

PRODUCT BROCHURE

MILK ANALYSIS







EQUIPMENT





10 LACTOSTAR MILK ANALYSER (ACCESSORIES INCLUDED)

For the routine analysis of milk:

	From %	to %
Fat	0.00	40.00
Protein	0.00	10.00
Lactose	0.00	10.00
SNF	0.00	15.00

The density and freezing point are calculated.

Dimensions (WxDxH): (440x440x200) mm Weight: 15.5 kg



3530 L/

LACTOFLASH MILK ANALYSER (ACCESSORIES INCLUDED)

Analyser for the rapid and accurate determination of:

	From %	to %
Fat	0.00	30.00
SNF	0.00	15.00

The density, protein, lactose and freezing point are calculated.

Dimensions (WxDxH): (300x330x240) mm Weight: 5.0 kg

ACCESSORIES FOR LACTOSTAR AND LACTOFLASH



SPARE PARTS



Hose pump complete



REFERENCE MATERIALS

The exact values depend on the batch. These are included in the delivery.





3670 NOVA SAFETY CENTRIFUGE

Bench centrifuge with angular rotor for butyrometric fat determination according to Dr. N. Gerber, as well as for the determination of the solubility of milk powder with special solubility index tubes (art. no.: 3637)

Properties:

- Automatic interlocking lid
- Automatic brake (braking time < 8s)
- Centrifugation timer (digital)
- Heater: temperature adjustable in 1°C steps from room temperature up to 65 °C (can be switched off)
- Capacity: max. 8 butyrometers or max. 8 special solubility index tubes

Technical specifications:

RCF: 350 g ± 50 g rpm: 1350 Effective radius: 160 mm Weight: 13 kg Dimensions (WxDxH): (470x380x230) mm



SAFETY CENTRIFUGE FOR FAT CONTENT DETERMINATION ACCORDING TO ROESE-GOTTLIEB





3680 SUPERVARIO-N MULTI-PURPOSE CENTRIFUGE

Centrifuge for fat content determination according to Gerber, Roese-Gottlieb, Babcock and for the determination of the solubility of milk powder (ADPI).

Properties:

- Stainless steel housing
- Programmable rotor speed from 600 rpm to 1130 rpm in increments of 10 rpm (corresponding to a g value of 77 to 372 g, depending on the rotor)
- Programmable heater up to 68 °C in 1 °C increments
- Programmable centrifugation time from 1 to 99 minutes
- Automatic interlocking safety lid
- Automatic shut-down in case of unbalance
- Automatic brake

Technical specifications:

Connection values: 230 V/50...60 Hz/1200 VA Weight when empty: 26 kg Total height with lid: 460 mm External diameter: 670 mm Filling height: 370 mm Speed range: 600 to 1130 rpm Temperature range: room temperature up to 68 °C

ACCESSORIES

- For the determination of fat content according to Gerber
 - **3685 Head A:** for a maximum of 36 butyrometer buckets, effective radius of the attachment: 260 mm
- 3631 E

Butyrometer bucket

- For the determination of fat content according to Babcock
 - **3685 Head A:** for a maximum of 18 Babcock buckets, effective radius of the attachment: 260 mm
 - 3632 Babcock bucket
- 3254, 3256, 3258 Babcock bottle without stopper
- For the determination of fat content according to Roese-Gottlieb

3686

Head B: for a maximum of 8 Mojonnier tubes, effective radius of the attachment: 190 mm (operation only possible in accordance with the respective safety regulations)



Extraction tube according to Mojonnier

• For solubility determination



Head C: for a maximum of 6 buckets for solubility index tubes, effective radius of the attachment: 190 mm

Bucket for solubility index tubes

3634 9

Solubility index tube (ADPI tube)



3707 UNIVERSAL WATER BATH WB436-D (DIGITAL)

Digital temperature display (actual value), digital setpoint temperature adjustment. PT 100 sensor (platinum sensor). Stopwatch (1-100 min. with acoustic signal). Stainless steel inner and outer casing. Protection against overheating (even when tank is empty), use with distilled water if possible.

Technical specifications:

Temperature range: up to 100 °C Volume: 18 l Connected loads: 230V/50Hz...60Hz/1000 W Interior dimensions (WxDxH): (300x320x194) mm External dimensions (WxDxH): (331x396x265) mm Weight: 10 kg

3708

UNIVERSAL WATER BATH WB436-A (ANALOGUE)

As art. no. 3707 but with analogue temperature control (adjusting knob), temperature display with thermometer (included in the scope of delivery), thermostatic heat controller.

