

KT 200 Kjeltec™ Safe and semi-automated distillation unit



Labtec™ Line

The KT 200 Kjeltec™ distillation unit provides a simple and reliable solution for safe and semi automatic distillation. The addition of alkali and the time interval for distillation can be pre-programmed for consistent results independent of operator.

Sample	Parameters
Raw materials and finished products in food, feed and agriculture	Nitrogen, protein



Reliable Kjeldahl analysis

The KT 200 Kjeltect™ provides a simple and reliable solution for safe and semi automatic distillation. The addition of alkali and the time interval for distillation can be pre-programmed for consistent results independent of operator.

Improving safety in the laboratory

A high accuracy bellows pump gives long term stability in delivery of the alkali. The unit is equipped with a wide range of safety features including safety door, plus level pins and overpressure sensors for the steam generator. The door completely covers the area in front of the operator and the unit can not be operated with the door open. The drip tray can easily be removed for cleaning.

The patented SAfE (Steam Addition for Equilibration) technology further improves safety by a special mixing procedure, reducing the exothermic reaction when alkali is added to the acid/salt mixture.

Effective laboratory operations

Running costs are low through optimized applications. Downtime and service costs are minimized using selected components. A routine maintenance schedule supports GLP routines.

- Automatic distillation procedure; incl. alkali addition and distillation for ease of use
- Official and accurate procedures (AOAC, EPA, DIN, ISO etc) simplify validation
- Bellow pumps for dispensing of reagents provides accuracy
- Built-in safety systems for user protection
- Steam Addition for Equilibration* (SAfE) feature for safe distilling of tubes with acid/salt cake contents
- Alkali resistant plastic splash head for long lifetime



Technology

Adaptable to your business

Whether you own a basic distillation unit or a fully automated sampler system, with a FOSS solution you can get on with your business without worrying about how to get the best from your investment. That's because you can rely on the extra FOSS dimension – the features and services designed to help you get the best out of your FOSS instrument with minimal impact on your time and resources. These include:

- Validated applications according to official standards
- Ongoing support to meet your needs
- Training by experienced local personnel
- Customised FossCare service programs to match the needs of your business

All of which ensures that your FOSS solution runs optimally, day after day and year after year.

Safety first

The patented SAfE* technology improves safety by a mixing procedure, reducing the exothermic reaction between alkali and acid during distillation and removing the need for manual pre-dilution.

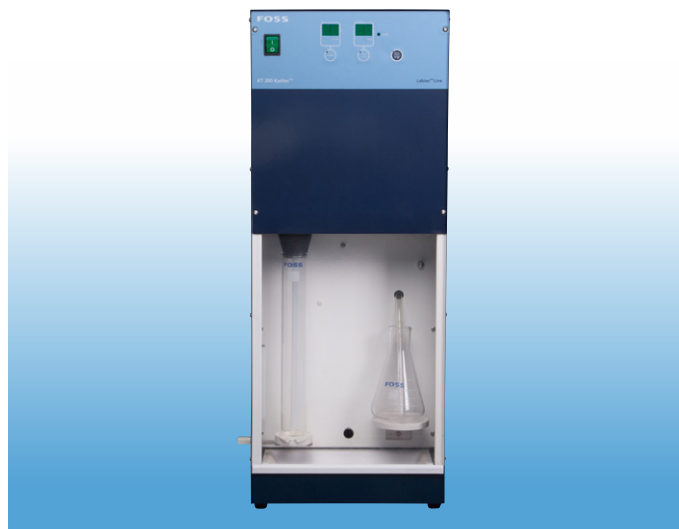
The user is fully protected by the unique safety door which must be closed before the unit will operate. The safety door and drip tray can be removed for cleaning.

Sensors monitor safety doors and water level and over-pressure in the steam generator provide safe conditions for users.

KT 200 Kjeltect™

The KT 200 Distillation Unit is a convenient and safe instrument for rapid steam distillations. One of the main applications for the unit is the distillation of "Kjeldahl digests" where the alkali is conveniently added via a built in dispensing system. The distillate is collected in a receiver flask for subsequent titration. Official determinations of nitrogen/protein according to the Kjeldahl method, can be performed.

Many other distillations can be performed efficiently with the KT 200 Distillation unit. These include Sulphur dioxide, Cyanide, Phenol, Alkaline Direct Distillation and Alcohol.



