



The new HR83, HG63, and HB43 halogen moisture analyzers from METTLER TOLEDO.

Accurate, fast, and easy.

That's the weigh!



“Want to match a reference value?”

“We can do it!”

METTLER TOLEDO



“METTLER TOLEDO – where?” “Worldwide!”

You want results and complete accuracy. METTLER TOLEDO provides the answer, with utmost precision, also for water and moisture determination. Simple to operate, always efficient, and easily integrated into your quality management system. Reliability with global service and support.

Competence that brings confidence.

METTLER TOLEDO is the world's largest manufacturer of balances and scales for professional use. The company is also market leader for various complementary measurement technologies. Thousands of our products prove themselves in daily use. The reputation of METTLER TOLEDO in water and moisture determination is well known. The first-class range of service offerings provide the best performance and reliability for your instruments for many years.

Service for you.

Continuously high product quality requires systematic control of inspection, measuring, and test equipment. Through the largest service network in our industry worldwide, we offer you qualification of your instruments.

Global support.

METTLER TOLEDO has more than 8,000 employees worldwide. With its own sales and service companies in over 100 countries, METTLER TOLEDO ensures that you and your instruments are cared for by specialists. This applies from consulting, through application support, to fault correction.

DQ (Design Qualification)	Determine requirements according to specification.
IQ (Installation Qualification)	Correct, documented installation at the place of use.
OO (Operational Qualification)	Check and confirm the specified performance data.
PQ (Performance Qualification)	Demonstrate that the instrument continuously fulfills the purpose for which it is intended.
MQ (Maintenance Qualification)	Periodic maintenance work.

Request a detailed brochure on service from METTLER TOLEDO.



Diversity of moisture determination.

METTLER TOLEDO is unique in offering different techniques to measure moisture in various samples – ensuring the best method for your sample.



Know-how that's professional and practical.

Moisture determination is one of the most frequently performed analyses. You will find valuable background information about it in the specialist literature from METTLER TOLEDO. Do you need practical advice on specific applications? You will find a host of carefully worked-out methods available at www.mt.com/moisture



METTLER TOLEDO halogen drying.

With the establishment of halogen drying, METTLER TOLEDO has set the standard in thermogravimetric moisture determination. Whenever the moisture content of products is important in quality assurance, manufacturing or R&D, many companies use halogen moisture analyzers from METTLER TOLEDO.

More information at www.mt.com/moisture

METTLER TOLEDO differential weighing.

Moisture content can also be determined with the aid of a balance and samples dried in the oven. For this purpose the AX analytical balance is especially suitable. It has the differential weighing application built in as standard.

More information at www.mt.com/ax

METTLER TOLEDO thermal analysis.

Thermal analysis makes complex analyses possible even with minutest sample quantities. As well as highly accurate determination of moisture and other volatile components with a resolution as high as 0.1 µg, you can also quickly and simply determine additional parameters such as stability and oxidation behavior.

More information at www.mt.com/ta

Karl Fischer titration from METTLER TOLEDO.

For many substances, water determination by Karl Fischer is the reference method. With METTLER TOLEDO titrators you can determine water contents from a few ppm up to 100%. With excellent documentation and highly repeatable results. More information at www.mt.com/titration



"Perfect results?" "Certainly."

HR83

- Ultra-fast halogen drying
- Utmost precision and repeatability
- Fully automatic method development
- Sample identification with barcode reader
- Instrument check with test report
- Multi-level password protection
- Complying to regulations and guidelines



Area of use: where guidelines have to be achieved.

Need a measuring instrument which continues to fulfill the requirements in your company – not just when it's purchased, but for the years to come? For smooth integration into your operating processes, METTLER TOLEDO gives comprehensive support.

The moisture analyzer can be installed by your local service organization, and requalified with the aid of the professional log-book. Service, reliability, automatic method development, and well thought-out QM tools such as the integrated instrument check, the 3-level password protection, and traceable sample identification, make the HR83 the ideal instrument for use in areas, where working to SOP's and regulations is important.

Drying: fast and repeatable.

The circular halogen lamp and a gold-plated reflector ensure repeatable and fast heating of the sample. The halogen dryer from METTLER TOLEDO guarantees reliable moisture determination within a few minutes.

Measuring performance: precise.

