

METTLER TOLEDO

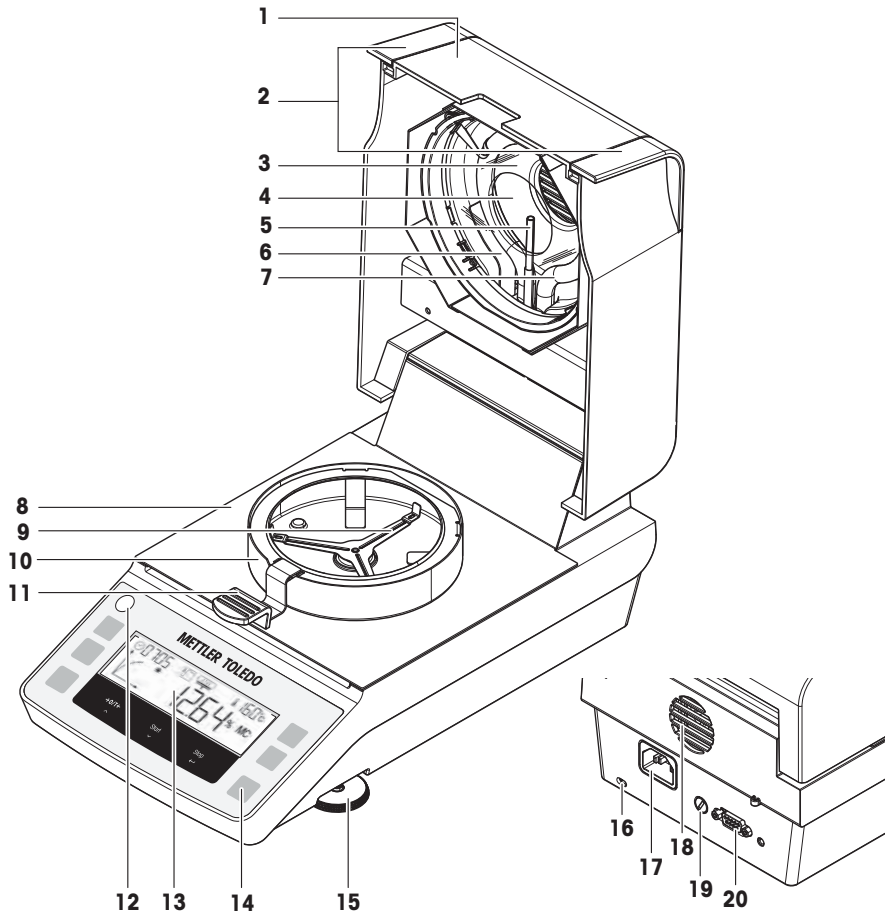


This User Manual provides brief instructions about the first steps to take with the instrument. This ensures safe and efficient handling. Personnel must have carefully read and understood this manual before performing any task.

For full information, always refer to the Reference Manual (RM).

► www.mt.com/HE53-RM

Overview moisture analyzer



1	Lid	2	Handles for opening the lid
3	Protective glass	4	Reflector
5	Temperature sensor	6	Temperature overload protection
7	Halogen lamp	8	Sample chamber
9	Sample pan holder	10	Draft shield
11	Sample pan handler	12	Level indicator
13	Display	14	Operation keys
15	Leveling foot	16	Slot for anti-theft purposes
17	Power supply socket	18	Fan
19	Power line fuse	20	RS232C serial interface

Overview terminal



	Name	Behavior in general	Behavior during drying process	Behavior in menu mode
	Unit	Set the default display mode.	Toggle the display mode.	–
Menu	Menu	Enter user menu.	–	Scroll in level 1.
	– On – Off	– Switch on. – Switch to standby mode.	Switch to standby mode.	
	– Zero or tare – Up	Execute zero or tare.	–	Scroll to previous item.
	– Start – Down	Start drying process.	–	Scroll to next item.
	– Stop – Enter	–	Stop drying process.	– Confirm current item. – Down one level.
	– Print – Cancel / Exit	Print the parameters and settings.	Print the intermediate value.	Up one level.
	Switch-off criterion	Set switch-off criterion.	Display switch-off criteria (auto or preset time) for 2 seconds.	–
	Temperature	Set drying temperature.	Display preset temperature for 2 seconds.	–