ACCESSORIES FOR WATER BATHS WB436



Butyrometer stand: stainless steel, for 36 butyrometers Dimensions (WxDxH): (383x325x200) mm, diameter of the hole: 27.2 mm



Butyrometer tube (closed): made of brass, for butyrometer stand (art. no. 3717), external diameter, bottom: 27 mm, external diameter, top: 33 mm, internal diameter: 25.8 mm, length: 170 mm



Butyrometer tube (open): made of brass, for butyrometer stand (art. no. 3717) external diameter, bottom: 27 mm, external diameter, top: 33 mm, inner diameter: 25.8 mm, length: 170 mm



KCl solution: 3M, 250 ml, PE bottle





TITRATION APPARATUS STANDARD

(for milk, 0-25° SH)



TITRATION APPARATUS STANDARD

(for cream, 0-40° SH)

For the determination of acid content. Complete with storage bottle, rubber stopper, burette with automatic zero adjustment, soda lime tower with ascending tube, pressure rubber ball, burette tip with pinch-cock, one 1 ml and one 25 ml pipette, 200 ml Erlenmeyer flask



TITRATION APPARATUS SIMPLEX (for milk, 0-25° SH)



TITRATION APPARATUS SIMPLEX (for cream, 0-40° SH)

For the determination of acid content. Complete with polyethylene bottle on a plastic base, burette with automatic zero adjustment, fine titration at the push of a button, one 1 ml and one 25 ml pipette, Erlenmeyer flask 200 ml





Made of stainless steel, for 500 ml of milk



For serial testing of liquids for particle contamination, in particular for the purity testing of milk. Splash-proof design.

For 500 ml of milk, approx. 800 samples per hour, sharply defined sediment images, 220 V/50 Hz



4910

Filter papers: with writing surface for sediment tester, 1000 pieces (80x45) mm, filter diameter: 28 mm









Automatic cryoscope, single sample device

Properties:

- Reference method in accordance with DIN/ISO/IDF 5764
- Large touchscreen
- New cooling system
- Easy to use, fast, accurate and robust

-0,5565	100	110	120	130	140	150	160
-0,5570					_	_	22
-0,5575					_	_	0,40m
-0,5580			/				
-0,5585		1					
-0,5590		/					
-0,5595							

The freezing curve is displayed during the measurement on the graphical colour display. This is ideal for observing, protocolling and providing proof of the plateau search stipulated by the technical standard (DIN/ISO/IDF 5764).

7160 CRYOSTAR AUTOMATIC (MULTI-SAMPLE DEVICE)

With this device it is possible to measure 12 samples fully automatically at the press of a button.

Properties:

• Reference method in accordance with ISO/IDF/DIN 5764

Weight: 15.2 kg

Dimensions (WxDxH): (430x435x185) mm, with measurement head: 240 mm (H)

ACCESSORIES FOR CRYOSCOPY

7151 Thermal printer: Dimensions (WxDxH): (170x170x65) mm

 7157
 Thermal paper

 7152
 Thermistor, long version: for CryoStar automatic and CryoStar I up to serial number 7150-03000

 7172
 Thermistor, short version: for CryoStar I from serial number 150000

 7165
 Calibration standard "A"-0.000 °C: 250 ml in PE bottle

 7166
 Calibration standard "B"-0.557 °C: 250 ml in PE bottle





7630 SOLUBILITY INDEX MIXER

The device allows the determination of the solubility index of powdery substances or the mixing of liquids. There are two basic modes available for this:

- Measurement of the solubility index of dried milk according to ISO 8156
- Mode with freely adjustable speed (1000-4000 rpm) and mixing time (5s-99s) for mixing substances and determining the solubility index of substances other than dried milk

ACCESSORIES



Glass mixing bowl





Reference table: ADPI "Scorched Particle Standards of Dry Milks" 4 levels



7700 JOLTING VOLUMETER

The device makes it possible to determine the tamped volume or density of powdery and granular products. The product enables compliance with the following standards:

- ISO 8967 (milk powder)
- IDF 134 (milk powder)
- USP <616> method I (pharmaceutical powder)
- ISO 8460 (instant coffee) and others

7661

Replacement measuring cylinder for art. no. 7700





For the manual counting of colonies, with pressure-sensitive light field 145 mm in diameter, with direct and indirect energy-saving LED illumination, with adjustable brightness and colour, with digital display and acoustic counter feedback, height-adjustable housing, black and white Wolffhügel disc with 1 cm2 and 1/9 cm2 graduation. Magnifying lens with flexible arm (Ø 90 mm), 2 x magnification. Petri dishes with a diameter of up to 145 mm can be used; the reducing insert supplied can be used for Petri dishes with a smaller diameter.

