

# Melting Point M-560/565



# Melting Point M-560 and Melting Point M-565 – Easy determination of melting and boiling points

The latest generation of BUCHI Melting Point instruments once again sets the gold standard. Determine melting and boiling points quickly and accurately with either a manual or automatic, real time video instrument.



## Highlights of the Melting Point Line

- Choose between a manual or automatic instrument for Melting and Boiling Point determinations
- Temperature range from room temperature up to 400°C
- Large illuminated magnification lens
- Heating block protective coating allows for easy cleaning and extended lifetime
- Compliant with Pharmacopeia methods including PH. EUR. 6.1.2.2.60, USP XXI 741 and JP
- GLP/GMP compliant protocols either with printer
- IQ/OQ available for Melting Point M-565

# Basic Set: Melting Point M-560 for Universities and Research Laboratories

The attractively priced Melting Point M-560 for manual determination of melting and boiling points is designed for all laboratories with moderate requirements for sample processing in a non-regulated environment.



## The M-560 for research and education offers:

- Large magnification lens
- Manual melting and boiling point determination
- Frequency indicator for boiling point determinations
- Fully guided 4 point calibration
- Shorter heat up and cool down times
- Easy to clean front glass panel
- Temperature range between room temperature and 400 °C
- Analyze up to 3 samples simultaneously

Ready to go – the Basic Set contains the Melting Point M-560 instrument, 100 melting capillaries, 10 boiling tubes, 10 boiling capillaries, calibration set M-560/565, sample holder, packing wire and cleaning tool.

## Increase the efficiency of your Melting Point M-560 and M-565



### Mini Keyboard

For the convenient straightforward input of parameters.



### Serial Printer

For GLP/GMP-conform documentation of results of calibration, melting and boiling point determinations.



### Sample Loader M-569

For quick and efficient loading of samples into BUCHI melting point capillaries.

# Professional Set: Melting Point M-565 and Sample Loader M-569 for High Throughput and Quality Control

The video camera equipped Melting Point M-565 for the automatic determination of melting and boiling points is designed for true, professional quality control. When used in combination with the Sample Loader M-569, determinations are achieved with unmatched reproducibility.



**The M-565 for automated determinations in high throughput environments offers:**

- Fully automatic melting point determination
- Fully automatic boiling point determination
- Real time video displayed in 6x magnification
- Video replay function with variable speed
- Sample loader for reliable packing of melting point capillaries
- Temperature range between room temperature and 400 °C
- Optional IQ/OQ documentation
- Optional MeltingPoint Monitor software

Ready to go – the Professional Set contains the Melting Point M-565 instrument, the Sample Loader M-569, 100 melting capillaries, 10 boiling tubes, 10 boiling capillaries, calibration set M-560/565, sample holder, packing wire and cleaning tool.

## Exclusive Accessory for the Melting Point M-565



### MeltingPoint Monitor Software

Software for easy and convenient management of users, methods and results.



### IQ/OQ Documentation

Installation/Operational Qualifications documentation often important when compiling with GMP/GLP.



### OQ Documentation

Repeating Operational Qualification to guarantee that the instrument meets predefined specifications.

## Features of the M-560 and M-565

Large lens with 2.5 times magnification for precise determination of the samples



Optimized design of the heating block allows faster cooling times and therefore higher sample throughput per hour



Large high resolution color display



Intuitive menu guided calibrations when using the BUCHI Calibration Standards

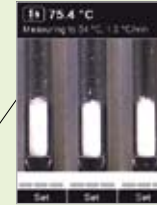


Optional Keyboard and Printer for fast input of sample parameters and standardised output of results

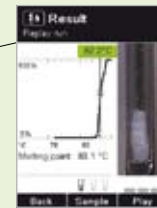


## Additional Features of the M-565

Automatic determination of melting and boiling points for higher efficiency



Relaxed observation of the phase transition with 6 times magnification on a color display



Video of determinations allows the review of each measurement. Variable speed playback from single frame slow motion to 100x real time