Table of Contents

1	Introduction	3
1.1	Further documents and information	3
1.2	Acronyms and abbreviations	3
1.3	Compliance information	3
2	Safety Information	4
2.1	Definition of signal words and warnings symbols	4
2.2	Product-specific safety notes	4
3	Design and Function	6
3.1	Overview	6
3.2	Display	7
3.2.1	Overview display areas	7
3.2.2	Icons	7
3.2.3	Progress indicator	8
3.2.4	User guidance.....	8
4	Installation and Putting into Operation	9
4.1	Selecting the location	9
4.2	Unpacking the moisture analyzer	10
4.3	Scope of delivery	10
4.4	Installation	10
4.5	Putting into operation	11
4.5.1	Connecting the instrument	11
4.5.2	Switching on the instrument.....	11
4.5.3	Leveling the instrument	11
4.5.4	Performing a function check	12
4.5.4.1	Performing the check	12
4.5.4.2	Evaluating the test results	13
4.5.4.3	Taking measures after a failed test.....	13
4.5.5	Setting the instrument to standby mode.....	14
4.5.6	Switching off the instrument.....	14
4.6	Performing a simple measurement.....	14
4.6.1	Opening and closing the lid	14
4.6.2	Taring the instrument	14
4.6.3	Performing a measurement	15
4.6.4	Completing the measurement	15
4.7	Transporting, packing, and storing.....	16
4.7.1	Transporting over short distances.....	16
4.7.2	Transporting over long distances.....	16
4.7.3	Packing and storing	16
5	Maintenance	17
5.1	Maintenance tasks	17
5.2	Cleaning	17
5.2.1	Disassembling for cleaning	18
5.2.1.1	Disassembling the sample chamber	18
5.2.1.2	Disassembling the protective glass	18
5.2.2	Cleaning the instrument	19
5.2.3	Putting into operation after cleaning.....	19
5.3	Replacing the power line fuse	19
6	Technical Data	20
6.1	General data	20

1 Introduction

Thank you for purchasing a halogen moisture analyzer from METTLER TOLEDO. The moisture analyzer combines high performance with ease of use.

This document is based on the software version V1.13.

EULA

The software in this product is licensed under the METTLER TOLEDO End User License Agreement (EULA) for Software.

► www.mt.com/EULA

When using this product you agree to the terms of the EULA.

1.1 Further documents and information

This document is available in other languages online.

► www.mt.com/moisture

Search for documents

► www.mt.com/library

For further questions, please contact your authorized METTLER TOLEDO dealer or service representative.

► www.mt.com/contact

1.2 Acronyms and abbreviations

Original term	Explanation
AC	Alternating Current
DC	Direct Current
EMC	Electromagnetic Compatibility
FCC	Federal Communications Commission
RM	Reference Manual
SNR	Serial Number
SOP	Standard Operating Procedure
UM	User Manual
USB	Universal Serial Bus

1.3 Compliance information

National approval documents, e.g., the FCC Supplier Declaration of Conformity, are available online and/or included in the packaging.

► <http://www.mt.com/ComplianceSearch>

Contact METTLER TOLEDO for questions about the country-specific compliance of your instrument.

► www.mt.com/contact

United States of America

This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canada

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

2 Safety Information

Two documents named "User Manual" and "Reference Manual" are available for this instrument.

- The User Manual is printed and delivered with the instrument.
- The electronic Reference Manual contains a full description of the instrument and its use.
- Keep both documents for future reference.
- Include both documents if you transfer the instrument to other parties.

Only use the instrument according to the User Manual and the Reference Manual. If you do not use the instrument according to these documents or if the instrument is modified, the safety of the instrument may be impaired and Mettler-Toledo GmbH assumes no liability.

2.1 Definition of signal words and warnings symbols

Safety notes contain important information on safety issues. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results. Safety notes are marked with the following signal words and warning symbols:

Signal words

DANGER	A hazardous situation with high risk, resulting in death or severe injury if not avoided.
WARNING	A hazardous situation with medium risk, possibly resulting in death or severe injury if not avoided.
CAUTION	A hazardous situation with low risk, resulting in minor or moderate injury if not avoided.
NOTICE	A hazardous situation with low risk, resulting in damage to the instrument, other material damage, malfunctions and erroneous results, or loss of data.

Warning symbols



General hazard



Hot surface



Notice

2.2 Product-specific safety notes

Intended use

This instrument is designed to be used by trained staff. The instrument is intended for determining the weight loss during drying of samples.

Any other type of use and operation beyond the limits of use stated by Mettler-Toledo GmbH without consent from Mettler-Toledo GmbH is considered as not intended.

Moisture determination applications must be optimized and validated by the user according to local regulations. Application-specific data provided by METTLER TOLEDO is intended for guidance only.

Responsibilities of the instrument owner

The instrument owner is the person holding the legal title to the instrument and who uses the instrument or authorizes any person to use it, or the person who is deemed by law to be the operator of the instrument. The instrument owner is responsible for the safety of all users of the instrument and third parties.

Mettler-Toledo GmbH assumes that the instrument owner trains users to safely use the instrument in their workplace and deal with potential hazards. Mettler-Toledo GmbH assumes that the instrument owner provides the necessary protective gear.

Safety notes



WARNING

Death or serious injury due to electric shock

Contact with parts that carry a live current can lead to injury and death. If the instrument cannot be shut down in an emergency situation, people can be injured and the instrument can be damaged.