Dimensions (WxDxH): (275x300x80) mm Weight: 2.0 kg



5670 HUMIDITY MEASURING DEVICE MLB 50-3C

Weighing range max.: 50 g, reading precision 0.001 g, humidity: (0-100)%, temperature range: (50-160) °C in increments of 1 °C

Dimensions (WxDxH): (210x335x156) mm Weight: 6 kg

ACCESSORIES FOR HUMIDITY MEASURING DEVICE MLB 50-3C

Aluminium specimen dishes:



95 mm in diameter, 80 pieces



100 mm in diameter, 100 pieces



Circular glass fibre filter: for splashing or caking specimens





5811-1 ANALYTICAL SCALE AEJ200-4CM

With pipette calibration programme, weighing range max.: 220 g, reading precision 0.1 mg, housing with wind protection and three sliding doors. Automatic internal adjustment every 3 hours or upon a temperature change of > 0.8 °C. GLP/ISO logging possible, percentage determination. Calibration certificate optional.

Dimensions (WxDxH): (206x335x335) mm **Weight:** 5.4 kg



5820 PRECISION SCALE PCB2500-2

Weighing range max.: 2500 g, reading precision 0.01 g, percentage determination, formulation memory. GLP/ISO logging possible. Calibration certificate optional.

Dimensions (WxDxH): (163x245x79) mm Weight: 1.4 kg

8761 BINOCULAR MICROSCOPE MBL2000

With 45° slanted viewer. Stable metal casing with coaxial fine and coarse focus. Built-in cross table, with integrated 6V/20W illumination. Double lens Abbé condenser N.A. 1.25 with iris diaphragm, pivotable filter holder, height adjustment, glass filters: blue, yellow, green, 10-fold planar eye pieces

Technical specifications:

Objectives: 4x/NA 0.10; 10x/NA 0.25; 40x0.65, 100x/NA 1.25 oil **Weight:** 1.6 kg

8400 Slide: for microscope, half white, cut edges, 50 pieces, dimensions (WxDxH): (76x26x1) mm

Cover glass for microscope: dimensions (WxDxH): (18x18x0.2) mm

8430

8401



Staining cuvette: dimensions (WxDxH): (105x90x80) mm

6049

Steriliser SN55: 53 l, with natural convection for temperature regulation 5 °C above room temperature up to +250 °C, dimensions (WxDxH): (585x514x784) mm, weight: 57 kg

6014	Incubator IN55: 53 l, with natural convection for temperature regulation 5 °C above room temperature up to +80 °C, dimensions (WxDxH): (585x514x784) mm, weight: 57 kg
6002	Universal cabinet UN55: 53 l, with natural convection for temperature regulation 5 °C above room temperature up to +300 °C, dimensions (WxDxH): (585x514x784) mm, weight: 57 kg
	(further models, also with forced air circulation, are available on request)
5140	Methylene blue tablets: for bacteria count estimation, 50 pieces
5150	Resazurine tablets: 100 pieces for LOVIBOND comparator 2000+ (art. no. 5160)
5160	LOVIBOND comparator 2000+: for resazurine test, housing for 2 test tubes for colour comparisons, with milk observation stand, without colour disc (see art. no. 5161)
5161	Colour disc: for resazurine 4/9 with 7 standard reference colours
5162	Test tube: set consisting of 4 pieces, dimensions: external diameter 15 mm, length: 110 mm
Delvotest	- microbiological inhibitor test
6570	Individual test SP-NT: contents up to 100 samples
6571	Plate test SP-NT: for 96 tests each
Determina	ation of alkaline phosphatase
7820	Lactognost: Original pack with reference table for 100 samples
7822	Testing strips Phosphatesmo MI: pack of 50 strips
7825	Peroxtesmo MI: high temperature heating detection/UHT test determination of peroxidase (pack of 100 strips)



Mastitis detection

7920 California Mastitis Test (Schalm test): for quick determination of increased cell content in milk from which a possible mastitis infection can be diagnosed.
 2 test trays with 4 dishes, 1 spray bottle 250 ml
 7930 California Mastitis Test (CMT), (test liquid): 1 l
 7931 California Mastitis Test (CMT), (test liquid): 5 l

Pocket refractometer

For measuring the degree of evaporation in milk and determining the concentration in various fields of application. With the internationally defined Brix scale it is possible to determine the weight percentage of the dry matter directly. Length: 185 mm each.



