



Dry block Kjeldahl digestion apparatus organic nitrogen by Kjeldahl determination

..... Macro and Micro Models

THE EQUIPMENT FOR THE DIGESTION OF ORGANIC NITROGEN IS MADE OF TWO BASIC ELEMENTS:
BLOCK DIGESTER (MINERALISATION) WITH TEMPERATURE CONTROL AND GLASSWARE (MACRO 250 ML AND MICRO 100ML).
DISTILLATION UNIT "PRO-NITRO I" OR "PRO-NITRO II (SEMI-AUTOMATIC), PRO-NITRO III (WITH TITRATION).

Digestion block 'Bloc-digest' (Complete Systems)

Features

- Minimum sample handling.
- Uniform heating.
- Automatic control of temperature and time of the digestion process.
- System of fume extraction.
- Complete system comes with:
 - 1 dry block heater.
 - 1 controller for temperature and time.
 - 1 rack for tubes and support rack.
 - 1 fume extractor.
- Digestion tubes.

Complete unit with:
Dry-block connected to the control unit for time
and temperature rack support for tubes and fume extractor.



MACRO	Part No	No. of places
Bloc Digest 6	4000629	6
Bloc Digest 12	4000630	12
Bloc Digest 20	4000631	20

MICRO	Part No	No. of places
Bloc Digest m 12	4001047	12
Bloc Digest m 24	4001048	24
Bloc Digest m 40	4001049	40

SPARE AND REPLACEMENT PARTS

Dry blocks
Must not be used without a control unit "RAT" as without it there will be no
temperature or time control.



Model	Part No.	No. Places	Ø Tube mm	Height/Width/Depth (external) cm	Temperature °C	Power W	Weight Kg
MACRO	4000507	6	42	18 33 28	45 to 450	1500	18
MACRO	4000508	12	42	18 39 33	45 to 450	2000	25
MACRO	4000509	20	42	18 44 39	45 to 450	2500	31
MICRO	4001050	12	26	18 33 28	45 to 450	1500	16
MICRO	4001051	24	26	18 39 33	45 to 450	2000	22
MICRO	4001052	40	26	18 44 39	45 to 450	2500	27



Apparatus for Analytical Techniques

EXTRACITION

Determination of organic nitrogen by the Kjeldahl: "BLOC-DIGEST"
 Steam distillation of protein samples: "PRO-NITRO I"
 Semiautomatic steam distillation of protein samples: "PRO-NITRO II"
 Extraction for the determination of cellulose and fibres: "DOSI-FIBER"
 Extractor by solvent recovery for the determination of fats and oils in foods and other substances: "DET-GRAS"
 Distillation unit for alcohol "ALCO-DEST"

WATER ANALYSIS

Determination of chemical oxygen demand, C.O.D., in residual waters "C.O.D"
 Determination of biological oxygen demand B.O.D. "B.O.D."
 Refrigerator incubators for B.O.D. "MEDILOW S, M, L and LG"
 Laboratory Flocculators "FLOCUMATIC"
 Water distillation "AQUASEL" and "L-3"

TABLE OF METHODS AND RECOMMENDED APPARATUS PRO- NITRO, DOSI-FIBER, DET-GRAS, BLOC-DIGEST, ALCODEST AND C.O.D*					
	Method	Pro-Nitro	Dosi-Fiber	Det-Gras	Bloc-Digest
ANALYSIS OF CEREAL AND DERIVATIVES					
Determination of the cellulose index	Wladesco		Yes		
Insoluble fibre in food	Van Soest		Yes		
Crude Fibre	Weend & Wijkströn		Yes		
Proteins	Kjeldahl	Yes			Yes
Identification of fat by extraction	Soxhlet extraction			Yes	
Crude fat	Soxhlet extraction			Yes	
Arsenic	Determination by A.A.				Yes
Mercury	Determination by A.A.				Yes
ANALYSIS OF MILK AND DAIRY PRODUCTS					
	Method	Pro-Nitro	Dosi-Fiber	Det-Gras	Bloc-Digest
Crude fat	Soxhlet extraction			Yes	
Crude protein	Kjeldahl	Yes			Yes
Casein	Kjeldahl precipitation of casein	Yes			Yes
ANALYSIS PF ALCOHOLIC BEVERAGES					
	Method	Alcodest	Dosi-Fiber	Det-Gras	Bloc-Digest
Degree of alcohol	Volumetric	Yes			
Volatile acidity	Volumetric	Yes			
Iron	Photometric				Yes
ANALYSIS OF FODDER AND RAW MATERIAL					
	Method	Pro-Nitro	Dosi-Fiber	Det-Gras	Bloc-Digest
Crude cellulose	Weende & Wijkströn		Yes		
Crude protein	Kjeldahl	Yes			Yes
Crude fat	Soxhlet extraction			Yes	
Volatile nitrates bases	Distillation Kjeldahl	Yes			
Soluble crude fat in hydrochloric acid and pepsin	Kjeldahl	Yes			Yes
Total casein	Kjeldahl in casein precipitate	Yes			
Phosphates	Photometric				Yes
Cyanohydric acid	Distillation in silver nitrate	Yes			
Pure zolidene	Soxhlet extraction			Yes	
ANALYSIS OF FRUIT JUICES AND DERIVATIVES					
	Method	Pro-Nitro	Dosi-Fiber	Alcodest	Bloc-Digest
Total nitrogen	Kjeldahl	Yes			Yes
Volatile acid	Measurement by distillation			Yes	
Arsenic	Dichromate determination				Yes
WATER ANALYSIS					
	Method	Pro-Nitro	Dosi-Fiber	C.O.D.	Bloc-Digest
Total nitrogen	Kjeldahl	Yes			Yes
Total phosphate	Photometric method				Yes

