PlastiTrax®

Precision Driven Microplastic Reference Materials

MIQALAB

PlastiTrax® tablets set new benchmarks in microplastic reference materials. Designed for method validation or quality control, each **tablet** is **individually manufactured and characterized**, offering precise particle counts, customizable polymer compositions, and size fractions. With their easy application and patented method, PlastiTrax® ensures accuracy, reliability, and flexibility for diverse analytical needs.

For each tablet, you receive the individually determined particle count – precise down to the exact particle.

Key benefits and features

- **High precision**
  Each tablet is individually characterized and quantified.
- **Easy handling**
  Simply dissolve the tablet – no additional preparation needed.
- **Reduced Analysis Time**
  Multiple polymers can be combined in a single tablet (up to 10).
- **Reduced Contamination**
  KBr is heated for 48h at 600°C, effectively removing organic contaminations.
- **Versatile Applications**
  Suitable for various particle based analytical methods, including Raman, FTIR, QCL, and more.
- **Continuous Quality Control**
  Deuterated Polymers allow for automated and easy implementation of QA/QC processes
- **High Water Solubility**
  Tablets dissolve quickly in any aqueous solutions.
- **Suitable for ISO 16094:2 2025**
  In compliance with the ISO guide for microplastic analysis in drinking water.

PlastiTrax® Tablets

- **Single Polymer**
  - 1 single polymer
- **Basic**
  - 2 Polymers of different densities
- **Priority**
  - **Lite**: Contains 5 most prominent polymers: PE, PP, PS, PET, PVC
  - **Complete:** Contains all 10 priority polymers: PE, PP, PS, PET, PMMA, PU, PC, PA, PTFE, PVC
- **Quality Control (QC)**
  - Containing deuterated Polymers
    deuterated PE (dPE),
    deuterated PS (dPS) or both
- **Simulated Aging**
  - Contains UV-degraded polymers (PE, PP, PS, PET, PVC)

Technical Properties

- **12 different polymers** available as fragments
- **4 size fractions** available (Min Ferret Diameter)
  - 20-25 µm
  - 25-50 µm
  - 50-100 µm
  - 100-200 µm
- **Particle count** between 50 and 150
- **Exact number of particles** per tablet on the label of the packaging
- **Plastic-free packaging**
- **Deuterated Polymers** as internal standards

For more information visit our website:

www.miqa-lab.com

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Priority Tablet Complete and Lite

PlastiTrax® Priority Kit is designed to meet the demands of particle based microplastic analysis. **Each tablet includes the most relevant polymers (Complete: PE, PP, PS, PET, PVC, PU, PC, PTFE, PA, PMMA)** found in environmental and industrial samples, allowing for precise **method validation** and **quality control.**

Regulatory Guidance
Aligned with the EU Drinking Water Directive and ISO 16094-2.

