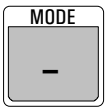
787 KF Titrino

Metrohm

Quick References

8.787.1013

Mode selection



Press key <MODE> until the desired mode is displayed, confirm with <ENTER>.

Modes:

KFT	Karl Fischer titration.
TITER with H2O or Std.	Titer determination with water or with methanol standard.
TITER with Na2Tart*2H2O	Titer determination wit sodium tartrate.
BLANK Determination	Blank determination.

Parameters

Input of titration parameters.
Preselections for the titration sequence and the report output.

Display *Initial value*	*Meaning*	*Input range*
>titration parameters	**General titration parameters**	
extr. time 0 s	Extraction time. Negative number: no addition of reagent during extraction time.	0...±9999 s
stop crit.: drift **stop drift 20 µl/min** **t(delay) 10 s**	Type of stop criteria. Titration stops if stop drift is reached. Titration stops if there is no dosing during t(delay).	drift, time 1...999 µL/min 0...99 s,
stop V: 99.99 ml	Stop volume, to avoid titration vessel overflow.	0.00...99.99 mL
start V: 0.00 ml **dos.rate max. ml/min**	Start volume in mode KFT. Predosing without controlling. Dosing rate for start volume.	0.00...99.99 mL 0.01...150 mL/min, max.
max. Rate max. ml/min	Maximum dosing rate during titration.	0.01...150 mL/min, max.
min.volume incr. min. µl	Minimum volume increment during titration.	0.1...9.9 µL/min, min.
>Preselections	**Preselections for the sequence**	
conditioning: ON	Automatic conditioning of titration vessel.	ON, OFF
req.ident: OFF	Requests identification after start of titration.	ON, OFF
req.smpl size: ON	Requests sample size after start of titration.	ON, OFF
report: OFF	Selection of result report at the end of the titration.	full, short, OFF

Configuration

KF device settings.
Settings of RS232 interface.
Settings of peripheral units.
General settings.

Display *Initial value*	*Meaning*	*Input range*
>KF device settings	**KF device settings**	
limit KF reag. OFF ml **actual KF reag. 0 ml**	Counter for KF reagent (buffer capacity, reagent supply). Actual value of counter.	0...999 mL, OFF 0...999 mL
polarizer: I(pol) **I(pol) 50 µA** **EP 250 mV** **U(pol) 400 mV** **EP 25 µA**	Selection of polarization type. Polarization current (voltametrc indication). Corresponding end point voltage. Polarization voltage (amperometric indication). Corresponding end point current.	I(pol), U(pol) -127…127 µA -1500…1500 mV -1270…1270 mV -150…150 µA
filling rate max. ml/min	Filling rate after the titration.	0.01…150 mL/min, max.
>RS232 settings	**RS232-settings**	
baud rate: 9600	Baud rate.	300, 600,1200, 2400, 4800, 9600
data bit: 8	Data bit.	7, 8
stop bit: 1	Stop bit.	1, 2
parity: none	Parity.	none, odd, even
handshake: HWs	Handshake.	HWs, HWf, SWchar, SWline, none
RS control: ON	Receiving of commands via RS.	ON, OFF
>peripheral units	**Settings of peripheral units**	
send to: IBM	Selection of printer.	Epson, Seiko, IBM
balance: Sartorius	Selection of balance.	Sartorius, Mettler, AND, Precisa
record: U	Selection of record type to be outputted at the analog output.	V vs. t, dV/dt vs. t, U vs. t, -U vs. t
>auxiliaries	**General settings**	
dialog: english	Selection of dialog language.	english, deutsch, français, español
date YYYY-MM-DD **time HH:MM**		
run number 0	Current run number for result output.	0...999
electrode test: ON	Titration sequence with or without electrode test.	ON, OFF
display KFR vol.: ON	Result display with or without the final KFR volume.	ON, OFF
device label	Device label.	up to 8 ASCII characters
program 787.0010	Program version.	read only

Calculations

Input of the values for result and statistics calculations in the KFT mode.

- Not every request is active in the other modes.

Display	*Initial value*	*Meaning*	*Input range*
>calculation		**Values for result calculation**	
sample size	**1.0 g**	Sample size.	up to 6 digits: ±X.XXXXX
ident.		Sample identification.	up to 8 ASCII characters
titer	**5.0 mg/ml**	Titer.	0.0000…99.9991mg/mL
factor	**0.1**	Factor.	0…±1000000
divisor	**1.0**	Divisor, e.g. for density.	0…±1000000
blank	**0.0 ml**	Blank.	0.0000…99.9991mL
drift corr: **drift value**	**OFF** **0.0 µl/min**	Drift correction of KFR volume. Input of drift value for manual drift correction.	auto, man., OFF 0.0...99.9 µL/min
>statistics		**Statistics calculation**	
mean **res.tab:** **delete**	**n= OFF** **original** **n= 1**	Statistics with n single results. Result table for statistics calculation. Delete single result number n.	2...20, OFF original, delete n, delete all 1...20

Units

Choice of the units for sample size and result in mode KFT.

For the other modes the result unit is read only.

Display	*Initial value*	*Meaning*	*Input range*
result unit:	**%**	Unit of the result.	%, ppm, mg/mL, g, mg, mL, mg/pc, no unit
result unit:	**%;2**	Number of decimal places.	0...9
smpl size unit:	**g**	Unit of the sample size.	g, mg, mL, µL, pc, no unit

Calculation formula and units

The calculation formulas are preset and depend on the selected mode.

KFT

$$\text{water(content)} = \frac{(\text{volume(KFR)} - \text{blank}) \times \text{titer} \times \text{factor}}{|\text{smplsize}| \times \text{divisor}}$$

Factor and divisor are used for the conversion of the result to different units.

Unit of result	*Sample size in...*	*Factor*	*Divisor*
%	**g**	0.1	1
%	**mg**	100	1
%	**ml**	0.1	density of sample [g/mL]
ppm	**g**	1000	1
ppm	**ml**	1000	density of sample [g/mL]
ppm	**µl**	1	density of sample [g/mL]
mg/ml	**g**	1	density of sample [g/mL]
mg/ml	**ml**	1	1
mg	**1**	1	1
ml	**1**	1	1000 * density H_2O [g/mL] ≈ 1000
mg/pc	**pc**	1	1

TITER

$$\text{titer} = \frac{|\text{smplsize}| \times \text{factor}}{\text{volume(KFR)}}$$

The factor is used to enter the water content of the standard.

Standard used	*Sample size in...*	*Factor*
Water	**g**	1000
Water	**µl**	density H_2O [g/mL] ≈ 1
Methanol	**ml**	content of methanol [g/mL]
Methanol	**µl**	0.001 * content of methanol [g/mL]
$Na_2Tart*2H_2O$	**g**	156.6
$Na_2Tart*2H_2O$	**mg**	0.1566

BLANK

$$\text{blank} = \text{volume(KFR)} \times \text{factor}$$

If the blank is determined with an excessive solvent volume, the result can be converted to the amout used subsequently with the aid of the factor.