



Moisture Analyzers
MS-70/MX-50
MF-50/MIL-50



AND ...Clearly a Better Value
A&D Company, Limited
<http://www.aandd.jp>

Select the best for your application

A&D's Moisture Analyzers MS-70/MX-5



SRA

Fast and uniform heating with halogen lamp and innovative SRA technology

Straight halogen lamp and uniquely designed SRA (Secondary Radiation Assist) filter gives shorter measurement time, thanks to fast and uniform heating

High repeatability

With SHS (Super Hybrid Sensor) featured as the weight sensor, ultra accurate moisture content determination is possible based on high precision weighing of even a small sample

High moisture content measurement

MS-70 measures the moisture content at 0.001% resolution suitable for low moisture content samples as well as Karl Fischer method, yet requires no special knowledge or training and produces no harmful waste

Standard WinCT-Moisture (for MS & MX) for real-time graph displaying

WinCT-Moisture is an original software application designed to display a graph of moisture content rate change while measuring with a connected PC

Sodium Tartrate Dihydrate comes as standard for accuracy checking

Sodium Tartrate Dihydrate is a chemical material that has stable moisture content of $15.66\%^{+0.3}_{-0.1}$, and thus is best to use for accuracy check to maintain the reference value of the analyzer

Calibration of the heater temperature (for MS & MX)

With the temperature calibrator (optional), calibration result can be output in the format that conforms to GLP, GMP, ISO

Memory function

According to sample up to 20 suitable measurement conditions can be stored and recalled, which saves time and prevents the user from making a mistake when setting (10 for MF & 5 for ML)

For measurement result, up to 100 data can be stored and output at once (50 for MF & 30 for ML)

Five measurement programs

Five choices of measurement programs, Standard, Automatic, Quick, Timer, and Manual Mode are provided

Standard Mode : Just measurement accuracy, HI, MID or LO needs to be set

Automatic Mode : Ends measurement when moisture content changes at a rate less than the set rate

Quick Mode : Begins heating samples at 200°C for 3 minutes, then is the same as Automatic Mode

Timer Mode : Continues measurement for a set duration of time (1~60mins.: by 1min, 60~480mins.: by 5mins.)

Manual Mode : STOP button should be pressed to end measurement (Max. heating time: 480mins.)

Selectable Heating Mode

Choose the heating mode from standard, quick, step and ramp heating modes for the most suitable measurement (ML has Standard and Quick heating modes only)

Clear and easy-to-see, large VFD display

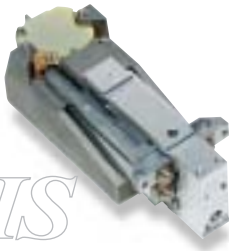
Measurement, setting value, change in moisture content, action status, data number and other important information are clearly displayed

Easy handling of the unit

Ergonomically designed pan handle eliminates mishaps such as burns when moving a hot sample pan into or out of the unit from either side. Wing handle for easy opening and closing of the heater cover

Low maintenance cost assured

The halogen lamp is user replaceable without unit downtime with protective chamber for easy cleaning (Lamp life 5000 hours)



SHS



Best moisture analyzer Verification-Test with The Best

MS/MF-50/ML-50



MS



MX



MF



ML

Progress window for heating check

Heating process can be checked through translucent window

Self Check function

Defect check function is available along with temperature control

Quick Reference Card

A convenient operating guide is installed at the bottom of the analyzer

Standard RS-232C

Bi-directional communication with a PC or connects directly to a printer

Conformity to GLP, GMP, GCP and ISO with date/time, ID, calibration data and check record outputs