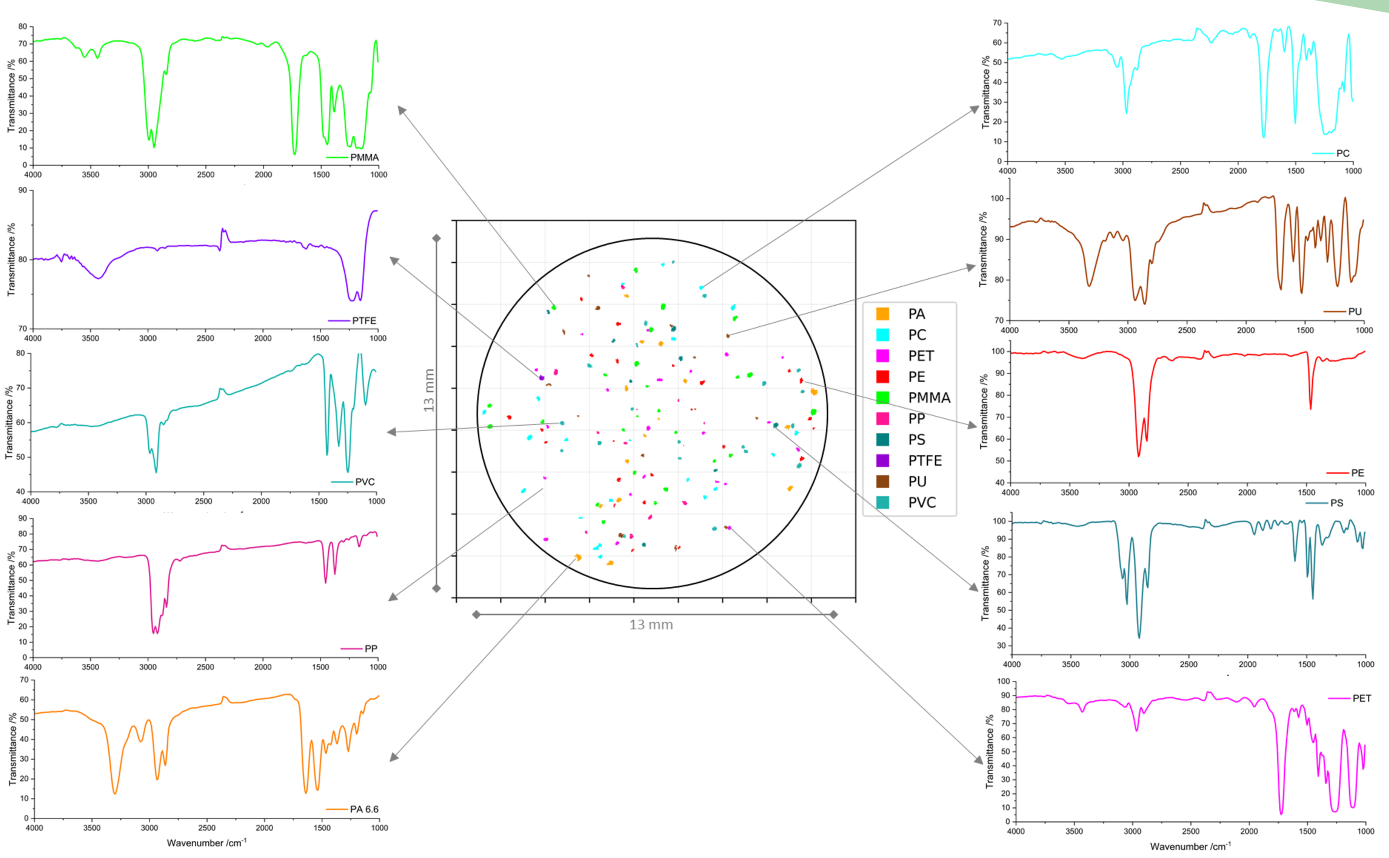
Customizable Particle Size
Available in 20-25, 25-50 µm and 50-100 µm.

All-in-One Solution
All 10 priority polymers in a single tablet: PE, PP, PS, PVC, PET, PU, PC, PMMA, PA, PTFE.

Reliable & Reproducible
Precisely manufactured with 50 to 150 particles per tablet and information about the exact number of particles per polymer.

Easy handling
Water soluble for seamless workflow integration.

How does a tablet look like?



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NEW: QC Tablet with deuterated Polymers

The PlastiTrax® QC Tablet provides a robust **internal standard for quality control** and recovery rate assessments in complex matrices. Utilizing **deuterated polystyrene (dPS)** and **deuterated polyethylene (dPE)**, it ensures a clear spectral distinction from environmental microplastics while maintaining the same physical properties as conventional polymers.

- **Reliable Internal Standard**
  Deuterated polymers are spectrally distinct in both FT-IR and Raman spectroscopy.
- **Automated QA/QC**
  Seamless integration into analytical workflows and no dependence on optical evaluation.
- **Defined Particle Count**
  Each tablet contains 50 to 150 dPS or dPE particles, with the exact number stated on the packaging.
- **Physical Similarity**
  Very close density and identical shape ensure realistic recovery assessments.
- **Easy Application**
  Water-soluble KBr matrix allows for simple integration into existing methods.