- 1 Check that the voltage printed on the instrument is the same as your local power supply voltage. If this is not the case, under no circumstances connect the instrument to the power supply, but contact a METTLER TOLEDO representative.
- 2 Only use the three-core power cable with equipment grounding conductor supplied by METTLER TOLEDO to connect your instrument.
- 3 Only connect it to a three-pin power socket with earthing contact.
- 4 Only use standardized extension cables with equipment grounding conductor for operating the instrument.
- 5 Make sure that the power plug is accessible at all times.
- 6 Arrange the cables so that they cannot be damaged or interfere with the operation.
- 7 Keep all electrical cables and connections away from liquids.



WARNING

Injury or death due to toxic or corrosive substances

Heating up toxic or corrosive substances, e.g., acids, can result in toxic or corrosive vapors that can cause injuries if they come in contact with the skin or the eyes or if they are inhaled.

- 1 When using chemicals and solvents, comply with the instructions of the manufacturer and the general laboratory safety rules.
- 2 Set up the instrument in a well-ventilated location.
- 3 When using dry substances that form toxic gases, place the instrument in a fume hood.



WARNING

Death or serious injuries due to flammable solvents

Flammable solvents in the vicinity of the instrument can ignite and lead to fire and explosions.

- 1 Keep flammable solvents away from the instrument.
- 2 When using chemicals and solvents, comply with the instructions of the manufacturer and the general laboratory safety rules.



CAUTION

Burns due to hot surfaces

During operation, parts of the instrument can reach temperatures that can cause burns if touched.

- 1 Do not touch the area marked with the warning symbol.
- 2 Ensure sufficient free space around the instrument to avoid heat accumulation and overheating (approx. 1 m free space above the heating module).
- 3 Never cover, tape or clog the vent over the sample chamber. Do not tamper with the vent in any other way.
- 4 Exercise caution when removing a sample. The sample itself, the sample chamber, the draft shield and the sample pan may be very hot.
- 5 Do not open the heating module during operation. Always let it cool down completely before opening.
- 6 Do not modify the heating module in any way.



NOTICE

Damage to the instrument due to corrosive substances and vapors

Corrosive substances and corrosive vapors can damage the instrument.

- 1 When using chemicals and solvents, comply with the instructions of the manufacturer and the general laboratory safety rules.
- 2 Ensure that the instrument parts touching your sample substance can not get altered by it.
- 3 Wipe off any condensation of corrosive vapours after an operation.
- 4 Work with small samples.



NOTICE

Damage to the instrument or malfunction due to the use of unsuitable parts

- Only use parts from METTLER TOLEDO that are intended to be used with your instrument.

A list of spare parts and accessories can be found in the Reference Manual.

3 Design and Function



For further information, consult the Reference Manual (RM).

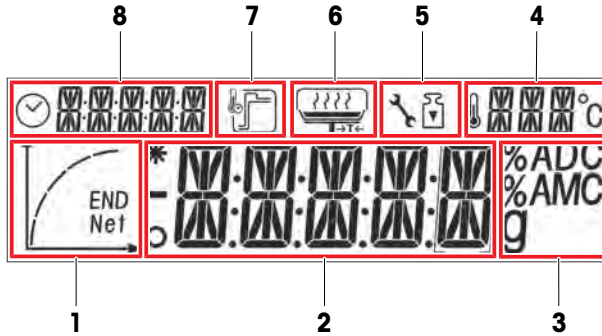
► www.mt.com/HE53-RM

3.1 Overview

See the sections "Overview" (graphics and legend) at the very beginning of this manual.

3.2 Display

3.2.1 Overview display areas





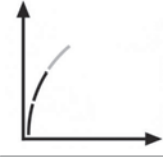
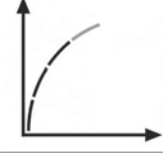
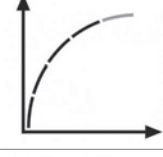
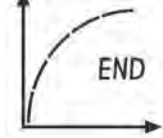
1	Progress indicator area	2	Main area
3	Unit area	4	Temperature area
5	Service / adjustment area	6	User guidance area
7	Heating mode area	8	Switch-off and time area

3.2.2 Icons

Icon	Function	Icon	Function
	Indicates unstable values		Drying temperature
	Indicates calculated values		Temperature unit
	Indicates negative values		Service mode (only relevant for service technician)
	Switch-off criteria: automatic or timed		Weight adjustment
	Drying mode «Standard»		User guidance
	Drying mode «Rapid»		Progress indicator
END	End of moisture determination		


3.2.3 Progress indicator




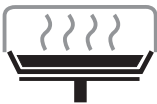
The progress indicator shows the progress of the drying process.

Status	Diagram	Automatic Switch-off	Timed Switch-off
1		The drying process starts.	The drying process starts.
2		After 30 seconds.	After 1/5 of time.
3		After 1 minute.	After 2/5 of time.
4		When mean weight loss is 1 mg per 15 seconds.	After 3/5 of time.
5		When mean weight loss is 1 mg per 30 seconds.	After 4/5 of time.
6		When auto-switch-off is reached. The result and END is displayed.	The total time is reached. The result and END is displayed.

