

for the automatic
serial determination of
NITROGEN



DUMATHERM® N Pro

Elemental analysis for nitrogen determination acc. to Dumas

Technical Data DUMATHERM® N Pro

Data	DUMATHERM® N Pro
Sample size	up to 1 g
Sample capacity	1 - 64 (+8) samples
Analysis time	3 - 5 min, depending on the sample type and sample size
Recovery rate	> 99,5 %
Detection limits with Helium	0,003 - 50 mg N absolut
Standard deviation	< 0,5 % (with standard sample preparation)
Operation	via PC* with DUMATHERM®-Manager
Temperature range Combustion furnace	400 - 1.100 °C
Temperature range Reduction furnace	400 - 1.100 °C
Temperature range Desorption furnace	50 - 350 °C
Required gases and quality	Helium, quality grade 5.0 (99,999 %) Oxygen, quality grade 5,0 (99.999 %) Compressed air or nitrogen, quality grade 2.6 (99.6 %, oil- and water free)
Gas installation	Pressure regulators for high purity gas; 1/4" cylindric thread (female)
Inlet pressure helium	3 - 6 bar
Inlet pressure oxygen	3 - 6 bar
Inlet pressure compr. air / nitrogen	3 - 6 bar
Ambient temperature	15 °C < t < 35 °C
Nominal voltage	230 VAC
Dimensions W / D / H	870 x 710 x 860 mm (closed) - 1108 x 710 x 1118 (doors and protective hood opened)
Weight	ca. 85 kg
Nominal wattage DUMATHERM®	1380 W
Current	max. 6 A
Wanted digital balance	Precision min. 0,1 mg

Order information DUMATHERM® N Pro

Order No.	Type	Description
14-0400	DT N Pro	DUMATHERM® N. 64-place, complete with: - Autosampler for the automatic feeding of up to 64 (+8) samples - Starter Kit for 1.000 combustions - DUMATHERM®-Manager, control software*

*Computer: PC / Laptop and printer are not included in the shipment

*Requirements for PC: Windows® 7 and 10, 64bit, 2 x USB-interface

CONSUMABLES

Make sure to use only original C. Gerhardt consumables in order to obtain the best possible results. These parts have been tested thoroughly for the operation with DUMATHERM® N Pro in the C. Gerhardt application lab.

Set of Consumables - DumaSet®



Order No.	Type	Description
14-0186	DumaSet® N Pro	Consumables for approx 1,000 solid samples, containing: 2 x DumaTube®, Quartz tube für reactor 1 x DumaReact®, Combustion reactor, complete 1 x DumaCollect®, ash insert (unit with 10 pcs.) 10 x DumaFoil®, Tin foil, conditioned, (10 boxes á 100 pcs.)

Tin foil - DumaFoil®



Order No.	Type	Description
14-0017	DumaFoil®	Tin foil 3.5 x 3.5 cm, 100 pcs.
14-0417	DumaFoil®	Tin foil 4.3 x 4.3 cm, specially designed for weighing in larger samples, 100 pcs.

Absorbent - DumaSorb®



Order No.	Type	Description
14-0022	DumaSorb®	Absorbent for liquid samples, content 25 g
14-0295	Super-absorber	Absorbent, special, for low salt- and low fat liquid samples of up to max. 400 mg, content 50 g

Reactor - DumaReact®



Order No.	Type	Description
14-0245	DumaReact®	Prepacked combustion reactor, filled with chromium-free catalyst, 1 pc.

Quartz tube - DumaTube®



Order No.	Type	Description
14-0203	DumaTube®	Quartz tube for reactor, OD 26mm, L 450mm, 2mm wall thickness, 1 pc

Copper - DumaCop®


Order No.	Type	Description
14-0046	DumaCop®	Copper for reduction, 5 boxes á 450 g
14-0246	DumaCop®	Copper for reduction, 10 boxes á 450 g

Quartz wool pads - DumaPads®


Order No.	Type	Description
14-0225	DumaPads®	DumaPads®, Quartz wool pads combibox, content: 30 pcs. small + 30 pcs. large
14-0274	DumaPads®	Quartz wool pads small , content: 60 pcs.
14-0275	DumaPads®	Quartz wool pads large , content: 60 pcs.