* Reference: Official published approved methods by the Ministry of agriculture for fisheries and food 1993.

VISCOMETERS

Rotational "ST-DIGIT"
 Approvals: ASTM, DIN ISO
 Cannon-Fenske, Ubbelohde

SPECTROPHOTOMETRY

Clinical "PHOTOMETER S-2000"
 Biochemistry "PHOTOMETER M2000"
 Single beam Non scanning "SPECTROPHOTOMETER VR-2000"
 Digital colorimeter "CLORMIC"
 Microtitre strip reader "READER M2000"
 Microplate washer "S-1010"
 Colony counter "DIGITAL-S"
 pH meters "pH-500", "LD-pH" and "pH-2001"
 Conductivity "CD-2002"



Spare and Replacement Parts

Features

Time and temperature display.
 Temperature selection from 45 to 450 °C.
 Digestion time period of 1 min. to 9 h. 59 min.
 K type temperature probe monitors the temperature in the block once the set temperature has been reached. An acoustic and indicator lamp show when the unit has reached the end of the heating cycle. A safety alarm operates if the temperature probe fails. A selector switch at the back of the unit for Kjeldahl or C.O.D, controls the

heating ramp rate.
 Control Panel
 Mains switch On/OFF.
 Digital display of temperature.
 Push button temperature selection.
 Push button increase value.
 Push button decrease value.
 Stop button.
 Push button cancel entry.
 Push button select time.
 Digital display of time.

Electronic controller with digital display of time and temperature. RAT.
 Part No 4000051



Electronic RAT controller.

Rack and support for tubes

Made of specially treated chemical resistant dur-al sheet metal, with lifting handles on the side. A removable side panel to maintain an even distribution of heat and enables the samples to be examined while being digested.

Model	Part No.	No. of Places	Height/Width/Depth (external) cm
MACRO	4005071	6	15 17.5 12.5
MACRO	4005081	12	15 23 18
MACRO	4005091	20	15 28.5 23.5
MICRO	4001053	12	15 17.5 12.5
MICRO	4001054	24	15 23 18
MICRO	4001055	40	15 28.5 23.5



Fume extraction

Unit for collecting fumes comes with a support rack. Made of borosilicate glass and stainless steel.

Model	Part No.	No. of Places	Height/Width/Depth (external) cm
MACRO	4005072	6	15 18 12
MACRO	4005082	12	15 23 18
MACRO	4005092	20	15 29 23
MICRO	4001056	12	15 18 12
MICRO	4001057	24	15 23 18
MICRO	4001058	40	15 29 23



Digestion and distillation tube
 Series MACRO of 250 ml volume.
 Graduated to 100 ml.
 42 mm Ø x 300 mm high.
 Part No. 4042300



Tube for digestion and distillation
 Series MICRO of 100 ml volume.
 26 mm Ø x 300 mm high.
 Part No. 4001045



Water jet pump for vacuum extraction.
 Made of PVC designed for the fume extraction of the 20 and 40 place models. Part No. 4000633



Water Jet pump for vacuum extraction.
 Metallic suitable for the extraction of fumes for the 6, 12 and 24 around the condenser and place models. Part No. 7000293



Display of a selection of MICRO 12, 24 and 40 place dry blocks with fume extractor and RAT controller.