3.2.4 User guidance

The user guidance icons lead through the drying process step by step. When the icon flashes, the next step can be performed.

Icon	Status	Explanation
	-	Place the empty sample pan and execute a tare. Note Tare is only possible with the lid closed.

Icon	Status	Explanation
	Ready for measurement	Place the sample on the sample pan.
	–	Close the lid.
	Ready for start	Start the measurement.
	Measurement was started with the lid still open.	Close the lid.
no icon	–	Measurement is running or completed. No action is required from the user.

4 Installation and Putting into Operation

4.1 Selecting the location

A moisture analyzer is a sensitive precision instrument. The location where it is placed will have a profound effect on the accuracy of the results.

Requirements of the location

Place indoors on stable table

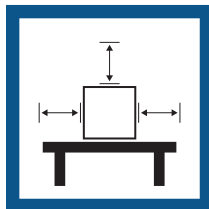
Ensure sufficient spacing

Level the instrument

Provide adequate lighting table



Avoid direct sunlight



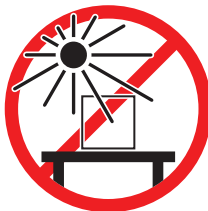
Avoid vibrations



Avoid strong drafts



Avoid temperature fluctuations



Take into account the environmental conditions. See "Technical Data".

Sufficient spacing for moisture analyzers: > 15 cm next to the instrument, > 1 m above the lid.

4.2 Unpacking the moisture analyzer

Check the package, the packaging elements and the delivered components for damages. If any components are damaged, please contact your METTLER TOLEDO service representative.

See also

📖 Transporting, packing, and storing ▶ Page 16

4.3 Scope of delivery

Moisture analyzer

- Drying unit
- Draft shield (1)
- Sample handler
- Sample pan holder
- Country-specific power cable
- Country-specific spare fuse

Documentation

- User Manual
- Guide to Moisture Analysis
- Declaration of Conformity

Accessories

- Aluminium sample pans, 80 pcs
- Specimen sample (glass fiber filter)
- In-use cover
- SmartCal samples, 2 pcs

4.4 Installation



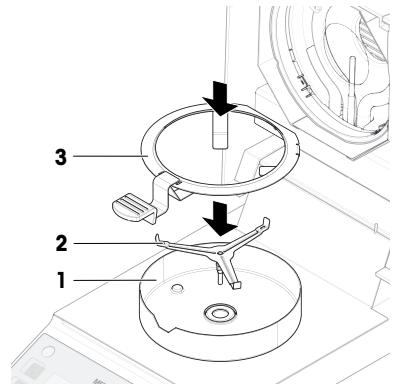
NOTICE

Erroneous results due to incorrect use of the sample pan handler

Incorrect handling of the sample and sample pans can cause erroneous results.

- Always set the sample pan handler correctly and carefully onto sample pan holder.

- 1 Open the lid.
- 2 Place the draft shield (1). Only one position is possible.
- 3 Place the sample pan holder (2). Turn the sample pan holder until it engages in the correct position.
- 4 Place the sample pan handler (3).



4.5 Putting into operation

4.5.1 Connecting the instrument

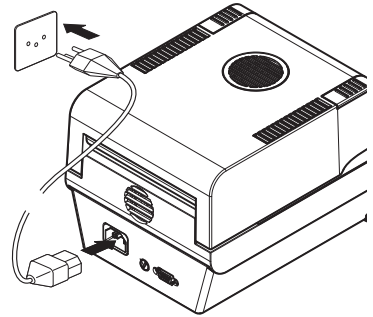


WARNING

Death or serious injury due to electric shock

Contact with parts that carry a live current can lead to death or injury.

- 1 Only use the METTLER TOLEDO power cable designed for your instrument.
 - 2 Connect the power cable to a grounded power outlet.
 - 3 Keep all electrical cables and connections away from liquids and moisture.
 - 4 Check the cables and the power plug for damage and replace them if damaged.
-
- 1 Install the cables in such a way that they cannot be damaged or interfere with operation.
 - 2 Insert the plug of the AC/DC adapter in the power inlet of the instrument.
 - 3 Insert the plug of the power cable into a grounded power outlet that is easily accessible.



Note

Do not connect the instrument to a power outlet controlled by a switch. After switching on the instrument, it must warm up before giving accurate results.

See also

General data ▶ Page 20

4.5.2 Switching on the instrument

Warming up

Before the moisture analyzer gives reliable results, it must warm up. This takes at least 1 hour after connecting the instrument. When the instrument is switched on from standby, it is ready immediately.

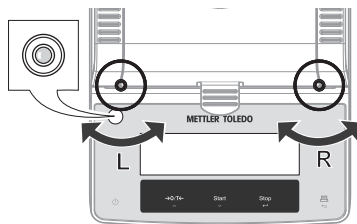
- 1 Instrument is connected to the power supply.
- 2 To switch on, press [⏻].
 - ➔ The display lights up.
 - ➔ Instrument is ready to use.