Optional IQ/OQ documentation for customers in a regulated environment. No need to create validation documents. Available in five languages



Optional MeltingPoint Monitor software for easy and safe management of users, methods and results

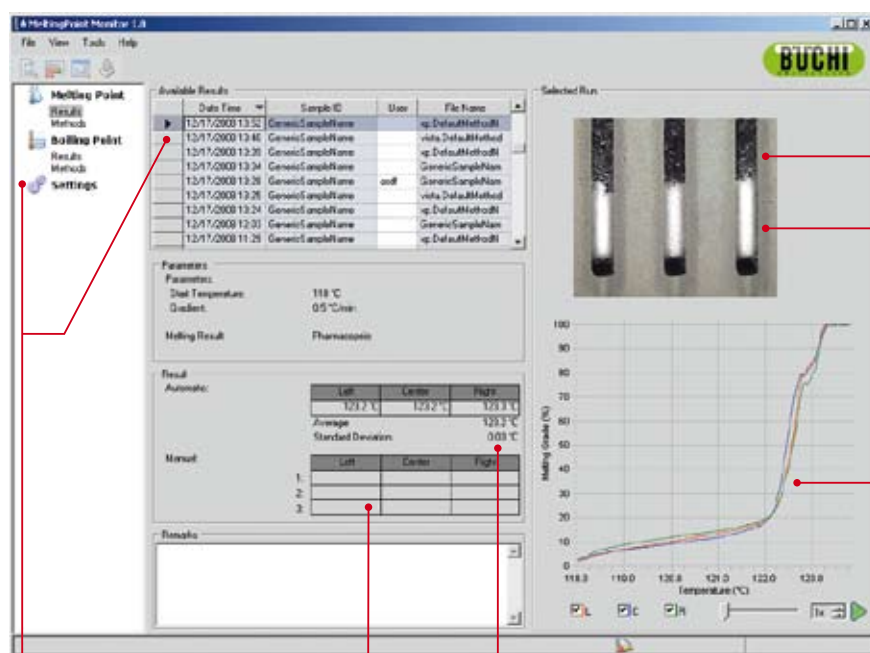
### Sample Loader M-569 - World Novelty

- Unique for the loading of melting point capillaries
- Reproducible results due to consistent, homogenous packing quality
- Loading times substantially reduced compared to conventional methods
- Easy and safe handling of samples and capillaries:
  - No risk of cross-contamination as with the glass tube procedure
  - No risk of breaking capillaries compared to manual knocking method
- Optional accessory for Melting Point M-560 and previous BUCHI Melting Point instruments



# MeltingPoint Monitor – Professional PC Software for the Melting Point M-565

The intuitive, user friendly management of methods, users and results in combination with the ability to observe melting or boiling point videos make the software essential for routine work such as in quality control. Phase transitions along the melting curve can be viewed via a large magnification lens or video to prevent repetitive measurements that can result from improper capillary packing, impure substances, etc.



Melting point or boiling point video

Actual temperature of the video picture

Melting or boiling point curves

Method and result management

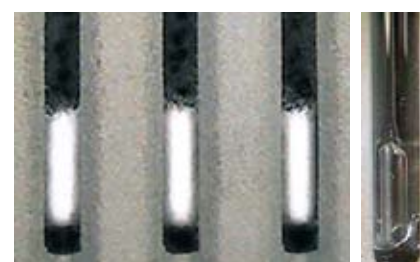
Overview of automatic and manual results

Date Time	Sample ID	User	File Name
12/17/2008 13:52	GenericSampleName		ip.DefaultMethodH
12/17/2008 13:40	GenericSampleName		vista.DefaultMethod
12/17/2008 13:39	GenericSampleName		ip.DefaultMethodH
12/17/2008 13:34	GenericSampleName		GenericSampleName
12/17/2008 13:26	GenericSampleName	andf	GenericSampleName
12/17/2008 13:25	GenericSampleName		vista.DefaultMethod
12/17/2008 13:24	GenericSampleName		ip.DefaultMethodH
12/17/2008 12:03	GenericSampleName		GenericSampleName
12/17/2008 11:29	GenericSampleName		ip.DefaultMethodH

Left	Center	Right
123.2 °C	123.2 °C	123.3 °C
Average:		123.2 °C
Standard Deviation:		0.03 °C

Left	Center	Right
1:		
2:		
3:		



## Method and Result Management

Comfortable database structure for easy archiving and recovery of previous measurements. Various sorting functions by name, user, date.

