Cubis® Pharma Balance – for Preparing Calibration Standards Without the Need for Transferring Samples

turning science into solutions

Weigh the Smallest Sample Quantities into Heavy Containers – All Without Any Transfer

Pharmaceutical laboratories often request a micro balance that permits large-volume flasks to be tared and used directly to weigh the smallest sample quantities closely approximating the optimal minimum weight according to USP Chapter 41[1], near the starting point of a balance's operating range. This requirement also reflects one of the most common applications in a pharmaceutical laboratory: preparing calibration standards for HPLC analysis. During preparation, compound quantities in the range of the balance's mimimum weight are frequently weighed in relatively heavy flasks and a specific volume of a solvent is then added to the flask to obtain an accurate calibration standard.

The new Cubis® MSA116P pharma balance is a very special model of high-capacity Cubis® micro balances and has been designed to weigh the smallest samples directly into large laboratory containers. This procedure eliminates critical process parameters entailing the risk of inaccuracy, such as quantitative transfer of samples.

A New Way of Thinking for Preparing Calibration Standards

Neither the maximum weighing capacity nor the readability defines this balance, but rather the flask volumes you would like to use and the minimum sample quantity you need to attain. Just as our MSA66S sets the world record in resolution with 60 million divisions in the range of high-capacity Cubis® micro balances, the new Sartorius MSA116P pharma balance likewise achieves a record: It accommodates vessel volumes of up to 250 mL while achieving an optimal minimum weight of only 1.64 mg in compliance with USP Chapter 41.

Based on the high weighing capacity of the Sartorius pharma balance, you will no longer need to transfer your samples using weigh boats or paper. This not only saves time, but also eliminates the risk of sample loss during transfer when using significantly reduced, expensive samples or those only available in the smallest quantities.

The following standard equipment will ease your daily work:

- Intelligent Dosing Q-App, YAPP16
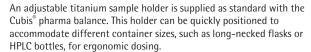- Adjustable sample holder
- Large weighing pans

Optimal Position of the Sample Holder at All Times for Safe and Ergonomic Weighing

With an adjustable sample holder and a large, 50 mm diameter titanium weighing pan, the MSA116P is perfectly prepared to accommodate nearly any standard shape of laboratory vessel. Even an extra-large 90 mm diameter weighing pan is optionally available. The sample holder supplied as a standard feature ensures optimal positioning of volumetric flasks, enabling you to dose even the smallest quantities of powder ergnomically at all times. You can also conveniently dose samples into large, long-necked containers after the top draft shield element automatically opens.

An adjustable titanium sample holder is supplied as standard with the Cubis® pharma balance. This holder can be quickly positioned to accommodate different container sizes, such as long-necked flasks or HPLC bottles, for ergonomic dosing.

The extended space on our large 50 mm YWP09 weighing pan is ideal for vessels requiring a larger support area to prevent them from tipping over. To accommodate even larger containers, the YWP10 titanium weighing pan with a 90 mm diameter is available as an option.

Overview of Dimensions and Weights of Long-Necked Flasks
(Dimensions and weights can vary, depending on the flask manufacturer.)

Use of a Sample Holder and a Weighing Pan

The optimal minimum weight according to USP Chapter 41 is 1.64 mg.[1]

Volume | mL	Neck Diameter | mm	Flask Diameter | mm	Base Diameter | mm	Height | mm	Weight | g
1	7	14	9	57	5
2	8	16	11	57	6
5	10	21	14	75	11
10	10	28	20	90	17
25	11	38	26	100	23
50	13	48	32	140	32
100	16	60	40	170	57
200	19	75	50	210	80
250	19	80	55	220	100

Sample holder for flexibility, YSH02

Standard weighing pan, YWP09 ⌀ = 50 mm

Optional weighing pan YWP10 ⌀ = 90 mm

[1]   According to USP (United States Pharmacopeia) Chapter 41, the operating range of a balance is defined as starting from 820 d and extending up to maximum weighing capacity. The optimal minimum weight is therefore 820 d. Depending on the installation location and the environmental conditions, this value for the minimum weight can typically be higher.

YAPP16 Dosing Q-App for Pharma Applications

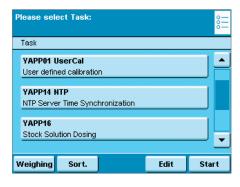## Q-App Included at No Extra Charge for Automated Preparation of Standard Solutions

Standards of defined concentrations are used to determine the concentration of unknown samples. Such standards need to be prepared accurately in order to minimize errors during analysis of unknown samples. However, it is next to impossible to weigh a solid sample so precisely that you can use a predefined volume of solvent. With the new YAPP16 Dosing Q-App software installed, your Cubis® pharma balance converts into an automated system for gravimetric monitoring of all measured values.