4.5.3 Leveling the instrument

Exact horizontal positioning and stable installation are prerequisites for repeatable and accurate results. To compensate for small irregularities or inclinations ($\pm 2\%$) at the location, the instrument must be leveled.

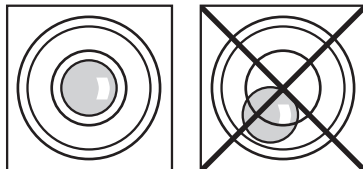
The instrument should be re-leveled each time its location is changed.

For exact horizontal positioning, the instrument has a level indicator (level) and two leveling screws. When the air bubble in the level indicator is exactly in the center, the instrument is precisely level. To level it, proceed as follows:



- 1 Position the instrument at the selected location.
- 2 Turn the two leveling feet until the air bubble is in the center of the level indicator.

L = left foot
R = right foot



Air bubble at 12 o'clock:



turn both feet clockwise.



Air bubble at 3 o'clock:



turn left foot clockwise, right foot counter-clockwise.



Air bubble at 6 o'clock:



turn both feet counterclockwise.



Air bubble at 9 o'clock:



turn left foot counterclockwise, right foot clockwise.



4.5.4 Performing a function check

After installation, test the correct function of the moisture analyzer with a SmartCal test. Two SmartCal samples are included in the delivery.

A SmartCal test is a quick and integral test of the instrument functions. SmartCal™ is a granular test substance whose moisture content value, when heated at a specific temperature for a specific time, is precisely defined. By performing a measurement with SmartCal™ and comparing the results to the control limits, it can be tested if both the integrated balance as well as the temperature sensor work well together and if the instrument functions correctly.

However, SmartCal tests do not supersede the recommended periodic weight or temperature tests.



For further information on SmartCal, consult the product page.

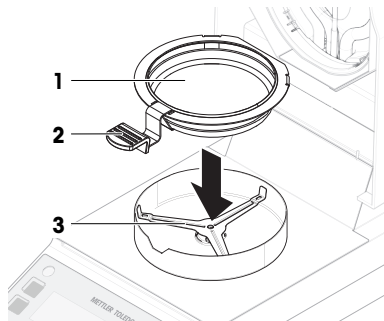
www.mt.com/smartcal

4.5.4.1 Performing the check

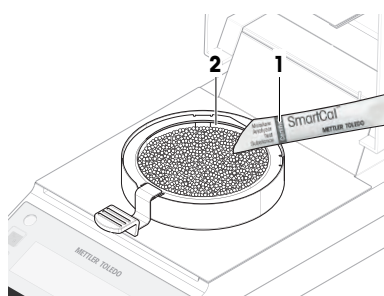
- The instrument is at room temperature.

- 1 Press [↓].
- 2 Use [^] or [v] to set the temperature to 70 °C, 100 °C, 130 °C, or 160 °C. Select the temperature that most closely matches your application.
- 3 Confirm your entry with [←].
- 4 Press [☺].
- 5 Use [^] or [v] to select **TIMED**.

- 6 Use [] or [] to set the switch-off time to 10 minutes.
- 7 Confirm your entry with [].
- 8 Open the lid.
- 9 Place the empty sample pan (1) in the sample pan handler (2).
- 10 Place the sample pan handler (3) in the draft shield. Make sure that the tongue of the sample pan handler lies exactly in the slot of the draft shield. The pan must lie flat in the pan holder.
- 11 Close the lid.
- 12 Press [0/T \leftarrow].
 - ➔ The instrument is tared.



- 13 Remove a SmartCal stick (1) from the blister pack, open it and distribute the whole content evenly over the sample pan (2). If necessary, carefully rotate and tilt the sample pan until it is fully and uniformly covered with granulate.
- 14 Press [**Start**] to start the measurement.
 - ➔ The test measurement starts.



4.5.4.2 Evaluating the test results

Compare the SmartCal test result with the control limits below and evaluate whether the result exceeds the defined control limits.

Drying temperature	SmartCal
70 °C	3.2...4.4 %MC _N
100 °C	5.2...6.4 %MC _N
130 °C	7.4...8.8 %MC _N
160 °C	9.9...11.7 %MC _N

MC_N = Normalized moisture content (Calculated value in consideration of temperature and humidity).

4.5.4.3 Taking measures after a failed test

In case of a failed test, take the following measures:

- 1 After the instrument has cooled down, repeat the test and ensure that all steps have been carried out correctly.
- 2 If the failure persists, perform a weight adjustment first.
- 3 Perform another SmartCal test and, if the failure persists, perform a temperature adjustment.
- 4 If the failure persists, see "Troubleshooting".



For further information on tests and adjustments, consult the Reference Manual (RM).

