

Automatic Protein Digestion System



the essence of innovation

KjelTRON™ - MULTI - FUNCTIONAL Automatic PC Compatible DIGESTION SYSTEM (Kjeldahl...COD...DIACID & TRIACID, Trace Metal)

Tulin offers a complete solution for Kjeldahl analysis, made up of a mineralization unit, suction and fume neutralization systems and Distillation/titration units according to the official methods (AOAC, EPA, DIN and ISO).

Application

KjelTRON: Rapid Automatic Macro Block Protein Digestion System (Suitable for all type of sample like solid & liquid, Milk & Dairy products, Feed, food & Health Supplements, Fish Feed Soils, Plants, Water, Pesticides, Fertilizers, Animal feeds, Bio Material & many more)

System Description

Model-KDIGB 12M : Superior Auto sequencing PC Compatible Microprocessor Based twelve samples Macro tube Digestion Block With Programmable controller Digital Two Line LCD Display System Heaters: Rapid & High heating Casted Aluminium for Even Heating Tube Volume : 300ml, Working Volume : 250ml

Superior Features

- ➔ RS 232/RS 485 Connectivity for interface between the user & PC
- ➔ Advance PC Software for Live Graphical Representation of Time/Temperature Gradient
- ➔ 30 Micro Processor User Storage Program with 12 Sequence Steps (Ramp)
- ➔ Separate isolated Temperature Controller in a control tower for digestion heat zone and acid reaction zone
- ➔ Temperature Controller Range: Room Temperature to 450°C, Temperature Accuracy : $\pm 0.5^\circ\text{C}$
- ➔ Live Process View display of various stages of time / temp gradient & facility to have Printing option
- ➔ Remote control Module for data communicate like monitoring, data transfer through wireless to PC / Laptop with 5 -10 feet Distance
- ➔ Entire display screen of Controller should appear wirelessly in the PC / Laptop, monitor & Control From Work Table
- ➔ Upgrade Data Logger Module with real time clock Facility of Memory stick for data Storage with separate port in mother board from PC Port
- ➔ Unit Should be Upgradeable to Autolift Module

Safety Features

- ➔ Auto Over Temperature Protection, Auto sensor Break protection, Auto Over Temp. Cut off, Auto Error Indication and Sensor Break Detection, Etc.,



Automatic Scrubber System :

KjelSCRb – FULLY Automatic Acid Neutralizer Three Stage Scrubbing System

Model KjelSCRb: Acid Neutralizer Three stage Scrubbing SYSTEM

Number Of Stage gas Scrubbing System: Three

First Stage: Neutralization in Alkali

Second Stage: Neutralization in water

Third stage: Dissolution with Raw Water

Non Corrosive – chemical Resistant Magnetic PVC Self priming water recirculation pump Non Corrosive PVC Self priming for Drain Non Corrosive PVC Self priming for condenser water recirculation Vacuum source: Noncorrosive Centrifugal Magnetic Suction pump

Safety Features

- ➔ Auto Error Indication , Sensor Break Detection, Etc.,

Accessories

- ★ Borosilicate Alkali with 2Ltr container
- ★ Borosilicate Water with 2ltr container

Manufactured & Marketed By

Tulin EQUIPMENTS

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An ISO 9001 : 2015
Certified Organisation



KjelTRON™ RAPID Automatic Nitrogen Distillation System

Tulin have improved models with Microprocessor based Versatile Kjeldahl Distillation Unit with wide range. Determination of KJELDAHL, TKN, Total Nitrogen/Protein, Available Nitrogen (Soil), Nitrate Nitrogen, Ammonium & many More.



KjelDIST SA

MODEL KjelDIST SA : Auto Nitrogen / Protein PC Compatible Distillation System (ISO 9001:2015 & CE Certified) (The Rapid Fully Auto Run completely Microprocessor Programmable Based PC Compatible Auto Sequence Operation of Two Line LCD Display Distillation System with 50 Programmable user In built Software)

Electrical Requirment : 220-230V single phase 50Hz A.C.

Application

Suitable for all type of sample like Solid & liquid Soils, Plants, Water, Pesticides, Pharmaceuticals, Food & Health Supplements, Fertilizers, Milk & Dairy products, Feed, Bio Material, Animal feeds, Fish & many more system suitable with manual and automatic modes

User Storage Auto sequence Programme Steps

- Auto Addition of Sample Dilution
- Auto Duration of React time
- Auto Duration for delay time
- Auto Addition of NaOH (Alkali)
- Auto Addition of Boric Acid.
- Auto Duration of Neutralization.
- Auto Addition of water Steam injection.
- Auto Distillate control with adjustable volume Steps
- Auto Duration of Sample Settle Time.
- Auto Process over Intimation with alarm
- Auto alarm for Sequence steps
- Upgrade Auto Titration connectivity for future up gradation

Superior Features

- ➔ Facility for Auto Distillate control with adjustable Sensor determination of Available nitrogen
- ➔ Auto sequence steps Execute in the view of flow diagram in Digital display.
- ➔ PC Interface RS 232 for data Transfer & data Export to excel.
- ➔ Auto Sensing of No Water Condensation, Auto Steam generator with alarm
- ➔ Two Line Alpha Numeric Digital LCD Display, Auto deactivation of operation incase user non avail.
- ➔ Monitoring & measuring of high temperature In the View of Direct Display.
- ➔ Adjustable steam power from 5 to 100%, Auto online water saving mechanism
- ➔ Automatic Water level Monitoring system, Auto reagent Level Sensor
- ➔ Stainless steel non corrosive steam Generator, peristaltic pump for reagents addition.
- ➔ Suction module of waste residue should be door mounted for easy serviceability.
- ➔ Control panel unit along with inbuilt temperature controller, timer, mother board
- ➔ SMPS should be isolated in separate compartment to protect electronics from wet chemistry & acid/alkali process area
- ➔ Nitrogen level : 0.1 to 200 mg Nitrogen, Nitrogen Reproducibility : $\pm 0.1\%$ RSD, Nitrogen Recovery : >99.9%

Safety Features

- ➔ Auto tube inserts error indication
- ➔ Safety Auto Door opens warning alarm with visual Indication
- ➔ Auto Deactivation of System Error Diagnosis, Etc.,

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