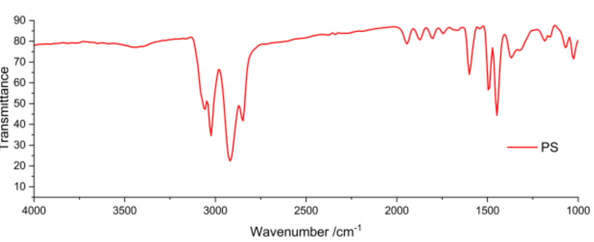
Direct comparison of PS and dPS*

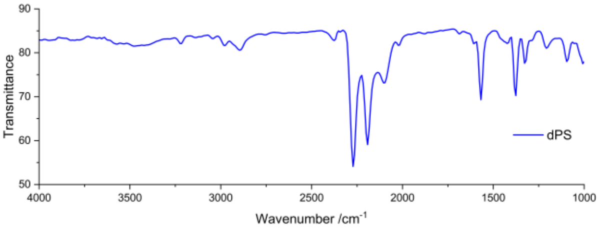
PS

dPS

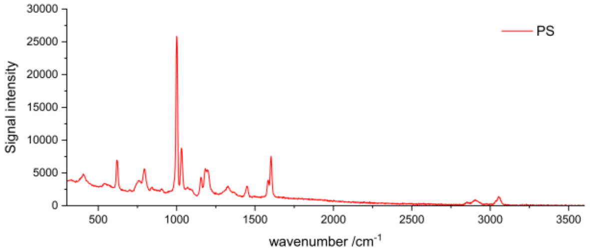
Optical

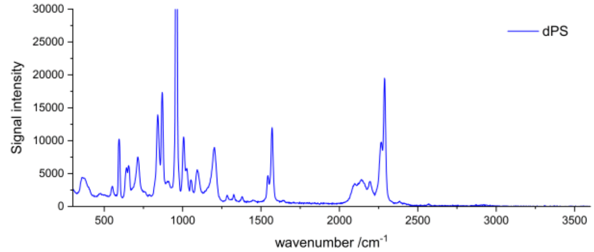
FTIR





Raman





* Spectra and information about PE and dPE can be found on our website.

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Standard Operating Procedure (SOP)

for the use of PlastiTrax MP Reference Materials

1


PlastiTrax®

Priority Complete

Art.No.: PC.2550.

SKU: 000362

Polymer	Size /µm	Particle count
PA	25-50	13
PE	25-50	6
PP	25-50	28
PS	25-50	14
PC	25-50	4
PMMA	25-50	1
PU	25-50	13
PVC	25-50	11
PET	25-50	13
PTFE	25-50	8

Detected Contamination: -

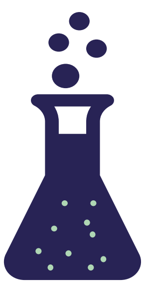
Carefully remove the tablet with tweezers

To ensure minimal contamination, each PlastiTrax® tablet is **double-sealed in aluminum foil**. Begin by carefully **cutting the outer packaging** along the dotted lines using clean scissors or a scalpel. Using clean tweezers, remove the inner foil pouch from the outer packaging, avoiding direct contact with your hands. In the next step, **unfold the inner foil** carefully with the tweezers and remove the tablet for further processing. Information about the count of particles per polymer type is provided on the package label and can be used directly for documentation and calculation purposes.

2

In the second step, the tablet can be dissolved in any aqueous matrix, depending on the intended application. To avoid contamination and biased recovery rates, only filtered solvents or water (pore size 0.22 µm) should be used, and all containers must be thoroughly rinsed and clean. Ideally, all handling should take place in a laminar flow bench or cleanroom environment. Once added to the liquid, the tablet dissolves within one minute under gentle swirling, thereby releasing the embedded particles into the sample

3



In the third step, sample preparation should be carried out according to the specific matrix being analyzed. In cases involving highly complex or heavily contaminated matrices, we recommend using the QC Kit with deuterated polymers to avoid biased recovery rates and to ensure more accurate quality control. Proceed with the preparation steps as required by your protocol, up to the point of filtration and detection using your chosen analytical detection method.