► www.mt.com/HE53-RM

4.5.5 Setting the instrument to standby mode

The instrument can be set to standby by pressing **⏻**. Exit the standby by pressing **⏻** again.

4.5.6 Switching off the instrument

To completely switch off the instrument, it must be disconnected from the power supply.

By pressing **⏻**, the instrument is only set to standby.

4.6 Performing a simple measurement

Use the supplied specimen sample (absorbent glass fiber filter) for the first measurement.

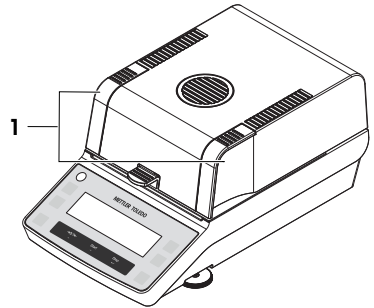
If a function test was performed before the first measurement, the temperature and switch-off criterion must be reset to factory setting:

- **TEMP**: 105° C
- Switch-off criterion: **AUTO**

If no function test was performed, no settings need to be changed.


4.6.1 Opening and closing the lid

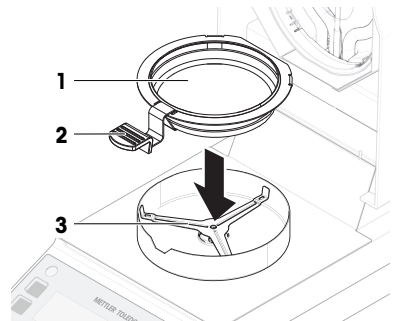
- To open the lid, lift it by the opening handles **(1)**.



4.6.2 Taring the instrument

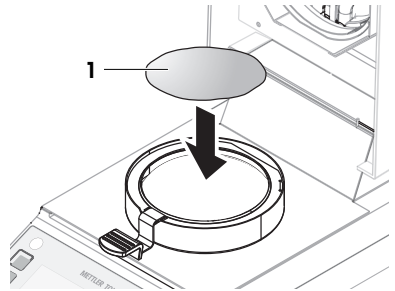
Before a subsequent measurement, the instrument must be tared.

- 1 Open the lid.
 - ➔ The user guidance icon  prompts you to place the empty sample pan.
- 2 Place the empty sample pan **(1)** in the sample pan handler **(2)**.
- 3 Place the sample pan handler **(3)** in the draft shield. Make sure that the tongue of the sample pan handler lies exactly in the slot of the draft shield. The pan must lie flat in the pan holder.
- 4 Close the lid.
- 5 Press **[→0/T←]**.
 - ➔ The instrument is tared.



4.6.3 Performing a measurement

- 1 Open the lid.
- 2 Place the glass fiber filter (1) in the sample pan.



- 3 Wet the specimen sample with a few drops of water until the displayed weight is at least 0.5 g (required minimum weight of sample).

 **Note**

The drying process cannot start until the minimum sample weight is reached.

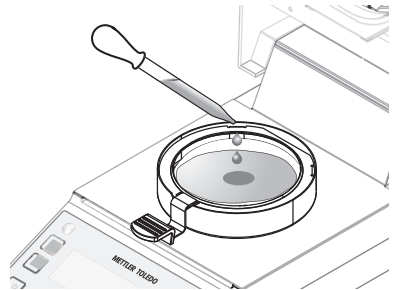
⇒ The user guidance icon  prompts you to close the lid.

- 4 Close the lid.
- 5 Press [**Start**] to start the measurement.

⇒ The display shows the following during the measurement:

- state of the drying progress (progress indicator).
- current temperature in the sample chamber.
- elapsed time since the start of the measurement process.
- current result in the chosen display mode.

⇒ When the measurement is finished, the progress indicator shows **END**.



4.6.4 Completing the measurement



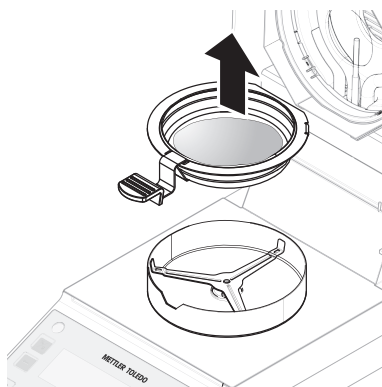
 **CAUTION**

Burns due to hot surfaces

The sample, sample pan and other parts inside the sample chamber may still be hot and can cause injuries if touched.

- 1 Do not touch the housing where it's marked with the warning symbol.
- 2 Only remove the sample pan using the sample pan handler.

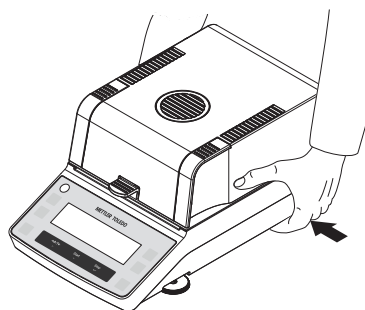
- The measurement is finished.
- 1 Open the lid.
 - 2 Remove the sample pan handler from the sample chamber.
 - 3 To remove the sample pan from the handler, lift the pan slightly from below and pull it sideways out of the handler.
- If you no longer need the sample and the pan, tilt the handler until the pan slides out.



