 |  |


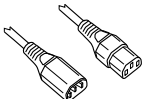
Application related accessories

| Specification | Order no. | Image |
|---|-----------|--|
| Digestion rods To prevent boiling delays, 10 pcs. | 043087 |  |
| User protection shield (for H2O2 and TKN applications) Protects the user from any possible splashes, which may occur from H2O2 usage or boiling delays 10 pcs | 11057889 |  |
| Heat shield for rack Provides heat insulation for sample tubes during digestion | 040052 |  |
| Weighing boats Nitrogen-free weighing paper 58 x 10 x 10 mm, 100 pcs. | 11060522 | |


Documentation

| | Order no. |
|---|-----------|
| Kjeldahl Guide (EN) Comprehensive guide covering all aspects of the theoretical and practical know-how | 11055033 |
| Kjeldahl Practice Guide (EN) Provides theoretical background information, useful hints and calculation tables for daily routine work | 11592548 |
| Kjeldahl Practice Guide (DE) | 11592547 |
| Kjeldahl Practice Guide (CN) | 11592549 |
| IQ/OQ set (EN) Complete set for Installation and Operational Qualification of the instrument | 11059762 |
| Repeating OQ (EN) | 11059763 |

Fume removal

| Specification | Order no. | Image |
|---|-----------|---|
| Condensate bottle (secondary) | 025100 |  |
| Connection cable to digester The Scrubber is controlled by the digester by the cable connection (already incl. at Scrubber ECO models) | 030973 |  |
| Scrubber K-415 (TripleScrubECO) Ideal Scrubber model for Kjeldahl digestions at maximum automation | 114152331 | |

Spare part bundles

| | Order no. | Image |
|----------------------------------|-----------|---|
| Set PTFE sealings 2 × 10 pcs. | 11085447 | |
| Hose connection S19 4 pcs. | 11085451 |  |

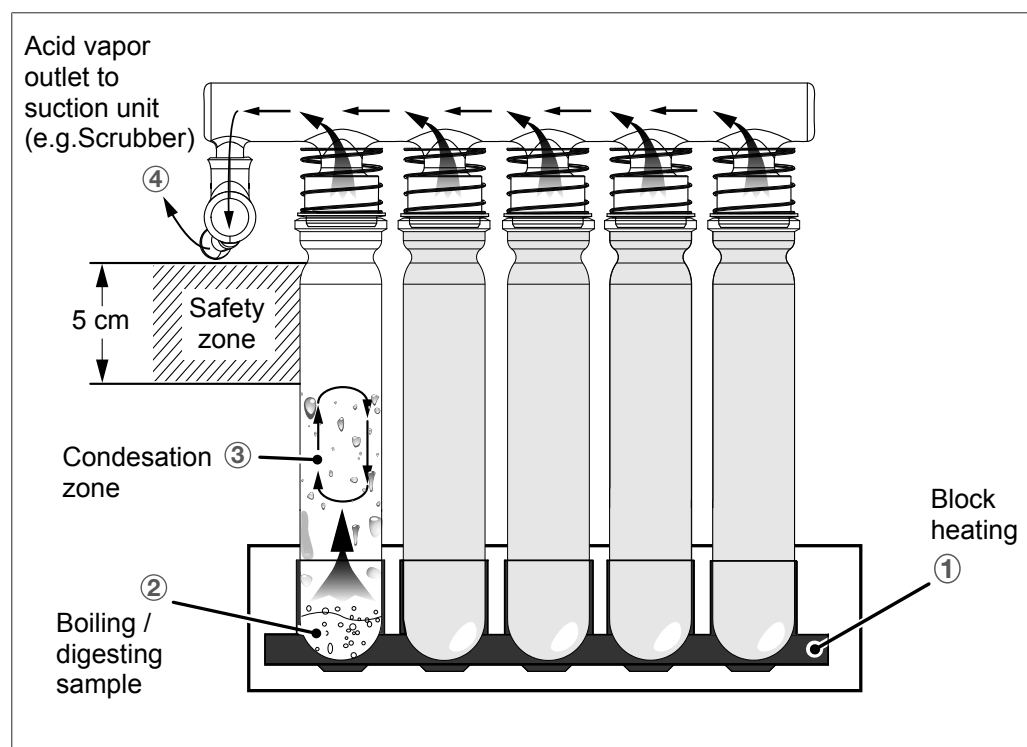
Kjeldahl tablets

| | Order no. |
|---|-----------|
| Kjeldahl Tablets Titanium For efficient digestions, 1000 tablets (3.5 g K ₂ SO ₄ / 0.105 g CuSO ₄ * 5 H ₂ O / 0.105 g TiO ₂) | 11072627 |
| Kjeldahl Tablets Titanium Micro For small sample sizes, 1000 tablets (1.5 g K ₂ SO ₄ / 0.045 g CuSO ₄ * 5 H ₂ O / 0.045 g TiO ₂) | 11072628 |
| Kjeldahl Tablets Missouri For efficient digestions without Titanium, 1000 tablets (4.98 g K ₂ SO ₄ / 0.02 g CuSO ₄ * 5 H ₂ O) | 11072629 |
| Kjeldahl Tablets ECO For eco-friendly digestions with minimum amount of copper, 1000 tablets (3.998 g K ₂ SO ₄ / 0.002 CuSO ₄ * 5 H ₂ O) | 11072630 |
| Kjeldahl Tablets Antifoam For foaming samples in digestions to avoid cross contamination due to foaming, 1000 tablets (0.97 g Na ₂ SO ₄ / 0.03 g Silicone) | 11072631 |
| Kjeldahl Tablets Copper Micro For small sample sizes without Titanium, 1000 tablets (1.5 g K ₂ SO ₄ / 0.15 g CuSO ₄ * 5 H ₂ O) | 11072632 |

Functional principle

The KjelDigester is used to convert organic bound nitrogen (e.g. in proteins) in a sample into ammonium sulfate. During the digestion process, acid fumes and reaction gases may emerge and are handled by the Scrubber K-415. The K-415 is connected to digester system for neutralizing acid fumes and adsorbing unpleasant odors.

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





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