6521 Glass plate

6522 Stop watch



LABORATORY GLASSWARE



Butyrometers

All butyrometers come in standard packs of 10. Please place your order in units of 10.



Precision butyrometer 0-4%: 0.05: for drinking milk and vat milk, frosted rear scale wall, fault tolerance: 0.025%, (accessory: 3280)

Milk butyrometer



Skimmed milk butyrometer (according to Sichler's method)



Skimmed milk butyrometer (according to Kehe's method)



0-4%: 0.05 (accessory: 3280)

3162 0-5%: 0.05 (accessory: 3280)

Skimmed milk butyrometer (according to Siegfeld's method)



6 616 / 61 6.62 (decessor y. 6266)

Powdered milk butyrometer (according to Teichert's method)



0-35%: 0.5 (accessory: 3310)

0-70%: 1.0 (accessory: 3310)

Ice cream and condensed milk butyrometer (according to Roeder's weighing method)



0-6-12%: 0.1 (accessories: 3290, 3300, 3320)



3171

0-15%: 0.2 (accessories: 3290, 3300, 3320)









BUTYROMETER ACCESSORIES



For all measuring method butyrometers, FIBU without adjustment key.

FUNKE GERBER	
	3270 ADJUSTMENT KEY For FIBU patent closure.
	3280 Rubber stopper, conical: for all measuring method butyrometers, diameter 11 mm/16mm, L: 43 mm
	3290 Rubber stopper: for all weighing method butyrometers for sealing the bulb, diameter 9 mm/13 mm, L: 20 mm
	Rubber stopper with hole: for all weighing method butyrometers, diameter 17 mm/22 mm, L: 30 mm
	Rubber stopper without hole: for powdered milk butyrometers, also suitable for extraction tube according to Mojonnier (art. no. 3870 3871), diameter 17 mm/22 mm, L: 30 mm
	3320 Cream beaker without holes: for ice cream and condensed milk butyrometers and cream butyrometers according to Roeder, external Ø: 15 mm, L: 77 mm
	3321 Cheese beaker with holes: for butyrometers according to Van Gulik's method: external Ø: 15 mm, L: 77 mm
	3323 Butter beaker with 2 holes: external Ø: 15 mm, L: 77 mm
	Butyrometer stand (also suitable for special solubility index tubes, art. no. 3637)
	3330 for 36 samples (PP plastic), dimensions (WxDxH): (610x80x160) mm
	3331 for 12 samples (PP plastic), dimensions (WxDxH): (225x80x160) mm
	Protective shaking hood
	3340 for 36 samples (PP plastic), suitable for art. no. 3330, dimensions

(WxDxH): (660x95x165) mm

for 12 samples (PP plastic), suitable for art. no. 3331, dimensions (WxDxH): (230x85x90) mm

Volumetric pipettes (with one ring mark)



Automatic tilt measure Superior

3420 With rubber stopper and 500 ml storage bottle, 10 ml sulphuric acid 3421 With rubber stopper and 250 ml storage bottle, 1 ml amyl alcohol

Digital proportioning devices

For aggressive acids and alkalis, without bottles.

9484 1-10 ml: 0.05 ml, with thread adapter: A25, A28, A32, A38, A40 9485 2.5-25 ml: 0.1 ml, with thread adapter: A32, A38, A40

Variable proportioning devices

For aggressive acids and alkalis, without bottles.

1-10 ml: 0.2 ml, with thread adapter: A25, A28, A32, A38, A40 9487 9488



Babcock bottle (without stopper)



Extraction tube (according to Mojonnier)

3870	V
	V

3871

With rounded bulb, accessories: cork stopper (art. no. 3872), or rubber stopper (art. no. 3310)

With flattened bulb, accessories: cork stopper (art. no. 3872), or rubber stopper (art. no. 3310)