4.7 Transporting, packing, and storing

4.7.1 Transporting over short distances

- 1 Disconnect the AC/DC adapter and unplug all interface cables.
 - 2 Hold the moisture analyzer with both hands and carry it in horizontal position to the target location. Consider the requirements of the location.
- To put the moisture analyzer back into operation, proceed as follows:
- 1 Connect in reverse order.
 - 2 Give the moisture analyzer sufficient time to warm up.
 - 3 Level the moisture analyzer.
 - 4 Perform tests and, if necessary, adjustments.



See also

- 📄 Selecting the location ▶ Page 9
- 📄 Switching on the instrument ▶ Page 11
- 📄 Leveling the instrument ▶ Page 11

4.7.2 Transporting over long distances

For transporting the moisture analyzer over long distances, always use the original packaging.

4.7.3 Packing and storing

Packing the moisture analyzer

Store all parts of the packaging in a safe place. The elements of the original packaging are developed specifically for the moisture analyzer and its components, and ensures optimal protection during transportation and storage.

Storing the moisture analyzer


Store the moisture analyzer under following conditions:

- Indoor and in the original packaging.
- According to the environmental condition, see "Technical data".

📄 Note

When storing for longer than six months, the rechargeable battery may be down (date and time get lost).

See also

 General data ▶ Page 20

5 Maintenance

To guarantee the functionality of the moisture analyzer and the accuracy of the results, a number of maintenance actions must be performed by the user.



For further information, consult the Reference Manual (RM).


▶ www.mt.com/HE53-RM

5.1 Maintenance tasks

Maintenance action	Recommended interval	Remarks
Cleaning	<ul style="list-style-type: none">• After every use• After changing the sample• Depending on the degree of pollution• Depending on your internal regulations (SOP)	see "Cleaning"
Performing a routine SmartCal test	<ul style="list-style-type: none">• After cleaning	see "Test" in the Reference Manual
Performing adjustments (weight adjustment, temperature adjustment)	<ul style="list-style-type: none">• After changing the location• If a test indicates that an adjustment is needed	see "Adjustments" in the Reference Manual
Replacing the power line fuse	<ul style="list-style-type: none">• If the fuse is blown	see "Replacing the power line fuse"

See also

 Replacing the power line fuse ▶ Page 19

 Cleaning ▶ Page 17

5.2 Cleaning



CAUTION

Burns due to hot surfaces

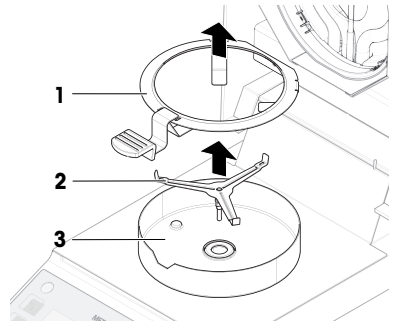
The interior parts of the heating module as well as the parts in the sample chamber can reach temperatures that can cause injuries if touched.

- Wait until the heating module has cooled down completely before performing any maintenance task.

5.2.1 Disassembling for cleaning

5.2.1.1 Disassembling the sample chamber

- The moisture analyzer is switched off.
- 1 Open the lid.
- 2 Remove the sample pan handler (1).
- 3 Remove the sample pan holder (2).
- 4 Remove the draft shield (3).



5.2.1.2 Disassembling the protective glass

The protective glass only needs to be removed if cleaning behind the glass is required.



NOTICE

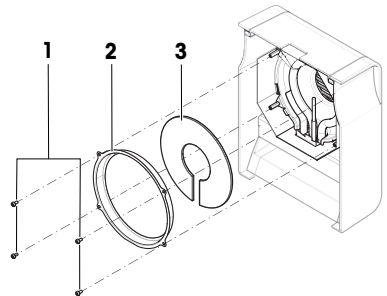
Erroneous results due to dirty halogen lamp

If the halogen lamp comes into contact with adhesive substances while the protective glass is removed, the heat may be unevenly distributed and results may be distorted.

- 1 Do not touch the halogen lamp.
- 2 If you touch the halogen lamp, clean it carefully with a damp lint-free cloth and a mild solvent, e.g., isopropanol or ethanol 70%.

Required material

- Screwdriver
- The moisture analyzer is switched off.
- 1 Open the lid.
- 2 Carefully remove the four screws (1) holding the reflector ring.
- 3 Remove the reflector ring (2) (glass holder).
- 4 Carefully take the protective glass (3) out of the reflector ring.