* Steam Addition for Equilibration



Secure your investment with a FossCare™ Support Agreement

Let FOSS take care of you for a maximum return on your analytical investment. Get a four year warranty as part of the new FossCare Premium Preventive Maintenance Agreement or two years as part of any other FossCare agreement. In addition to the peace of mind afforded by the warranty period, the continual preventive maintenance pays off by keeping your analytical instruments working perfectly every day, year after year.

Why preventive maintenance?

As with any analytical solution, it is essential that your FOSS instrument receives regular maintenance to ensure optimal performance and extended lifetime. Avoiding expensive downtime is a matter of following factory standards and preventively replacing parts before they wear out. In turn, this helps ensure reliable and consistent results at the highest level.

Preventive and predictive maintenance combined with global support from 300 dedicated service, application, software and calibration specialists keeps your instrument running perfectly all year round.



Benefits of a FossCare™ Support Agreement:

- Extended Warranty (two or four years depending on the chosen agreement)
- Regular maintenance; the instrument is diagnosed, cleaned, adjusted, tested, fine tuned and recalibrated
- Minimal downtime from replacing components before they are worn out
- Consistent, accurate and reliable results you can always trust
- Preventative maintenance visits when it suits you (your business)
- 24/7 phone support - no need to worry about closing hours or PO
- Low, fixed service budget prevents unexpected expenses
- Discounts on additional services, spares, training, reagents, consumables and software upgrades

Contact your local Foss office for more information.

System description:

KT 200 Kjelttec™, distillation unit, 230 V, 50-60 Hz

With built-in steam generator for distilled/deionized or tap water. Performs alkali dispensing and automatic distillation complete with: Distillation unit, Alkali tank, a set of 10 receiver flasks, adapters for 100 & 250 ml tubes and digestion tube for 100 & 250 ml. There is a separate feed water system.

Optional accessories:

For a complete Kjeldahl system a Digestor with appropriate accessories such as exhaust, Scrubber, test tubes and catalyst tablets should be selected. Accessories include:

- Titration unit complete, 50 ml
- Adapter for Büchi tubes
- Basket for 12 receiver flasks (250/300 ml)
- Receiver flasks, 250 ml (set of 10)
- Kjelttec DD kit for direct distillation (DD) procedure comprising 12 distilling tubes (750 ml), 12 receiver flasks (300 ml), stand for tubes, basket for flasks and application note
- Handling device for digestion tubes

Applications – some examples of official methods

EN ISO 5983-2 (AOAC 2001:11) which applies to Protein/Nitrogen in Animal Feeds, Cereals, Forages, Oil seeds, Pet Foods and Fish Meal.

This standard is also the reference method for the determination of nitrogen/protein by:

- Indirect spectroscopic determinations (NIR/NIT)
- Dumas combustion method (ISO 16634)

ISO 20483 determination of the nitrogen content of cereals, pulses and derived products.

ISO 8968-2 (IDF/FIL 20-2) determination of the nitrogen content of liquid milk, whole or skimmed, by the block-digestion principle.

ISO 8968-3 (IDF/FIL 20-3) determination of the nitrogen content of liquid, whole or skimmed milk, semi-micro method.

ISO 8968-4 (IDF/FIL 20-4) determination of the non-protein nitrogen content of liquid milk, whole or skimmed.

ISO 937 (AOAC 981.10) Meat and meat products - Determination of nitrogen content (Reference method).

Technical specifications:

Performance data at 230 V:	
Distillation time:	4 minutes at 30 mg N (7 min at 200 mg N)
Distillation capacity:	~ 30 ml/min
Measuring range:	0.1 – 200 mg N
Reproducibility:	1% RSD (including the digestion step)
Recovery:	> 99.5% at nitrogen levels between 1 – 200 mg N
Reagent pump volumes:	0 – 150 ml in steps of 10 ml
Delay:	12 seconds
SAfE _{Patented:}	2 seconds

Installation requirements:	
Power supply:	200-240 V 50 – 60 Hz
Water consumption	2 l/min at water temp of 30°C (During distillation only) 1 l/min at water temp of 15°C
Power consumption:	2 200 W
Ambient temperature:	Max 40°C
Ambient humidity:	Max. 80% relative
Drain:	For cooling water only
Weight netto:	25 kg
Dimensions (L x D x H)	300 x 280 x 770 mm

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