Sealing for quartz tube


Order No.	Type	Description
14-0020		Seal for top of quartz tube, black, D 26mm, 4 pcs
14-0019		Seal for bottom connector, 4 pcs

End caps


Order No.	Type	Description
14-0273		End caps for reactor small/large, content: - 10 x end caps small - 10 x end caps big

Ash insert - DumaCollect®


14-0015

Order No.	Type	Description
14-0015	DumaCollect®	Ash insert, ceramics, with bottom, for single use L 100 mm, package with 10 pcs.

Standard - DumaEDTA®



Order No.	Type	Description
14-0032	DumaEDTA®	EDTA Calibration Standard, 10g

Adsorber tube - DumaCO₂®



Order No.	Type	Description
14-0021	DumaCO ₂ ®	CO ₂ adsorber tube, filled with adsorbent and gas tightly closed, package with 6 pcs.

Adsorbent



Order No.	Type	Description
14-0219		Adsorbent for water absorption trap 14-0061, Content 100 g

Accessory for adsorption trap



Order No.	Type	Description
14-0243		Wool for water adsorption trap, 5g

Sealing for adsorption trap



Order No.	Type	Description
14-0081		Silicone seal for water adsorption trap, 2 pcs

ACCESSORIES

Sample magazine retrofit kits



Order No.	Type	Description
		All sample magazine retrofit kits consist of: 1 x Sample feeding plate 1 x Sample transfer unit 1 x Encapsulating device for samples (3-piece) 1 x Positioning insert for autosampler 1 x Calibration kit sample magazine (3-piece) 1 x Gauge for sample height (only KIT100 + KIT144) 1 x Short instruction
14-0264	KIT64	DUMATHERM® N Pro Kit Sample magazine 64-place + 8 for 64 samples + 8 emergency samples. Suitable for sample sizes up to 1 g.
14-0265	KIT100	DUMATHERM® N Pro Kit Sample magazine 100-place + 10 for 100 samples + 10 emergency samples. Suitable for sample sizes up to 300 mg.
14-0266	KIT144	DUMATHERM® N Pro Kit Sample magazine 144-place + 12 for 144 samples + 12 emergency samples. Suitable for sample sizes up to 100 mg.

CameraKit



Order No.	Type	Description
14-0414		CameraKit DUMATHERM®, complete with: 1 x Camera, USB 2.0 uEye XS Camera incl. autofocus-optic, CMOS colour sensor, 5 Megapixel, Full-HD 2 x Fixing screws with nuts 1 x USB-data cable, 3 m <i>Compatible with DUMATHERM® N Pro from Version 3</i>

Encapsulating device



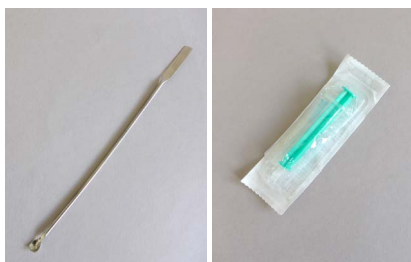
Order No.	Type	Description
14-0025		Encapsulating device for samples, 3-part, for sample magazine 64-place
14-0276		Encapsulating device for samples, 3-part, for sample magazine 100-place
14-0285		Encapsulating device for samples, 3-part, for sample magazine 144-place

Adsorption trap



Order No.	Type	Description
14-0061		Adsorption trap for water complete (Glass part, O-rings and 2 endcaps)

Sample outtaking solid / liquid



Order No.	Type	Description
14-0073		Spatula for solid samples, 1 pc
14-0095		Syringe, 1 ml for liquid samples, 1 pc

Tweezer



Order No.	Type	Description
14-0072		Tweezer, 1 pc

Upgrade Kit 17



Order No.	Type	Description
14-0049		Upgrade Kit 17 - Safety trap gas outlets for saving helium in standby mode

Wrench for reactor



Order No.	Type	Description
14-0288		Special Wrench for top reactor nut, 1 pc

Special tool for DUMATHERM®



Order No.	Type	Description
14-0064		Tool for taking out reactor tubes, 1 pc.

Filling funnel



Order No.	Type	Description
14-0218		Funnel for the filling of the reactors and traps, 1 pc.