Data output for daily record management



SRA
Secondary Radiation Assist

Straight Halogen Lamp

SHS
Super Hybrid Sensor

WinCT
MOISTURE

888
VFD Display

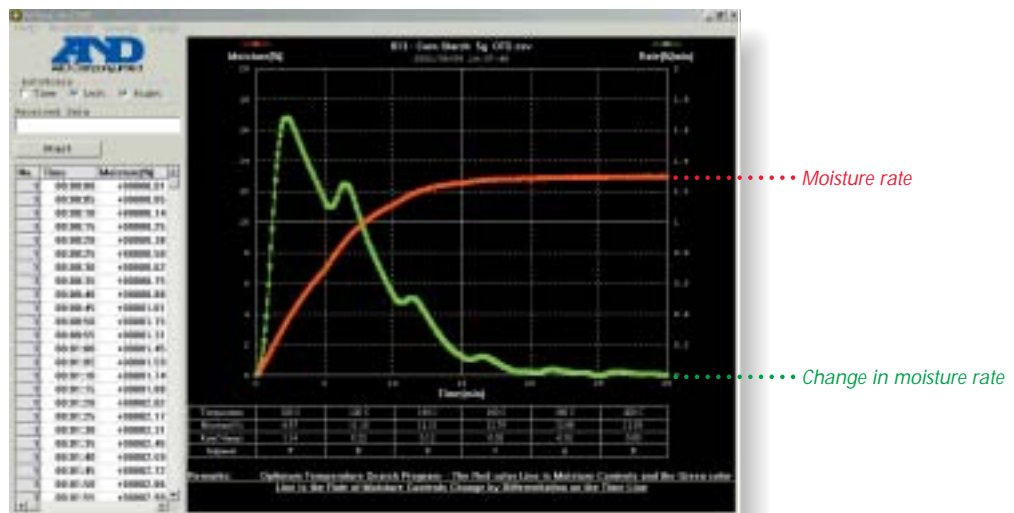
RS-232C

GLP

WinCT-Moisture

With our WinCT–Moisture software, data measured by the Moisture Analyzers can be easily displayed on your computer.

Effective for determining measurement conditions such as heating temperature, and useful in reducing the time needed for measurement and improving accuracy.



Displays moisture rate changes over time in a graph (RsFig)

Displays changes in moisture rate in real time

Measures moisture rate in a minimum time with excellent accuracy

Heats at the highest temperature without changing the physical properties of the sample and provides measurements with good repeatability

Automatically determines the most suitable heating conditions in a short time (RsTemp)

Automatically changes the heat applied by the set increments and interval time within a range of 30°C-200°C. From the moisture rate change over that time can determine the most suitable heating temperature in one time measurement (*Patent pending)

Shows sample data summary

Provides a data summary for the sample with the results of moisture rate change for the representative material's measurement

Calculates measurement data statistics

Saves the recorded data as a CSV file

Determines other changes to the sample material in addition to moisture rate

Continuously measures changes to the mass in response to heating temperature and detects other material changes besides the moisture rate