The HR83 halogen moisture analyzer uses not just any weighing cell, but METTLER TOLEDO analytical weighing technology. The fourth decimal place is not displayed, but is measured and used in calculation of the highly precise results. This is an important advantage for the moisture determination of expensive substances, because the analysis can be performed even with smallest quantities.

Reliability: automatic.

Reliable results depend on correct methodology. The AutoMet function saves you time at the method development stage. Never before could you attain your reference value with such accuracy.



Password: security at all levels.

Password protection at three levels prevents unauthorized changing of parameters within the instrument. Access to the specific menus is only possible after correctly entering the correct passwords. Security at its maximum.

**Instrument check:
fully documented.**

The integrated instrument check guarantees complete traceability. The weight used, the temperature, and the tolerances meet your individual specifications. A unique feature is the heating-module test with a clear indication of whether the instrument is operating within the specification at the temperature you selected. A clever solution, exclusive to METTLER TOLEDO.

```

-- DRYER UNIT TEST 1 --
09/18/2003      18:42

METTLER-TOLEDO
Halogen Moisture Analyzer
Type#          HR83
SN#            1113143897
SM#            1.92

Adjustment set ID:

.....
Set Temperature: 65 °C
Act. Temperature: 64 °C
Tolerance:      +/- 3 °C

Test result:
Passed

Test performed
User signature:

.....
----- EHD -----
    
```

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-MOISTURE DETERMINATION-

PHARMA CO.
LABORATORY 124

METTLER-TOLEDO
Halogen Moisture Analyzer
Type#          HR83
SN#            1113143294
SM#            1.92
Balance Adjustment 2
Dryer Unit Adjusts. 3

Measurement      3
Method#
01               HEFENAMIN
C1: PRODUCTION LINE A1
C2: CHARGE 394
C3: AFTER PURIFICATION
C4: BOB MILLER
Switchoff mode   F
                  1 mg / 45 sec
Standard drying
Drying temp.    105 °C
Display         0...-100 %MC
Wet weight      5.800 g

0:30 min        -8.44 %MC
1:00 min        -8.64 %MC
1:30 min        -8.76 %MC
2:00 min        -8.86 %MC
2:30 min        -8.92 %MC
3:00 min        -8.98 %MC

Total time      3:26 min
Dry weight      4.950 g
Moisture        8.850 g

End result      -1.00 %MC
User signature:

.....
-----09/08/03-----21:41-----
    
```

Reports:

GLP/GMP-compliant.

The reports make it possible to establish at any time how, when, and by whom a moisture determination was performed. The details of the printout, and the traceability, are determined by you.



**Sample identification:
traceable.**

For user-specific texts there are up to four comment lines available. They can be input with a barcode reader. This ensures accurate sample identification.

“Matching a reference method?” “Completely automatic.”



- AutoMet for easy method development
- Ability to match the reference value
- Efficient transfer of methods from older instruments

AutoMet puts methods in their place.

Select the AutoMet function, key in the reference value. The HR83 swiftly calculates optimum switch-off criteria. You can save these parameters as a method. Developing methods with AutoMet is especially helpful when an existing reference value must be matched to the last decimal place.

Completely automatic.

Different from other instruments, AutoMet determines the appropriate parameters completely automatically to match the reference method. You specify the maximum measuring time and leave the work to the HR83.

AutoMet increases efficiency.

Using the optimized method you work faster and more accurately. AutoMet can efficiently develop and save up to 40 methods and reactivate them at a keystroke. AutoMet can save you time in any area, where many different products are analyzed for their moisture content.

Method development.

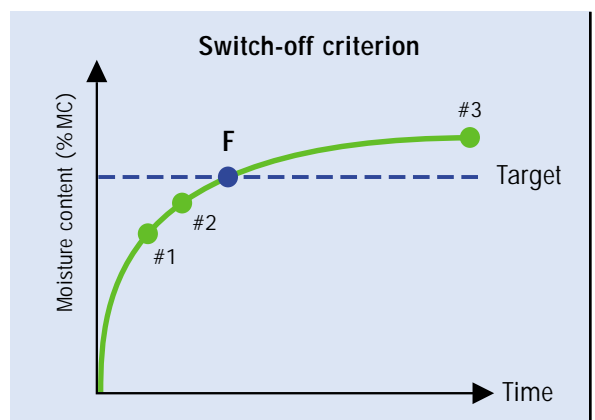
With AutoMet you can immediately check whether the selected temperature setting is suitable for your sample. Developing methods brings you practical solutions.

HR83



AutoMet hits the target and obtains a result which matches the reference value.

Reference value to be achieved. The HR83 determines the ideal switch-off criterion (F) completely automatically. Thanks to AutoMet you save time and optimize the method.



Target

Start

→O/T←



1

You key in the target value and the method is developed automatically.



2

AutoMet determines the optimal switch-off criterion based on the target value.



3

After the test measurement you can save the new method at a keystroke.



Thanks to AutoMet, the HR83 analyzes your samples quickly and precisely.

Seamless conversion from old to new.

AutoMet is a practical tool for efficiently transferring methods from older instruments. For example, the temperature setting is specified in an SOP. AutoMet determines a switch-off criterion for this temperature. Transfer is simple, quick, and cost effective.

“Reliable routine?” “One measurement after another.”

HG63

high repeatability, precise results, clear operation.



1

Insert sample holder. The sample drawer opens and closes at a keystroke.



2

Press “Start”, the drawer closes automatically, the measurement begins.



3

Read and/or print the result.

Ideal for routine applications.

Need to measure the moisture content as fast as possible? The halogen technology of the HG63 moisture analyzer brings big time savings. You can expect efficiency and excellent repeatability, even for smallest sample quantities. The instrument adapts itself to your specific requirements at a key-stroke. Up to 10 methods can be called up by direct access. The automatic drawer and practical sample holder make your routine work even more efficient.

Operation with overview.

Need an easy-to-read display? The extra large and brightly lit display allows you to read all relevant information under any light conditions. At the same time, your results are automatically exported to the integrated printer.

Flexible and practical.

Special samples? For individual solutions a free factor and flexible switch-off criterion are available. The comment line can be used to add extra information to your measurements.



simple,
rugged,
proven in
production.

HB43



Hot.

The target temperature is reached rapidly. The precisely regulated halogen technology makes your moisture determination reliable.

Rugged.

Thanks to its rugged construction, the HB43 has proved itself consistently of times over in the production environment as well as for standardized analyses.

Simple.

Large keys giving direct access to the main functions make operation self-explanatory. Your parameters can be protected by locking the keypad.

Fast.

Analyses in production are often urgent. For this reason, the HB43 has a predefined fast-drying program.

Clean.

In case something goes where it shouldn't: flat surfaces and the freely accessible sample chamber make cleaning easy.

The integral interface allows connection to an external printer or computer.



“Which solution?” “Only the right one.”



	HR83	HG63	HB43
Measurement values			
Readability	0.01%	0.01%	0.01%
Repeatability (sd) with 2 g sample	0.10%	0.10%	0.15%
Repeatability (sd) with 10 g sample	0.02%	0.02%	0.03%
Evaluation			
Moisture content in %	•	•	•
Dry content in %	•	•	•