5.2.2 Cleaning the instrument



NOTICE

Damage to the instrument due to inappropriate cleaning methods

If liquid enters the housing, it can damage the instrument. The surface of the instrument can be damaged by certain cleaning agents, solvents, or abrasives.

- 1 Do not spray or pour liquid on the instrument.
- 2 Only use the cleaning agents specified in the Reference Manual (RM) of the instrument.
- 3 Only use a lightly moistened, lint-free cloth or a tissue to clean the instrument.
- 4 Wipe off any spills immediately.

Cleaning around the moisture analyzer

- Remove any dirt or dust around the moisture analyzer and avoid further contaminations.

Cleaning the terminal

- Clean the terminal with a damp cloth or a tissue and a mild cleaning agent.


Cleaning the removable parts

- Clean the removed part with a damp cloth or a tissue and a mild cleaning agent.

Cleaning the moisture analyzer

- 1 Use a lint-free cloth moistened with a mild cleaning agent to clean the surface of the moisture analyzer.
- 2 Remove powder or dust with a disposable tissue first.
- 3 Remove sticky substances with a damp lint-free cloth and a mild solvent, e.g., isopropanol or ethanol 70%.

5.2.3 Putting into operation after cleaning

- 1 Reassemble the moisture analyzer.
 - 2 Connect the moisture analyzer to the power supply.
 - 3 Press  to switch on the moisture analyzer.
 - 4 Check the level status, level the moisture analyzer if necessary.
 - 5 Respect the warm-up time specified in the "Technical Data".
 - 6 Perform a routine test according to the internal regulations of your company. METTLER TOLEDO recommends performing a SmartCal test after cleaning the balance.
- ⇒ The moisture analyzer is ready to be used.

5.3 Replacing the power line fuse



NOTICE

Damage due to faulty fuse handling

Using the wrong fuse or false handling of the fuse can lead to irreparable damage on the instrument.

- 1 Only use fuses of the correct type and rated value.
- 2 Do not short-circuit (bridge) the fuse.

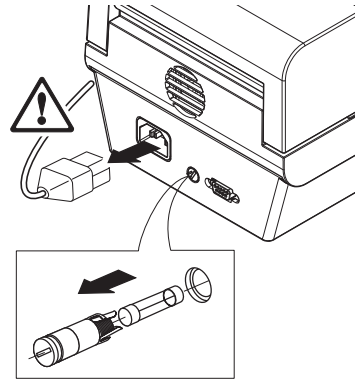
If the display of your terminal remains dark after switching on, in all probability the power line fuse is blown. The power line fuse is located on the back of the moisture analyzer.

Required material

- Screwdriver
- Spare fuse, for correct type see [General data ▶ Page 20]

Procedure

- 1 Disconnect the power cable.
- 2 To unlock the fuse holder, press the screwdriver into the fuse holder and turn it slightly (max. half a turn).
- 3 Pull out the fuse holder.
- 4 Remove the fuse and check its condition.
- 5 If the fuse is blown, replace the fuse with one of the same type and the same rated value.
- 6 Insert the fuse holder and lock it by turning it clockwise.
- 7 Reconnect the power cable.



See also

General data ▶ Page 20

6 Technical Data

6.1 General data

Power supply

115 V AC	100 V–120 V AC, 50/60 Hz, 4 A
230 V AC	200 V–240 V AC, 50/60 Hz, 2 A
Voltage fluctuations	-15%+10%
Power load radiator	max. 400 W during drying process
Power line fuse	115 V: 5 x 20 mm, F6.3AL250V (6.3 A, fast-acting, low breaking capacity)
	230 V: 5 x 20 mm, F2.5AL250V (2.5 A, fast-acting, low breaking capacity)

Protection and standards

Overvoltage category	II
Degree of pollution	2
Standards for safety and EMC	see Declaration of Conformity (part of standard equipment)
Range of application	for use in dry interior rooms

Environmental conditions

Height above sea level	< 4000 m
Ambient temperature range	Operation: +10 °C to +30 °C (operability guaranteed +5 °C to +40 °C)
Relative air humidity	max. 80% up to +31 °C, linearly decreasing to 50% at +40 °C 20% - 80% and non-condensing conditions.
Warm-up time	At least 60 minutes after connecting the instrument to the power supply. When switched on from standby, the instrument is ready for operation immediately.

Materials

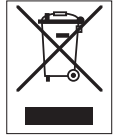
Heating module

Housing	PBT-GB20
Inspection window grill	PPS A504X90 (UL94-V0)
Protective glass	Glass ceramics
Halogen lamp	Quartz glass

Reflector	Stainless steel, X2CrNiMo17-2 (1.4404)
Reflector bracket	PPS A504X90 (UL94-V0)
Draft shield, interior bottom plate	Stainless steel, X2CrNiMo17-2 (1.4404)

7 Disposal

In conformance with the European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.



Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. If you have any questions, please contact the responsible authority or the distributor from which you purchased this device. Should this device be passed on to other parties, the content of this regulation must also be related.

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