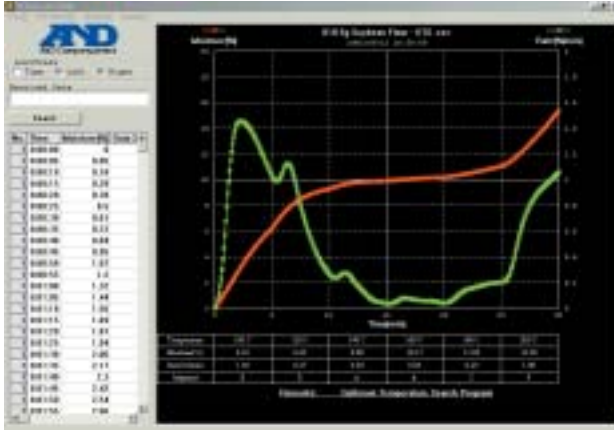
WinCT-Moisture

Measurement example

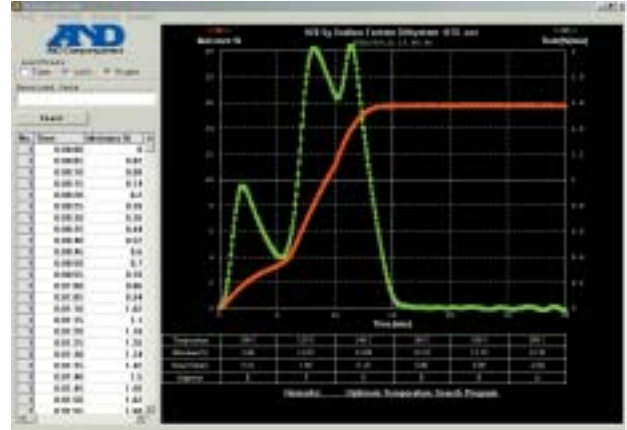
WinCT-Moisture consists of RsTemp software to determine the heating temperature and RsFig software for graphics.

1. Example of measurement using RsTemp software to determine the heating temperature

Automatically changes the heating temperature (by your setting increments and interval time) within a range of 30°C - 200°C. From the rate of change in moisture over time, in one time measurement it can determine the optimum heating temperature for the sample.



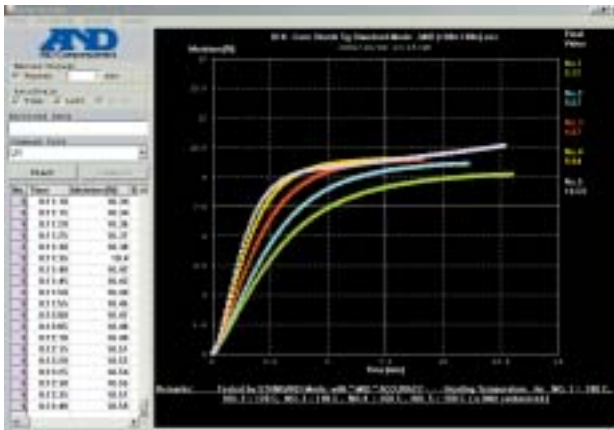
Soybean flour



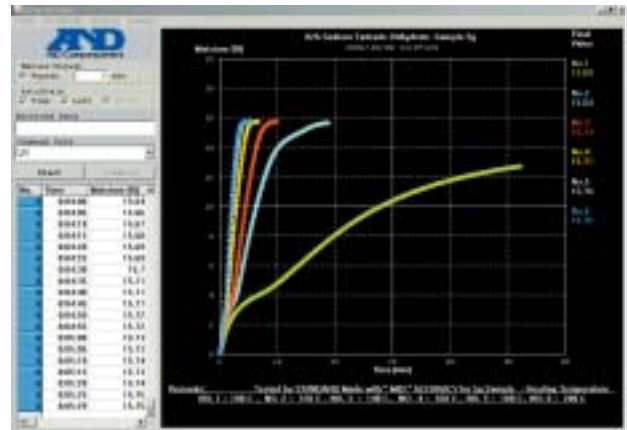
Sodium tartrate dihydrate

2. Example of measurement using RsFig graphic software

Can show moisture rate against time when the heating temperature is changed as well as showing the results of repeated measurements at a certain temperature. From the graph, the highest possible heating range for the sample and the quickest measuring time can be determined.



Corn starch



Sodium tartrate dihydrate

Comparison between MS-70 and the KF (Karl Fischer) method

Example of PET plastic pellet measurement

	Moisture rate		Average measurement time	Measurement conditions
	Average value	Repeatability (standard deviation)		
MS-70	0.298%	0.0045%	6.8 mins	Heating temperature 180°C Test sample 10g Measurements 5 times
KF method	0.307%	0.0065%	19.1 mins	Heating temperature 180°C Test sample 0.3g Measurements 5 times

KF method: a way of measuring moisture content through chemical determination.

With PET plastic and other materials, the MS-70 can measure a drop of moisture content of less than 1%. Specialist knowledge is not necessary to operate the MS-70, and since measurement occurs quickly no harmful waste is produced.

