

Technical Specifications

KJELDAHL is a proven and effective method used in food production, animal feed production and environmental analyses.

Food and Feed Protein appointment

Feed or feed materials protein appointment
(sunflower, corn, wheat, oat...)

Food and beverage protein appointments,

- Milk
- Meat
- Flour
- Pasta
- Beer Snacks
- Sausage

Global competency centers in all around the world is a part of after-sales support unit. If you need help for nitrogen and protein appointment, ERKAYA LABORATORY DEVICES with experience in such devices will gladly help you. If you need any of the applications mentioned above, you can contact us.



Distillation Control Unit

- Kjeldahl nitrogen protein appointment device is programmable micro-processor controlled.
- The display of the device is graphical LCD and Menu control is made by Rotary Encoder.
- Kjeldahl nitrogen protein appointment device warns the user by providing warning message.
- Kjeldahl nitrogen protein appointment device buret chamber is suitable to work with 100 ml, 300 ml and 800 ml burets. Device informs the user whether there is water in the steam generator.
- Distillation time can be adjusted between 0-99 minutes.
- NaOH amount to be added is adjustable.
- Steam generator is at 1100 Watt power and WATER TEMPERATURE is between Min. 0°C and Max. 120°C.
- Front panel label of the device is made of heat and humidity resistant materials.
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FULL OTOMATİK DİSTİLLATİON UNIT:

Pure Water automatic adding

NAOH automatic addition

H3BO3 auto insert

Pure Water Tank

NAOH Tank

H3BO3 Tank

Touch screen

**Supply voltage is in 100-240Vac Range
operates with 50Hz. Protected by a fuse
against any kind of fault status. o. 115/**

DIGESTION UNIT

- The outer shell of the device is made of stainless steel and is heat insulated.
- The Kjeldahl nitrogen protein determination device can be run at the same time with 8 different samples.
- The device has electronic thermostat. Working temperature can be adjusted up to 450°C.
- There are integral gas discharge systems on the combustion tubes.
- The work area temperature can be monitored via the digital display and the program recording feature is available.
- The Kjeldahl nitrogen protein determination device is working with 100.300 and 800 ml incinerators at a diameter of 50 mm.
- The operating voltage of the device is 220 Volts and the speed is 50 Hz.



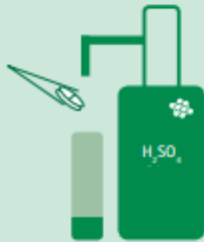
1. DIGESTION



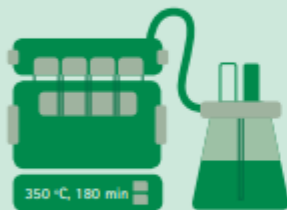
0,6002 g

Balance

weight approx. 0,600 g sample



- Place the sample into a digestion flask.
- Add 1 Kjeldahl tablets for each sample
- Add 25 ml Sulfuric Acid 40 %.
- Carefully suspend the sample by gently swirling the tube.



350 °C, 180 min

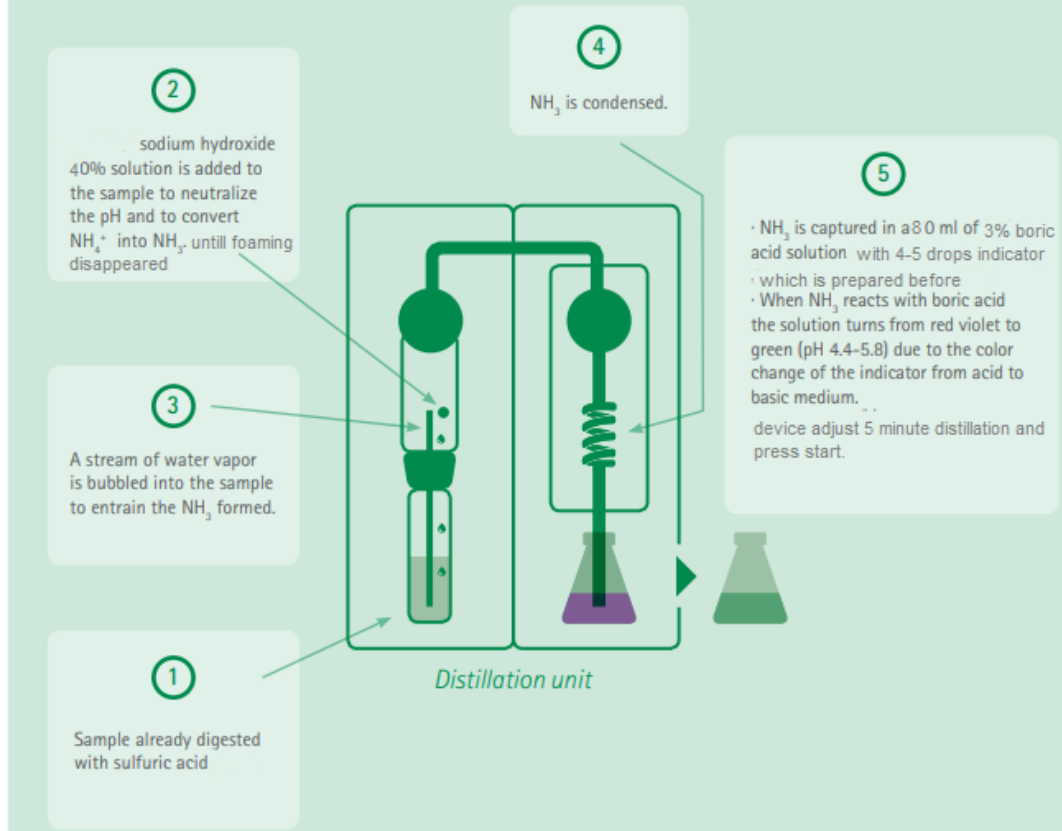
Heating
block

Scrubber

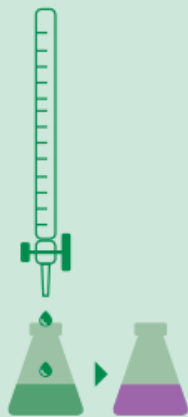
- Bring the digestion tube/flask and mixture into the digestion unit and into a heating block.
- there are two stage of heating, first 30 minutes 260° ° C, second is 150 minutes 420 °C heating.
- The vapours of water and sulfuric acid are bubbled through a solution of sodium hydroxide (scrubber) to neutralize them.
- The digestion is finished when the sample will be totally transparent with a slightly blue color due to the Cu from the catalyst.
- The sample is allowed to cool to room temperature 30 minutes cautiously approx. 25 ml of water is added. Wait 30 minutes
- Then the content of the glass tube is transferred to the distillation unit.

- Before distillation stage indicator should be prepared.
(0,0100 g methylene blue + 0,0400 g methylene red + 100 ml ethyl alcohol)

2. DISTILLATION



3. TITRATION



- Titrate with HCl 1 % until the solution has a slightly violet color.
- With the volume and concentration of HCl calculate % protein with formula below

$$\% \text{ protein} = \frac{k \times (\text{volume of sodium hydroxide})}{\text{sample weight}} \times 100$$

k : acid constant