3875	Wooden stand: for 12 extraction tubes according to Mojonnier
3634	ADPI solubility index tube: 50 ml, graduated from 0-20 ml and mark at 50 ml (see SuperVario-N (3680)), external Ø: 30 mm, L: 138 mm
3637	Special solubility index tubes: for determining the solubility of milk powder, fitting into the butyrometer tubes (art. no. 3641) for use in the "Nova Safety" bench centrifuge (art. no. 3670)
	Suitable rubber stoppers, see art. no. 3050 Matching stand, see art. no. 3331 external Ø: 24 mm, H: 180 mm
Lactodens	simeter
6600	For milk according to GERBER's method, large model: negative scale, with thermometer in stem $1.020-1.0(0) \cdot 0.0005 \text{ a/m}$, T = $20 \circ$ C

6600	For milk according to GERBER's method, large model: negative scale, with thermometer in stem, 1.020-1.040: 0.0005 g/ml, T= 20 °C, 10-40 °C, approx. (300 x 28) mm, normal design/standard model
6610	For milk according to GERBER's method, small model: with thermo- meter in the body, 1.020-1.035: 0.0005 g/ml, T= 20 °C, 0-40 °C, approx. (210 x 17) mm, normal design / standard model
6630	For milk according to Quevenne's method, coloured triple scale: 1.015-1.040: 0.001g/ml, T= 20 °C with thermometer 0-40 °C, approx. (290 x 22) mm
6630-15	For milk according to Quevenne's method, coloured triple scale: 1.015-1.040: 0.001g/ml, T= 15 °C with thermometer 0-40 °C, approx. (290 x 22) mm
6631	For milk according to Quevenne's method, coloured triple scale: 1.015-1.040: 0.001g/ml, T= 20 °C without thermometer, approx. (210 x 22) mm
6631-15	For milk according to Quevenne's method, coloured triple scale: 1.015-1.040: 0.001g/ml, T= 15 °C without thermometer, approx. (210 x 22) mm

Hydrometer

6620	For milk: according to former DIN 10290, without thermometer, 1.020-1.045: 0.0005 g/ml, T= 20 °C, approx. (350 x 25) mm, standard version
6640	for butter milk serum: DIN 10293, without thermometer, 1.014-1.030: 0.0002 g/ml, T= 20 °C, standard model, approx. (240 x 21) mm
6660	For condensed milk (reading at the top): 1.000-1.240: 0.002 g/ml, T= 20 °C, approx. (310x19) mm
6661	For condensed milk (reading at the top): 1.040-1.080: 0.001 g/ml, T= 20 °C, approx. (230x21) mm





Insertion/precision sensor: for 7120, diameter 4 mm, L: 110 mm



OTHER LABORATORY ARTICLES

Diagnostic dipsticks (detection of: pH, calcium, carbonate hardness, chlorine, chloride, iron, total hardness, magnesium, manganese, nitrate, phosphate, residual hardness, sulphate, peroxide),

Laboratory glassware (beaker, Erlenmeyer flasks, measuring cylinder, laboratory bottles, volumetric flask, funnel, beakers, test tubes, burettes, Soxhlet apparatus),

Pipettes (measuring pipettes, volumetric pipettes), samplers, cheese triers, butter triers, magnetic stirrers, stands, Bunsen burners, Petri dishes, sample bottles, brushes, proportioning devices etc.,

can be found in our complete list at www.funke-gerber.de



FUNKE-GERBER -PARTNERS IN DAIRY FARMING SINCE 1904

COMPANY PROFILE

Year of foundation: 1904 Managing Director: Dipl.-Ing. Konrad Schäfer

PRODUCTS

The company develops, manufactures and markets the following laboratory equipment and accessories worldwide:

- All equipment and accessories for the "Gerber method of determining fat" centrifuges, water baths, reading lamps, butyrometers
- "CryoStar" freezing point determination devices
- "LactoStar" and "LactoFlash" milk analysis devices
- pH meters
- General laboratory requirements

ACTIVITIES

Turnkey installation or the design of complete laboratories in the following special fields:

- Milk processing industry
- Dairies, milk collection centres
- Cheese dairies, butter works, ice cream, condensed milk and powdered milk factories

Funke - Dr. N. Gerber Labortechnik GmbH Ringstraße 42 12105 Berlin

Tel. +49 (0)30 702 006 - 0 Fax +49 (0)30 702 006 - 66

kontakt@funke-gerber.de www.funke-gerber.de



Funke - Dr. N. Gerber Labortechnik GmbH Ringstraße 42 12105 Berlin

Tel. +49 (0)30 702 006 - 0 Fax +49 (0)30 702 006 - 66

kontakt@funke-gerber.de www.funke-gerber.de