4

In the fourth step, the acquired data are analyzed. The tablets can also be used to expand spectral databases, particularly by including aged polymer spectra. The use of deuterated polymers enables fully automated data evaluation, independent of optical imaging, once their spectra have been added to the spectral library. The particle count required for recovery calculations can be found on the tablet's package label.

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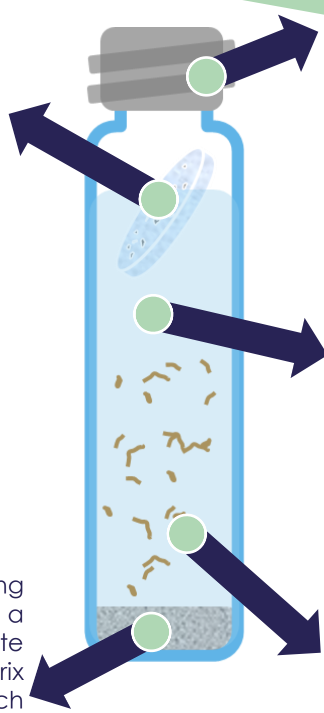
Product Information PlastiTrax® Artificial Test Samples

Our PlastiTrax® Artificial Test Samples are designed to provide realistic yet fully reproducible matrices for method development and performance verification. Each sample is prepared in thoroughly rinsed and cleaned glass GC vials equipped with PTFE septa. The defined matrix components (anorganic and/or organic) is combined with one Priority Complete tablet, followed by the addition of 20 mL of filtered water (0.22 µm). To further enhance environmental relevance, the product is now also available with "real-life" MPs (Real Plastix) generated from common consumer products such as PET bottles, yogurt cups, and PE packaging films. This preparation results in a realistic, application-oriented sample that can be used for method optimization and validation. Depending on the matrix, specific sample preparation steps can be systematically evaluated and improved. For example, sea sand samples (Artificial Test Sample III) are particularly suitable for optimizing density separation procedures. As all samples contain the complete set of 10 priority polymers, the influence of polymer density on recovery can be assessed. In addition, the availability of different particle size fractions allows the evaluation of size-dependent analytical performance.



PlastiTrax® Priority Complete

The Priority Complete tablet contains a defined number of the 10 priority polymers. As with all our tablets, the exact number of embedded particles has been determined by µFTIR analysis to ensure traceability and accuracy. Once added to the aqueous matrix, the tablet dissolves completely and releases the particles into the sample. The precise particle count is indicated on the label of the vial.

NEW: To enhance environmental relevance, the product is also available with "real-life" MPs (Real Plastix) derived from common consumer products such as PET bottles, yogurt cups, and PE films.

Anorganic Matrix

ensure a low background level. Depending on the application, $CaCO_3$, sea sand, or a combination of both can be used to simulate a realistic inorganic environmental matrix while maintaining contamination control. Such matrices require appropriate sample preparation steps, including chemical digestion and density separation, allowing these procedures to be systematically tested and optimized.

Pre-cleaned GC-glass vial

The GC glass vials used for the Artificial Test Samples are thoroughly pre-cleaned and rinsed to minimize background contamination. Each vial is equipped with a high-quality PTFE septum to ensure chemical inertness and prevent the introduction of polymer-based contaminants.

Filtered Water

The water used for sample preparation is filtered through a 0.22 µm cellulose acetate membrane to minimize potential contamination. It rapidly dissolves the KBr tablet, ensuring the controlled release of the embedded particles into the matrix. This approach creates a reproducible sample environment, enabling objective evaluation and optimization of analytical procedures for complex matrices.

Cellulose Matrix

The cellulose matrix is produced through a controlled drying and cryogenic milling process. Wood was used as the base material, and by removing the outer cut surfaces prior to processing, potential contamination was minimized as far as possible. The resulting cellulose matrix is specifically designed to mimic realistic environmental samples and is particularly suitable for testing and optimizing chemical digestion procedures.