Rod for filling



Order No.	Type	Description
14-0065		Rod for reactor tube filling, 1 pc.

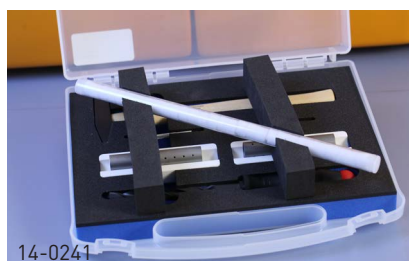
Stand



Order No.	Type	Description
14-0076		Metal stand for supporting reactor tubes

DumaCollect® Stainless steel ash insert

Order No.	Type	Description
14-0240	DumaCollect®steel	Ash insert made of stainless steel, for reuse , 1 pc.
14-0241	DumaCollect®steel	StarterKit Stainless steel ash insert, complete with case: 2 x stainless steel ash insert, 30 x DumaPads®, drill, hammer, crucible half shell and pin punch to remove the ash from the crucible.



Ash finger extractor



Order No.	Type	Description
14-0068		Ash finger extractor, 1 pc For removing and inserting the hot ash inserts

Tool set for DUMATHERM®



Order No.	Type	Description
14-0057		Tool set DUMATHERM, including: 1 x Right-angle screwdriver, 5/64" 1 x Right-angle screwdriver 1/8" 1 x Right-angle screwdriver 9/64" 1 x Right-angle screwdriver 5/32"

Teflon tubing assembled



Order No.	Type	Description
14-0130		Purge line, Teflon, OD 2mm, L 250mm, with ferrules + nuts
14-0330		Teflon tubing, OD 3 mm, ID 1,5 mm, L 450mm, with ferrules + nuts

Helium detector



Order no.	Type	Description
14-0008	LD239	Helium leakage detector, including: - battery charger, 230 V - USB-cable

Leak Troubleshooting Kit



Order No.	Type	Description
14-0220	LTS	Leak Troubleshooting Kit, including : - Bypass tubing very useful for troubleshooting - Push-in fitting for 4mm PUN tube - Connector for TCD, top - Single head wrench SW8 - Spanner SW10

Adapter for gas pipes



Order No.	Type	Description
14-0126		Adapter 1/4", for PU-gas pipe 4mm
14-0125		Adapter 1/4", for gas pipe 2mm
14-0128		Adapter 3/8", for PU-gas pipe 4mm
14-0127		Adapter 3/8", for gas pipe 2mm

Spare parts for bottom reactor connection

Order No.	Type	Description
14-0105		Thread piece stainless steel Ø 4 mm, for bottom reactor connection 14-0075
14-0067		Thread piece PEEK Ø 4 mm, for bottom reactor connection 14-0075
14-0075		Bottom reactor connection Teflon Ø 4 mm, with nuts and ferrules



SUPPORT AND SERVICE

In addition to its high quality instruments, C. Gerhardt offers comprehensive services to maintain the functionality and efficiency of your equipment.

INSTALLATION / EQUIPMENT QUALIFICATION

Selection	Type	Description
99-0204	ABI-DT	Installation and Instruction DUMATHERM® - Installation and connection of the unit - functional check - operating instructions
99-0212	GQF-DT	Equipment Qualification (IQ/OQ) DUMATHERM® - Installation of the unit and instruction - Installation Q ualification IQ and O perational Q ualification OQ , Guidance for P erformance Q ualification PQ - Training of laboratory personnel with certificate - Individual training certificates, if requested

SERVICING AND MAINTENANCE CONCEPTS

For detailed information on servicing and maintenance concepts, please contact your local authorised C. Gerhardt representative.

WORKSHOPS / SEMINARS / APPLICATIONS TRAINING

For detailed information on trainings and workshops, please contact your local authorised C. Gerhardt representative.

TABLE OF CONFIGURATION

Please arrange the required system

DUMATHERM®

Quantity	Order No.	Type	Description

CONSUMABLES / ACCESSORIES

Quantity	Order No.	Type	Description

SUPPORT AND SERVICE

Quantity	Order No.	Type	Description

Send offer to:

Customer No.	
Company	
Name	
Address	
Tel.	
E-mail	
Web	

Presented by:

