

EasySampler 1210










# EasySampler™

Unattended, Representative Sampling

METTLER TOLEDO



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## Glossary of Terms Used

**PBT** = Polybutylene terephthalate  
**PP** = Polypropylene

**PTFE** = Polytetrafluoroethylene  
**VQM** = Silicone rubber

# Unattended, Representative Sampling For a Wide Range of Chemical Reactions

Sampling chemical reactions for offline analysis to determine reaction progress or impurity profiles is standard practice. However, the manual process is challenging when sampling air-sensitive reactions, reactions at elevated pressure, or from heterogeneous mixtures. Poor sampling reproducibility and delays in quenching can lead to variable results and inaccuracies in the analytical information gained.

EasySampler was designed to eliminate these challenges, by providing an automated and robust inline method of taking representative samples from reactions.



## Difficult Reactions to Sample

It is labor intensive or impossible to sample reactions that are air or moisture sensitive, at elevated pressure or sub-ambient temperature, or highly toxic. EasySampler's unique probe enables sample capture and immediate quench so samples are representative of the reaction at the time of sampling.



## Representative and Reproducible

Sampling reactions with precision is challenging, especially for heterogeneous or multiphase reactions. EasySampler samples from the same position in the reactor, into a pocket of fixed volume. Solids begin dissolving immediately in the quench step for accurate and reproducible analytical data.



## Automated and Unattended

Sampling long reactions or a series of DOE experiments can be impractical. The lack of samples leads to blind spots in data, thus requiring repeat experiments. EasySampler can be programmed with a sequence for continued sampling operations 24 hours a day.



## HPLC Ready Samples

After quenching, the liquid handling system dilutes the sample to a user-specified concentration and transfers it to a vial, ready for offline analysis. Quench and dilution steps can function as sample derivatization steps, thus decreasing sample preparation time and eliminating human error.

# Tools to Speed Chemical Development

## Automated Synthesis with HPLC Sampling

**"The productivity gain through EasySampler changes the way chemists work in the laboratory. They often do prepare and start the reaction in the afternoon to collect samples the next morning. This gives them more time for experiment design and evaluation."**  
– Principal Scientist, Janssen Pharmaceutica

### Shorten Chemical Development Time

Automated reactors help scientists control reaction parameters while running experiments 24 hours a day. Scientists explore more experimental conditions with unattended parameter control. Non-viable conditions can be screened early so reactions can be optimized in less time.

### Impurity Profiling from Difficult Reactions to Sample

EasySampler™ provides continuous and representative samples over the timeframe of the entire reaction. Consistent, high-quality offline analytical data, from HPLC, GC or NMR, throughout the full reaction make it easy and safe to study kinetics and develop impurity profiles, even from heterogeneous mixtures, air- and moisture-sensitive reactions, and under pressurized and toxic conditions.



Simple recipe programming including sampling tasks in iControl software. Sampling events are annotated on the trend graph.

### Make Good Decisions Sooner

iControl™ software is an intuitive control and analysis platform for EasyMax™, OptiMax™, RX-10™, RC1mx™, and EasySampler. The single software platform provides comprehensive understanding so scientists can quickly understand, innovate, and make informed decisions.



**Capture, Prepare, and Share Data**

iC Data Center™ automatically captures instrument data, prepares it for analysis, and emails it to colleagues while recording it in a central storage location. Chemists share information and gain a pathway for compliant data management.

**EasySampler Connectivity Kit**

The EasySampler Connectivity Kit integrates EasySampler with EasyMax Advanced, OptiMax, RX-10, and RC1mx. Sampling information is automatically combined and reported with the reactor experiment conditions via the touchscreen or iControl™ software.



**EasySampler Filter Kit – EasyFrit**

EasyFrit allows unattended exclusive solution phase sampling over an elongated period under reaction conditions at scale.



**Sample Transfer to HPLC Devices**

The EasySampler 12 x 10 mL SBS-format vial plate provides simple and fast transfer of the prepared samples to offline analytical HPLC and UPLC devices that accept SBS-format vial racks.

# EasySampler 1210 System



## 30083901 EasySampler 1210 System Complete

EasySampler 1210 System Complete is a package including the necessary ancillary items and accessories. EasySampler 1210 is equipped with a sample rack accommodating up to 12 vials, of 10 mL each.

The sampling probe is not included in the EasySampler 1210 System Complete package. Refer to pages 11 and 12 for EasySampler probe information.

### 30083901 EasySampler 1210 System Complete consisting of

Order Number	Product Description	Quantity	Page
30247690	EasySampler 1210 System	1	7
30040993 *	EasySampler 10 mL rack, PP	1	7
30629521 *	10 mL vial including screw cap (pre-assembled), 100 pcs in a set	1	7, 10
30041011 *	Needle, stainless steel	1	8
30097344	Needle protection shield	1	8
30083885 *	Knurled screw, M4 x 6 mm	1	8
30072069 *	Waste bottle 500 mL, GL55, glass	1	8
30094594	Screw cap for 500 mL waste bottle, GL55, PP	2	8
30306192 *	Septum for GL55, Silicone/PTFE	6	8
51191591	Bottle 250 mL with cap, GL45, glass, PP	3	8
51191972	Distributor cap GL45, 2 x GL14, PP	3	8
51190318	Screw cap GL14 without aperture, PBT	3	9
51190317	Screw cap GL14 with aperture h.17 mm, PBT	3	9
51191170	Silicone rubber seal (septum) for screw cap GL14	3	9
30107048	3-way valve, ceramic	1	9
30061425	Drip pan, PP	1	9
30099772	Test tube 12 x 100 mm	1	9
30213880	Sleeve mounting and removal tool (SMART)	1	9
30246341 *	PTFE tube set to solvents for EasySampler 1210, PEEK fittings (one set installed and one supplied as spare)	2	10
30246340 *	PTFE tube set for EasySampler 1210, PEEK fittings (one set installed and one supplied as spare)	2	10
	User Manual EasySampler, A4	1	

\* Recommended accessories and consumables



30247690	EasySampler 1210 System
Material	Housing: Polypropylene PP 30% Talcum Tubing: PTFE Needle: Stainless steel Valve: Ceramic Pump: Ceramic, PTFE
Power Connection	100 – 240 V 50 Hz/60 Hz
User Interface	METTLER TOLEDO touchscreen
Size	310 mm, 12.2" x 465 mm, 18.31" x 500 mm, 19.68" (w x h x d)
Weight	9 kg, 20 lbs
Quantity	1



30040993	EasySampler 10 mL rack
	12 vial positions
Material	PP
Size	Ø 180 mm, height 50 mm
Quantity	1



30629521	10 mL vial including screw cap, pre-assembled
Material	Borosilicate glass, metal cap, silicone/PTFE septum
Size	Outer Ø 24 mm, height 45 mm
Quantity	100 pcs in a set



<b>30041011</b>	<b>Needle</b>
Material	Stainless steel
Size	Length 132 mm
Quantity	1



<b>30097344</b>	<b>Needle protection shield</b>
Material	Stainless steel
Size	60 mm x 152 mm x 90 mm (w x h x d)
Quantity	1



<b>30083885</b>	<b>Knurled screw, M4 x 6 mm</b>
Size	M4 x 6 mm
Quantity	1



<b>30072069</b>	<b>Waste bottle 500 mL, GL55</b>
Material	Borosilicate glass
Size	Outer Ø 80 mm, height 160 mm
Quantity	1



<b>30094594</b>	<b>Screw cap for 500 mL waste bottle, GL55</b>
Material	PP
Thread	GL55
Quantity	1



<b>30306192</b>	<b>Septum for GL55</b>
Material	Silicone/PTFE
Size	Ø 54 mm, thickness 1.5 mm
Quantity	1



<b>51191591</b>	<b>Bottle 250 mL with cap, GL45</b>
Material	Borosilicate glass, PP
Quantity	1



<b>51191972</b>	<b>Distributor cap, GL45 2 x GL14</b>
Material	PP
Quantity	1





<b>51190318</b>	<b>Screw cap GL14, without aperture</b>
Material	PBT
Temperature	Max. 200 °C
Quantity	1



<b>51190317</b>	<b>Screw cap GL14, with aperture</b>
Material	PBT
Temperature	Max. 200 °C
Aperture	Ø 9.5 mm
Quantity	1



<b>51191170</b>	<b>Silicone rubber seal (septum) for screw cap GL14</b>
Material	Silicone rubber VQM
Size	Ø 12 mm, thickness 2 mm
Quantity	1



<b>30099772</b>	<b>Test tube 12 x 100 mm</b>
Material	Borosilicate glass
Size	Outer Ø 12 mm, length 100 mm
Quantity	1



<b>30061425</b>	<b>Drip pan</b>
Material	PP
Size	140 mm x 10 mm x 100 mm (w x h x d)
Quantity	1



<b>30213880</b>	<b>Sleeve mounting and removal tool (SMART) including Torx key T10</b>
Material	Stainless steel
Quantity	1



<b>30246341</b>	<b>PTFE tube set to solvents for EasySampler 1210, PEEK fittings</b>
Material	PTFE tube, PEEK fittings
Size	Inner Ø 0.8 mm, length 550 mm
Quantity	3 pcs in a set



<b>30246340</b>	<b>PTFE tube set for EasySampler 1210, PEEK fittings</b>
Material	PTFE tube, PEEK fittings
Quantity	4 pcs in a set

# EasySampler Probes



## 30306037

### EasySampler Probe 450 Set

EasySampler Probe 450 Set includes additional sleeves, adapters to interface the probe with reactors, and a spare tubing set.

Probe 450 is 453 mm in length, for use with RC1 and other reactors up to 6 liters.

### 30306037 EasySampler Probe 450 Set consisting of

Order Number	Product Description	Quantity	Page
30279540	Sampling probe type 450, including sleeve	1	11
30100528 *	Sleeve complete, PTFE, Alloy C-22	4	12
14104090	Adapter 19/22, PTFE, 9.5 mm	1	12
14104089	Adapter 14/20, PTFE, 9.5 mm	1	12
30326844	Sleeve mounting clamp	1	12
30306036 *	Tube set probe 450, PTFE tube, PEEK fittings (one set installed and one supplied as spare)	2	12

\* Recommended accessories and consumables



## 30306933

### EasySampler Probe 330 Set

EasySampler Probe 330 Set includes additional sleeves, adapters to interface the probe with reactors, and a spare tubing set.

Probe 330 is 333 mm in length, for use with EasyMax 102 and 402, OptiMax, RC1, and other reactors up to 1 liter.

### 30306933 EasySampler Probe 330 Set consisting of

Order Number	Product Description	Quantity	Page
30306934	Sampling probe type 330, including sleeve	1	11
30100528 *	Sleeve complete, PTFE, Alloy C-22	4	12
14104090	Adapter 19/22, PTFE, 9.5 mm	1	12
14104089	Adapter 14/20, PTFE, 9.5 mm	1	12
30326844	Sleeve mounting clamp	1	12
30246342 *	Tube set probe 330, PTFE tube, PEEK fittings (one set installed and one supplied as spare)	2	12

\* Recommended accessories and consumables



**30246344**

**EasySampler Probe 210 Set**

EasySampler Probe 210 Set includes additional sleeves, adapters to interface the probe with reactors, and a spare tubing set.

Probe 210 is 213 mm in length, for use with EasyMax 102 and 402 using reactors from 10 mL up to 400 mL.

**30246344 EasySampler Probe 210 Set consisting of**

Order Number	Product Description	Quantity	Page
<b>30043400</b>	Sampling probe type 210, including sleeve	1	11
<b>30100528</b> *	Sleeve complete, PTFE, Alloy C-22	4	12
<b>14104090</b>	Adapter 19/22, PTFE, 9.5 mm	1	12
<b>14104089</b>	Adapter 14/20, PTFE, 9.5 mm	1	12
<b>30326844</b>	Sleeve mounting clamp	1	12
<b>30247094</b> *	Tube set probe 210, PTFE tube, PEEK fittings (one set installed and one supplied as spare)	2	12

\* Recommended accessories and consumables



	<b>30279540</b> Sampling probe type 450, including PTFE sleeve	<b>30306934</b> Sampling probe type 330, including PTFE sleeve	<b>30043400</b> Sampling probe type 210, including PTFE sleeve
Probe Size	Ø 9.5 mm, 0.38", 453 mm, 17.83"	Ø 9.5 mm, 0.38", 333 mm, 13.11"	Ø 9.5 mm, 0.38", 213 mm, 8.38"
Weight	0.88 kg, 1.94 lbs	0.84 kg, 1.85 lbs	0.8 kg, 1.76 lbs
Quantity	1	1	1
Material	Wetted parts: Alloy C-22, PTFE Non-wetted parts: Anodized aluminum, stainless steel		
Pocket	20 µL ± 10%		
Temperature Range	-20 °C to 140 °C (for reactions at atmospheric pressure), up to 100 samples per sleeve		
Pressure Range and Conditions	1.013 bar to 10 bar, 14.7 psi to 145 psi Temperature range: 20 °C to 100 °C Maximum reactor volume: 2.5 L 1 sleeve per reaction (maximum 24 samples per reaction)		
pH	1 to 14		
Minimum Sampling Interval	2 min 52 sec		



<b>30100528</b>	<b>Sleeve complete</b>
Material	PTFE, Alloy C-22
Temperature Range	-20 °C to 140 °C (at atmospheric pressure)
Size	Outer Ø 9.525 mm, length 43 mm
Quantity	1



<b>30326844</b>	<b>Sleeve mounting clamp set</b>
Material	PP, stainless steel
Quantity	1



<b>14104089</b>	<b>Adapter 14/20 PTFE 9.5 mm</b>
Material	PTFE
Size	Inner Ø 9.525 mm, ST14/20
Quantity	1

<b>14104090</b>	<b>Adapter 19/22 PTFE 9.5 mm</b>
Material	PTFE
Size	Inner Ø 9.525 mm, ST19/22
Quantity	1



<b>30306036</b>	<b>Tube set probe 450, PEEK fittings</b>
Material	PTFE tube, PEEK fittings
Quantity	4 pcs in a set

<b>30246342</b>	<b>Tube set probe 330, PEEK fittings</b>
Material	PTFE tube, PEEK fittings
Quantity	4 pcs in a set

<b>30247094</b>	<b>Tube set probe 210, PEEK fittings</b>
Material	PTFE tube, PEEK fittings
Quantity	4 pcs in a set

## EasySampler Probe 330

Accessories for Original Style Probe 30244744



<b>30103230</b>	<b>Conduit installation tool</b>
Quantity	1



<b>51195306</b>	<b>Cylinder-head screw (nose clamp), Torx</b>
Material	Stainless steel
Size	M3 x 6 mm
Quantity	1



<b>51195307</b>	<b>Flat-head screw (tube interface), Torx</b>
Material	Stainless steel
Size	M3 x 8 mm
Quantity	1

# EasySampler Accessories And Consumables



<b>30811887</b>	<b>EasySampler filter – EasyFrit</b>
Material	Alloy C-22/276, FEP
Dimensions	Length 47 mm, Ø 14.2 mm
Filter Pore Size	10 µm
Temperature Range	-20 °C to 140 °C at ambient pressure
pH	1 to 14
Quantity	1



<b>30811900</b>	<b>EasyFrit filter kit</b>
Kit Parts	30811887 EasyFrit and installation tool (consisting of a base unit and a box wrench)
Quantity	1



<b>30312353</b>	<b>EasySampler 12 x 10 mL vial plate</b> SBS-format, to hold 12 x 10 mL vials
Material	PP
Size	128 mm x 86 mm x 20 mm
Quantity	1



<b>30326847</b>	<b>EasySampler conduit adapter set</b> Adapters to fit either a new style probe (conduit Ø 13 mm) or an original style probe (conduit Ø 11 mm)
Material	PP
Size	Inner Ø 13 mm and 11 mm, height 32 mm
Quantity	1 pair

## 10 mL Vial Sets



<b>30629521</b>	<b>10 mL vial including screw cap, pre-assembled</b>
Material	Borosilicate glass, metal cap, silicone/PTFE septum
Size	Outer Ø 24 mm, height 45 mm
Quantity	100 pcs in a set



<b>30629522</b>	<b>10 mL vial including screw cap, pre-assembled</b>
Material	Borosilicate glass, metal cap, silicone/PTFE septum
Size	Outer Ø 24 mm, height 45 mm
Quantity	1000 pcs in a set

# EasySampler Connectivity Kit

## EasyMax Advanced, OptiMax, RX-10, and RC1mx



**30110344**

### EasySampler Connectivity Kit

The EasySampler Connectivity Kit integrates EasySampler with EasyMax Advanced, OptiMax, RX-10, and RC1mx. Sampling information is automatically combined and reported with the reactor experiment conditions via the touch-screen or iControl software.

### EasySampler Connectivity Kit consisting of

Order Number	Product Description	Quantity
	USB dongle, mini format	1
<b>51191988</b>	CAN cable, 100 cm	1
<b>30092606</b>	EasySampler Connectivity Kit Quick Start Guide	1

# Adapters

## For EasySampler Probes



**14104089** Adapter 14/20 PTFE 9.5 mm

Material	PTFE
Size	Inner Ø 9.525 mm, ST14/20
Quantity	1



**14104090** Adapter 19/22 PTFE 9.5 mm

Material	PTFE
Size	Inner Ø 9.525 mm, ST19/22
Quantity	1



**14202569** Adapter 24/40 PTFE 9.5 mm

Material	PTFE
Size	Inner Ø 9.525 mm, ST24/40
Quantity	1



**14104091** Adapter 29/26 PTFE 9.5 mm

Material	PTFE
Size	Inner Ø 9.525 mm, ST29/26
Quantity	1



**14474704** HP reactor fiber probe adapter kit  
for 3/8" 9.525 mm probe, includes extension tube 14474701 and adapter 14474404

Material	Alloy C-22
Pressure Range	0 bar to 60 bar abs. ± 10%
Quantity	1



**14474700** HP reactor port extension tube  
allows connection of a 1/4" or 3/8" high pressure adapter

Material	Stainless steel
Pressure Range	0 bar to 60 bar abs. ± 10%
Quantity	1



**14474404** HP reactor fiber probe adapter  
for 3/8" 9.525 mm probe

Material	Alloy C-22
Pressure Range	0 bar to 60 bar abs. ± 10%
Quantity	1

**14474701** HP reactor port extension tube  
allows connection of a 1/4" or 3/8" high pressure adapter

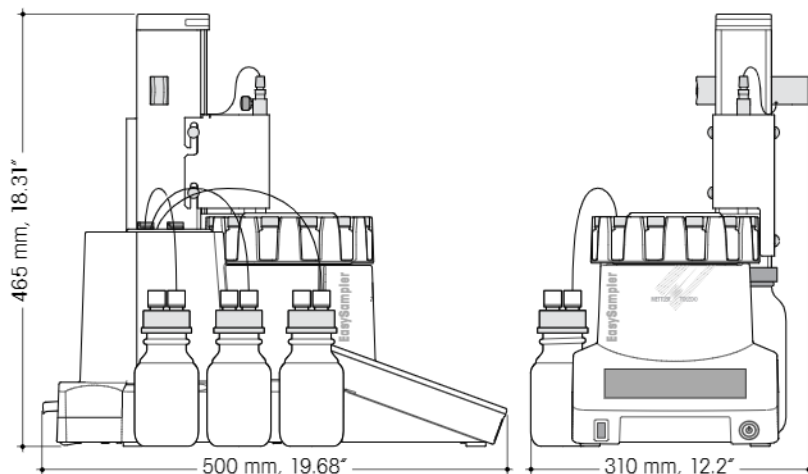
Material	Alloy C-22
Pressure Range	0 bar to 60 bar abs. ± 10%
Quantity	1

# EasySampler™

## Unattended, Representative Sampling

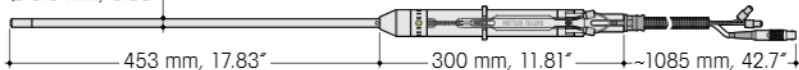
### Technical Data

#### EasySampler 1210 System



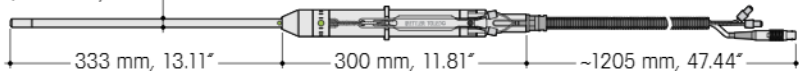
#### EasySampler Probe 450 – for RC1 and other reactors up to 6 L

Ø 9.5 mm, 0.38"



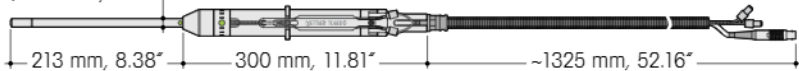
#### EasySampler Probe 330 – for EasyMax 102 and 402, OptiMax, RC1, and other reactors up to 1 L

Ø 9.5 mm, 0.38"



#### EasySampler Probe 210 – for EasyMax 102 and 402 using reactors from 10 mL up to 400 mL

Ø 9.5 mm, 0.38"



[www.mt.com/EasySampler](http://www.mt.com/EasySampler)

For more information

#### METTLER TOLEDO Group

Automated Reactors and In Situ Analysis  
Local contact: [www.mt.com/contacts](http://www.mt.com/contacts)

Subject to technical changes  
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