Dry content in g	•	•	•
Calculation based on dry weight	•	•	•
Statistics function	Can be activated	–	–
Journal function	Can be activated	–	–
Balance			
Max. sample weight	81 g	61 g	41 g
Min. sample weight	0.1 g	0.1 g	0.5 g
Readability	1 mg	1 mg	1 mg
Drying unit			
Technology	Halogen	Halogen	Halogen
Temperature range	40–200 °C	40–200 °C	50–200 °C
Adjustment increments	1 °C	1 °C	5 °C
Temperature programs	4	2	2
Switch-off			
Time controlled (minutes)	1–480	1–480	1–480
Automatic (in 5 steps)	•	•	•
Freely selectable for each method	•	•	•
User support			
Automatic method development	AutoMet	Test function	–
Automatic sample chamber	•	•	Manual
Method memory	40	10	1
Method designation (alphanumeric)	•	–	–
Comment lines (alpha numeric)	4	1	–
Serial number	•	–	–
Free factor	•	•	–
Method linking	•	–	–
Standby temperature	•	–	–
LC display (backlit)	•	•	•
Printer	Can be built in	Can be built in	External
Interface	LocalCan / opt. RS232	LocalCan / opt. RS232	RS232
Barcode reader	optional	–	–
Quality management			
Balance test	0.1 g to 80 g	50 g	20 g
Heating module test (100 °C / 160 °C)	•	•	–
Heating module test at freely selectable temp.	50 °C to 180 °C	–	–
Weighing-in guide	Active / passive	Active / passive	–
Password	3-level	–	–
Change protection	•	•	•
GLP / GMP-compliant printouts	•	•	•

The temperature adjustment set with test certificate ensures identical drying characteristics throughout the entire life of your moisture analyzer.



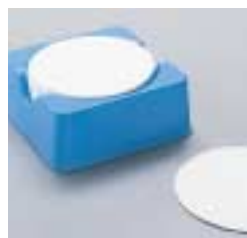
For every application the right accessory.

The logbook for the HR83 moisture analyzer completely documents the qualification of your moisture analyzer. Your METTLER TOLEDO organization can give you further details.

	MT part no.	Remarks	Application
Sample handling (∅90 mm)			
Sample-pan handler, HA-PH	214526	Set of 3	HR/HG/HB
Aluminum sample pan, HA-D90	13865	Set of 80	HR/HG/HB
Prof. aluminum sample pan (extra strong)	11113863	Set of 80	HR/HG/HB
Reusable sample pan (steel, height 6 mm) HA-DR1	214462	Set of 3	HR/HG/HB
Reusable sample pan (steel, height 15 mm)	13954		HR/HG/HB
Textile weighing pan, HA-CAGE (gold cage for voluminous samples)	214695		HR/HG
Glass-fiber disks, HA-F1	214464	Set of 100	HR/HG/HB
Printers			
Built-in printer, HA-P43 (built into HR83-P, HG63-P)	214456		HR/HG
Printer, RS-P42	229170		HB
Printer ribbon, black	65975	Set of 2	HR/HG/HB
Printer paper	72456	Set of 5 rolls	HR/HG/HB
Printer paper (self-adhesive)	11600388		HR/HG/HB
Quality management			
Temperature adjustment set, HA-TC (without test certificate)	214455	40 °C to 200 °C	HR/HG/HB
Temperature adjustment set, HA-TCC (incl. retraceable test certificate at 50°C, 100°C, 160°C)	214528	40 °C to 200 °C	HR/HG/HB
Recalibration, HA-TCCRe (incl. retraceable test certificate at 50°C, 100°C, 160°C)	214534	40 °C to 200 °C	HR/HG/HB
Adjustment weight 50 g (Class F1)	15865		HR/HG
Adjustment weight 20 g (Class F1)	158640		HB
Accessories			
Barcode reader (with cable)	21900879/2190094/229065		HR
110 V model	21900883		HR
230 V model	21900882		HR
Chemical-resistant protective cover	214533	Set of 2	HR/HG
Transport case	214515		HR/HG
Interface cable LC-RS25 (RS232/25 pole)	229050		HR/HG
Interface cable LC-RS9 (RS232/9 pole)	229065		HR/HG
Chemical-resistant protective cover	1113363	Set of 2	HB
Transport case	11113855		HB
Antitheft device (steel cord with lock)	11600361		HB
Interface cable RS9-RS9 (m/f, length 1 m)	11101051		HB



Thanks to its perfect surface finish, the aluminum sample pan is suitable for all common applications. For difficult samples there is a specially strong version. Both are available in sets of 80 pans.



The absorbent glass-fiber filter is suitable for homogeneous distribution of liquid or pasty samples. This allows further reduction in analysis times.



The gold-plated cage is the ideal solution for voluminous samples such as textiles.

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More information?

We will be pleased to provide complete information about the METTLER TOLEDO halogen moisture analyzers. Or to show you personally why one of the three moisture analyzers is the only right solution for you.

Call us.

We'll be pleased to arrange a demonstration or send you further documentation.

Visit www.mt.com

You'll find more information about the products and METTLER TOLEDO.

The new HR83, HG63, and HB43 halogen moisture analyzers from METTLER TOLEDO.

Accurate, fast, and simple.

That's the weigh!



Quality certification. Development, production and auditing in accordance with ISO9001. Environmental management system in accordance with ISO14001.

Worldwide service. Our dense service network, among the best in the world, ensures the maximum availability and lifespan of your product.

"Conformité Européenne".

This label is your guarantee that our products conform to the latest guidelines.

On the Internet. You can find important information about our products and services, as well as our company, quickly and easily at <http://www.mt.com>

www.mt.com