## Overview of Results

Compact overview of the automatically detected results including the average value and standard deviation. Additionally results of a manual determination are shown below.

## Melting Point and Boiling Point Screen

During a measurement the actual status of the samples is displayed. After the measurement any movie can be observed in various speeds from slow motion up to 100x real time. The overall observation process can be accelerated by dragging the scrollbar over the melting or boiling point curve.

# GLP/GMP compliant IQ/OQ for Melting Point M-565

Analytical instruments must be calibrated and verified at intervals according to a written procedure. The necessary accuracy is ensured by this installation and operational qualification.



## Complete Qualification Packages

The initial qualification covers the instrument qualification (IQ) and the operative qualification (OQ). The IQ verifies that the instrument is correctly installed and in a good working order. The OQ demonstrates the functioning of the instrument within its working specifications.

For the Melting Point M-565 BUCHI offers an IQ/OQ package for the initial installation and an OQ renewal for the routine verification that the instrument still fulfills its specifications.

## Accuracy – Competence meets Quality

To save you the time consuming preparation of documentation, the qualification packages are available in five languages and include specifically certified calibration and verification standards. The standards comply with the strictest requirements and can be traced back to LGC standards.

Since your instrument must comply with very strict audit requirements, we offer the installation, calibration and qualification of your instrument by a BUCHI certified service technician.

### IQ/OQ for Melting Point M-565

- Instrument logbook
- IQ documentation
- OQ documentation
- OQ label
- Calibration set M-565
- Verification set M-565
- 100 melting point capillaries
- Available in E, D, F, I, ES

### OQ renewal for Melting Point M-565

- OQ documentation
- OQ label
- Calibration set M-565
- Verification set M-565
- 100 melting point capillaries
- Available in E, D, F, I, ES

# Overview of Order Information

## Instruments



**Basic Set: Melting Point M-560**  
Instrument for the manual detection of melting and boiling points.  
100 V–240 V, 50/60 Hz

Order no. 051999



**Sample Loader M-569**  
Instrument for fast and efficient loading of samples into melting point capillaries.  
100 V–240 V, 50/60 Hz

Order no. 051997

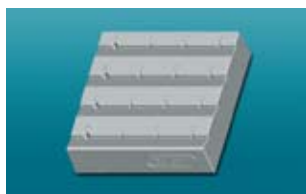


**Professional Set: Melting Point M-565 and Sample Loader M-569**  
High end Melting Point M-565 for automatic and manual detection of melting and boiling points. Including the Sample Loader M-569 for effective packing of samples into melting point capillaries.  
100 V–240 V, 50/60 Hz

Order no. 051998



## Accessories for Melting Point M-560 and Melting Point M-565



**Sample Holder**  
For confusion free preparation of 12 melting point and 4 boiling point samples.

Order no. 11055 014



**Mini Keyboard**  
For convenient straightforward input of parameters.

	Order no.
German (CH)	029509
English (USA)	029508



**Serial Printer**  
For documenting calibration results and melting and boiling point determinations.

100 V–240 V, 50/60 Hz  
Order no. 11055 438



**Calibration Set M-560/M-565**  
Kit of four BUCHI certified standards for calibration of the Melting Point M-560 and M-565.

Order no. 11055 018



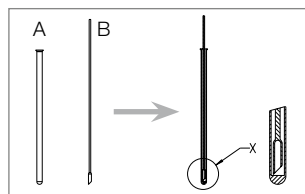
**Agate Mortar and Pestle**  
For homogenization of the sample. The polished surface is easy to clean, preventing cross-contamination.

