

Micro TAN Titrator



Application:

The Micro TAN total acid number titrator has been designed to offer maximum specifications and features whilst being priced at a very competitive level. This titrator conforms to ASTM D664-09 for determination of acidic constituents in petroleum products, lubricants and transformer insulating oils.

Micro TAN Titrator

System Features

- Conforms to ASTM D664-09
- Very easy to use - intuitive keypad and function guide display
- Programmable
- Results expressed in mg KOH/g
- 10ml high precision syringe – syringe volume dispensed in 40,000 steps.
- Connects to external pc keyboard for easy text and sample information data entry
- Connects to different types printers, pc and balances
- Data Logger – automatic data storage of last 55 analysis results
- Micro TAN applies differential measurement. Uses micro combination pH electrode
- 2 RS 232C: for printer or PC and other for connection to balance
- Optimised micro titration vessel 25ml capacity



TiCom Software (optional)

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

Communications software between Micro TAN 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.

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.

How does it work

Micro TAN titrator conforms to ASTM D664-09

Usual procedure is

- **Calibration of the electrode** with aqueous pH 11 buffer. Automatic rejection if electrode in poor condition.
- **Blank determination** for the titration solvent. The Micro TAN determines the blank value and automatically stores in memory.
- **TAN analysis.** Select titration program in accordance with micro TAN method and perform the titration.
- Results are expressed in mg KOH/g. They are stored in the data logger; displayed on the Micro TAN screen, and also sent to a printer or PC.

Keypad

Easy to use - intuitive keypad and function guide display.



Syringe

10ml high precision syringe – volume dispensed in 40,000 steps.



Electrovalve

Fitted to top of syringe and controls flow direction of reagent.



Electrodes

A micro combination pH electrode and optimised titration vessel have been developed specifically to address the reduction in organic solvent consumption.



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: Standard syringe 10 ml

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 materials: Syringe: borosilicate glass, polyethylene tip and synthetic plunger
Electrovalve: PTFE and KEL-F. Tubes: PTFE

Inputs and outputs: Differential measurement: BNC connector.
For external keyboard, miniDIN connector.
RS232C bidirectional for PC or printer, telephone connector.
RS232C for balance, telephone connector
Stirrer control: On/Off and speed, RCA connector

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

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

Ordering Information

Part No.	Product
92000	Micro TAN titrator
Supplied Accessories (also available as spare items)	
92-401511	Plug In Power Supply
92-9229	1 x TLL SL syringe, 10ml.
92-8705	1 x Burette inlet tube with bottle cap, DIN 45 screw
92-9199	1 x Filter cartridge with cotton
92-8738	1 x Burette outlet tube with antidiffuser device
92-9322	1 x Support with magnetic stirrer
92-8760	2 x NS14/23 conical adapter
92-8737	2 x Cap for support holes
92-9323	1 x Pack of 3 titration vessel
92-9323-25	Micro TAN vessel, 25ml capacity.
92-P2INS14	1 x micro combination pH electrode
92-9324	1 x Small vessel to calibrate, 50ml
92-9520	1 x LiCl 1 M in Ethanol, 250ml bottle
92-8734	Pack (10) white "O" rings

Optional Accessories

Part No.	Product
92-8201	Thermal printer CT-S280, 40 columns
92-8200	Dot matrix printer
92-9013	Standard PC keyboard
92-8682	TiCom software kit for communication between Micro TAN and PC Includes CD with software and cable

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.

Certificates

All micro TAN Titrators are supplied with:

- EC Declaration of conformity according to directive C.E.M. 89/336/CE
- Calibration test of dispensed volume with the syringe
- Specifications certificate and mV measuring test.

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