

GRScientific

Conforms to ASTM/EN/ISO Standards



MicroTAN *Titrator*

*A Truly Innovative Micro System for Total Acid Number
with up to 75% reduced organic solvent consumption*

Why develop a Micro System for TAN Analysis?



Many industries in the Petrochemical and power sector have a high throughput of samples to test. Customer feedback was obtained from a number of companies within these industries which stated 'The macro system works well but we spend a lot of money on solvents'. GR Scientific believe in listening to

their customer needs and use their technical knowledge and experience to develop new ways of working, including working towards a greener environment.

Our strong customer focus separates us from our competitors. We give you something very rare in today's marketplace, the feeling that you have received more value than you expected.



Unique Micro Combination pH Electrode

The MicroTAN titrator enables the user to save up to 75% of organic solvent used during each sample analysis, reducing the cost per test and cost of waste solvent disposal.

This unique system works due to the development of our micro combination pH electrode and optimised titration vessel. 25ml of organic solvent is all that is required per titration.

Micro combination electrode features:

- UK manufactured
- Excellent stability for non-aqueous titrations
- 'Easy to clean' design for even the toughest crude oil samples
- Regeneration to optimum efficiency within minutes
- Designed to fit the titration vessel geometry to minimise any stirrer vortex
- Micro combination electrode shaft diameter only 6.5mm

MicroTAN Titrator

System Features

- Conforms to ASTM D664
 - Very easy to use - intuitive keypad and function guide display
 - 3 editable pre-programmed TAN methods
 - Results expressed in mg KOH/g
 - 10ml high precision syringe – syringe volume dispensed in 40,000 steps.
 - External RJ122(4-4) bidirectional connection port to printer, balance or PC with RS232C
 - Data Logger – automatic data storage of last 55 analysis results
 - MicroTAN employs automatic MET determination
 - Supplied with an optimized small volume titration vessel and a 250ml capacity vessel for those applications that require larger solvent volumes.
- The micro combination electrode is suitable for use with either size of titration vessel



TiCom Software (optional)

Communications software between MicroTAN Titrator and PC

Allows viewing and printing of all sample input, blank value and titration measurement data.

Reports on multiple samples can be generated directly and exported to Excel or Access.

Program	Sample ID	Sample	Factor (mg/ml)	Result	Result (ml)
KF Standard	batch 85875	0.19170 g	4.7284	2.837 %	1.150
KF Standard	sample 3829	0.15870 g	4.7284	6.518 %	2.188
KF Standard	sample 7676584	0.15580 g	4.7284	3.408 %	1.123
KF Standard	000003	0.31270 g	4.7284	3.912 %	2.587
KF Standard	000002	0.19360 g	4.7284	4.629 %	1.895
KF Standard	000001	0.21390 g	4.7284	2.540 %	1.149
KF Standardization	STAND. (V)	1.000 ml		4.728 mg/ml	1.057

Printer (optional)



Following data will be printed (or sent to PC) after a titration:

Header, instrument serial number, date and time, sample ID code, sample weight, titrant volume, titration result in mg KOH/g, titration duration, user name.

Technical Specifications

Non-volatile memory: Up to 55 results in data logger.
Blank titration, Clock/calendar.
Header texts: 2 lines x 40 characters.
Name of up to 4 operators

Languages: English, Spanish, French, Italian

Display: Graphic backlit LCD, 128 x 64 dots

Keypad: Membrane, 7 keys, guaranteed up to 6 million strokes per key

Material: PET with protective treatment

Syringe volume: 10ml syringe encased in borosilicate glass- high heat resistance and high chemical stability

Resolution: 1/40000 of syringe volume

Dispensing accuracy: (as relative error) $\leq 0.2\%$ for volumes higher than 10 % of syringe

Dispensing reproducibility: $\pm 0.1\%$ for volumes higher than 10 % of the syringe

Liquid contact syringe: borosilicate glass, polyethylene tip and synthetic plunger

Materials: Electrovalve: PTFE and KEL-F. Tubes: PTFE

Inputs Differential measurement: BNC connector.

Outputs: External RJ12(4-4) bidirectional connection port to printer or PC with RS232C. External RJ12(4-4) connection port to any balance with RS232C

Power supply: 90 – 264 V AC, 47-63 Hz

Electrical safety: Meets EC, EN 61010

EMC: Meets EC, EN 50081-2 and EN 50082-2

Permitted temperatures: Operating: 10 – 40 °C.
Storage: 10 – 50 °C
 $\leq 80\%$, relative humidity, non condensing

Enclosure: ABS and enamelled steel

Physical parameters: Weight: 4 kg approx.
Dimensions: 130 x 160 x 300mm

About G.R. Scientific

Key personnel at G.R. Scientific are recognised experts in titration technology and electrochemistry. They have designed and manufactured titrators since the early 1980's and are widely regarded as some of the leading specialists in this technology.

Ordering Information

Part No.	Product
92000	MicroTAN Titrator
Supplied Accessories (also available as spare items)	
503036	1 x TLL SL syringe, 10ml
503037	Cylinder for fixing 10ml syringe
503023	Inlet tube from bottle to pump or burette, use with bottle cap DIN 45 screw (8729)
503041	1 x Filter cartridge with cotton
503040	1 x Burette outlet tube with antidiffuser device
503019	1 x Support with magnetic stirrer
503039	Glass vessel, 250ml
301801	1 x microTAN titration vessel
503103	Micro Combined pH electrode with lead
503042	Small beaker for calibration buffer, 50ml
503026	Pack (10) white "O" rings
503027	Plug-in power supply, 90-264 VCA, 24 V DC

Optional Accessories

Part No.	Product
401914	Thermal Printer
503063	Gas Tight Syringe 1.0ml
503064	Gas Tight Syringe 5.0ml
503065	Luer Needle 17 Gauge
503066	Luer Needle 19 Gauge
503067	Luer Needle Pair (17 & 19 gauge)
503101	Bottle Top Dispenser 5-60ml
61-EFSLIET	100ml TAN/TBN 1M LiCl Electrode Filling Solution
61-1110525	500ml Buffer Solution pH 11
61-ECS	500ml pH electrode cleaning solution
61-ESS5	500ml pH electrode storage solution
61-KOH01F	1 Litre 0.1M KOH/2-Propanol
61-TANSOLVF	1 Litre TAN titration solvent (pre-mixed)
61-TANSOLVFW	2.5 Litre TAN titration solvent (pre-mixed)

Certificates

All Aquamax KF Coulometric titrators are supplied with a calibration certificate traceable to national standards.

For additional technical information, specifications, MSDS data, user manuals, and exhibition news, visit our website at:
www.grscientific.com

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