Order no. 041867



**Melting Point Capillaries**  
The precision glass capillaries ensure highly reproducible melting point determinations.

	Order no.
100 pieces	017808
1000 pieces	001759



**Boiling Point Tube A**  
**Boiling Point Capillary B**  
The precision capillaries B generate perfect gas bubbles within tube A for reproducible boiling point determinations.

Order no.	A	B
10 pieces	019697	051850
100 pieces	019007	051890



**Verification Set M-560/M-565**  
Kit of three BUCHI certified standards for verification of the Melting Point M-560 and M-565.

Order no. 11055 019

## Exclusive Accessories for Melting Point M-565



**MeltingPoint Monitor Software**  
Software CD, Tutorial and single PC license. For installation under Windows Vista or Windows XP.

Order no. 11055 332



<b>IQ/OQ M-565</b>	Order no.
English	11055 004
German	11055 005
French	11055 006
Spanish	11055 007
Italian	11055 008



<b>OQ M-565</b>	Order no.
English	11055 009
German	11055 010
French	11055 011
Spanish	11055 012
Italian	11055 013



**Certification and Installation service offer**  
Installation, calibration and certification performed by a BUCHI certificated service technician.




**Melting Point M-560**

**Melting Point M-565**

**Sample Loader M-569**

Manual melting point determination	✓	✓	–
Manual boiling point determination	✓	✓	–
Automatic melting point determination	–	✓	–
Automatic boiling point determination	–	✓	–
Positions for melting capillaries	3	3	3
Positions for boiling capillaries	1	1	–
Precision magnifying lens	✓	✓	–
Magnification of lens	2.5 x	2.5 x	–
Digital camera, video function	–	✓	–
Video run time M-565	350 min at 1°C/min, 700 min at 0.5°C/min		
Display	Colour, TFT, 320 x 240, 3.5"		–
Magnification, Display	–	6 x	
Determination temperature range	Ambient + 10 °C to 400 °C		–
Temperature resolution	0.1 °C		–
Accuracy melting point at 0.5 °C/min up to 250 °C	+/- 0.3 °C		–
250 °C to 400 °C	+/- 0.3 °C to +/- 0.5 °C		–
Repeatability melting point at 0.5 °C/min	+/- 0.1 °C		
Accuracy boiling point at 1.0 °C/min up to 400 °C	+/- 0.5 °C		
Repeatability boiling point at 1.0 °C	+/- 0.3 °C		
Temperature gradients, °C/min	0.1, 0.2, 0.5, 1, 2, 3, 5, 10, 20		–
Heat-up time (50 °C–350 °C) at 25 °C	~ 4 min		–
Cool-down time (350 °C–50 °C) at 25 °C	~ 13 min		–
Electrical supply	100–240 V (±10%), 50–60 Hz		100–240 V (±10%), 50–60 Hz
Power consumption	150 W		6 W
Storable methods for melting point	50	50	–
Storable methods for boiling point	50	50	–
Contact termination	L, N, PE		L, N
Approval	CE, UL, CSA		CE, UL, CSA
Dimensions (W x H x D), mm	190 x 200 x 370		86 x 70 x 130
Weight, kg	4.5		0.5
Environmental conditions	For indoor use only		
Temperature	5–40 °C		
Altitude	up to 2000 m		
Humidity	Maximum relative humidity 80% for temperatures up to 31 °C, decreasing linearly to 50% relative humidity at 40 °C		
Overvoltage category	II		
Degree of protection	IP20		
Pollution degree	2		

## MeltingPoint Monitor Software



<b>Operating system</b>	Windows XP Professional (32-bit only), SP3	Windows 7 Professional / Ultimate / Enterprise (32 bits)
<b>Minimum system requirements</b>	1 GHz CPU or faster	1 GHz CPU or faster
	> 15 GB of free hard disk space; 512 MB RAM	> 15 GB of free hard disk space; 1 GB RAM
	CD-ROM drive	CD-ROM drive
	USB 1.1 or higher	USB 1.1 or higher

# Evolution of Melting Point Instruments – More than 50 years in Innovative Leadership



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