The Dosing Q-App automatically adjusts the volume of the solvent to the weight of your compound and determines the verified final concentration of your standard solution based on the weight of solvent actually added. Time-consuming and error-prone manual preparation of standards using volumetric determination is now a thing of the past.

The Dosing Q-App provides an interface to the Thermo Fisher Chromeleon™ software*, permitting fully traceable documentation of all analytical data, including the details of your standards prepared.

Visit the Sartorius Q-App Center for a Free Trial

You can easily download any standard Q-App from the Q-App Center, transfer it from an SD card directly to a Cubis® MSA laboratory balance, then try it out for 30 days free of charge. If you are happy with the features and convinced of the benefits, simply enter your personal details and the serial number of your Cubis® to purchase the Q-App. In just a few minutes, you will receive your unique activation code.

Easy activation of the Q-App.

Weighing compounds and dosing solvents for preparing stock solutions using the YAPP16 Q-App.

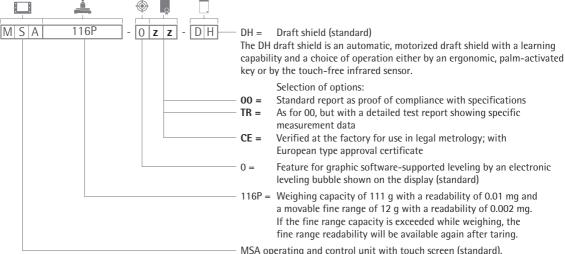Results for stock solution preparation using the YAPP16 Q-App.

* Dionex™ Chromeleon™ 7.2 Chromatography Data System (CDS) software is a trade mark of Thermo Scientific™

Specifications

The New Pharma Balance, Model MSA116P

The Sartorius pharma balance is a special version of the Cubis® family of laboratory balances. It is equipped as standard with an MSA display module featuring a touch screen and with an automatic, motorized draft shield as well as the YAPP16 Dosing Q-App.

Order Number:

M S A   116P   -   0   z   z   -   D H

DH = Draft shield (standard)
The DH draft shield is an automatic, motorized draft shield with a learning capability and a choice of operation either by an ergonomic, palm-activated key or by the touch-free infrared sensor.

Selection of options:
00 = Standard report as proof of compliance with specifications
TR = As for 00, but with a detailed test report showing specific measurement data
CE = Verified at the factory for use in legal metrology; with European type approval certificate

0 = Feature for graphic software-supported leveling by an electronic leveling bubble shown on the display (standard)

116P = Weighing capacity of 111 g with a readability of 0.01 mg and a movable fine range of 12 g with a readability of 0.002 mg. If the fine range capacity is exceeded while weighing, the fine range readability will be available again after taring.

MSA operating and control unit with touch screen (standard). The MSU and MSE operating and control units cannot be selected for this balance model.

Technical Specifications

Model MSA116P

Readability, µg	2 | 10
Weighing capacity range levels, g	12 | 111
Typical stabilization time, s	3.5
Typical response time, s	10
Repeatability (5 g | 100 g), < ± µg	4 | 10
Linearity, < ± µg	20
Eccentricity loading (test load [g]), µg	30 (50)
Optimal minimum weight[1], mg	1.64
Weighing pan size (dia.), mm	50 (optional 90)
Weighing chamber height, mm	240

[1] According to USP (United States Pharmacopeia) Chapter 41, the operating range of a balance is defined as starting from 820 d and extending up to maximum weighing capacity. The optimal minimum weight is 820 d and, depending on the installation location and environmental conditions, may be higher.

Accessories

Adjustable titanium sample holder for flexibility in accommodating different container sizes (standard on 36S, 36P, 66S, 66P, 116P)	YSH02
Slotted titanium weighing pan, 50 mm ∅ (standard on 66S, 66P, 116P)	YWP09
Titanium weighing pan, 90 mm ∅ (optional; only for 116P)	YWP10
Climate module for use inside the draft shield, w/o DAkkS certificate	YCM20MC
Calibration of climate module YCM20MC with DAkkS certificate	YCM20DAkkS
Calibrated climate module with DAkkS certificate	YCM20MC-DAkkS
Ionizer with U-shaped electrode manufactured by HAUG, incl. power supply for 230 V	YIB02–230V
Ionizer with U-shaped electrode manufactured by HAUG, incl. power supply for 115 V	YIB02–115V
UserCal Advanced	YAPP012
USP Advanced	YAPP022

For more accessory options, visit: **www.sartorius.com**