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PlastiTrax® Kits and Artificial Test Samples

Contain multiple tablets to support a range of applications, offering tailored solutions for analytical applications and quality control scenarios.

We have developed a range of **PlastiTrax® Kits** to meet various analytical needs and support method development. These include Starter Kits and Test Kits for evaluating the general handling and performance of the PlastiTrax® tablets, as well as specialized QA/QC Kits containing deuterated polymers for enhanced quality assurance and recovery validation. Additionally, a dedicated ISO 16094-2 Kit is available, specifically designed to meet all requirements of the standard and ensure full conformity.To further support method validation under realistic conditions, we also offer Artificial Test Samples that simulate real-world matrices but contain a defined number of microplastic particles, enabling traceable and reproducible assessments. These test samples are specially designed to provide a reproducible matrix, allowing specific sample preparation steps to be tested and optimized as a foundation for generating reliable and meaningful analytical results.

Portfolio PlastiTrax® Kits

- **Test Kit**
  - Get to know the PlastiTrax® product range
- **Starter Kit**
  - Ideal for laboratories new to microplastic analysis - includes larger to smaller particle sizes for a stepwise introduction.
- **ISO 16094:2 2025 Kit**
  - Includes six tablets with defined particle numbers and varying size ranges for recovery determination in accordance with the ISO 16094-2 guideline.
- **ISO 16094:2 2025 Extended Kit**
  - Includes additional tablets to fully meet the ISO requirements, supporting both recovery determination and HQI (Hit Quality Index) evaluation across a range of particle sizes and quantities.
- **QC Implementation Kit**
  - Supports the implementation of a QC workflow using deuterated polymers across multiple size fractions for robust and traceable quality control in microplastic analysis.

Artificial Test Samples

- **Artificial Test Sample I**
- **Artificial Test Sample II**
- **Artificial Test Sample III**
- **Artificial Test Sample IV**
- **Artificial Test Sample V**

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Precision Driven Microplastic Reference Materials

PlastiTrax® Catalogue & Pricing Tablets I

Complete overview of all available PlastiTrax® products - serving as a basis for ordering, quote requests, or product comparison.

Single Polymer Tablet

Polymer	Size fractions	Art.No.	Price €
PE	20-25 µm	SP.PE.2025	120 €
	25-50 µm	SP.PE.2550	100 €
	50-100 µm	SP.PE.50100	100 €
	100-200 µm	SP.PE.100200	100 €
PP	20-25 µm	SP.PP.2025	120 €
	25-50 µm	SP.PP.2550	100 €
	50-100 µm	SP.PP.50100	100 €
	100-200 µm	SP.PP.100200	100 €
PS	20-25 µm	SP.PS.2025	120 €
	25-50 µm	SP. PS.2550	100 €
	50-100 µm	SP. PS.50100	100 €
	100-200 µm	SP. PS.100200	100 €
PVC	20-25 µm	SP. PVC.2025	120 €
	25-50 µm	SP. PVC.2550	100 €
	50-100 µm	SP. PVC.50100	100 €
	100-200 µm	SP. PVC.100200	100 €
PET	20-25 µm	SP. PET.2025	120 €
	25-50 µm	SP. PET.2550	100 €
	50-100 µm	SP. PET.50100	100 €
	100-200 µm	SP. PET.100200	100 €

Single Polymer Tablet

Polymer	Size fractions	Art.No.	Price €
PU	20-25 µm	SP. PU.2025	120 €
	25-50 µm	SP. PU.2550	100 €
	50-100 µm	SP. PU.50100	100 €
	100-200 µm	SP. PU.100200	100 €
PC	20-25 µm	SP. PC.2025	120 €
	25-50 µm	SP. PC.2550	100 €
	50-100 µm	SP. PC.50100	100 €
	100-200 µm	SP. PC.100200	100 €
PMMA	20-25 µm	SP. PMMA.2025	120 €
	25-50 µm	SP. PMMA.2550	100 €
	50-100 µm	SP. PMMA.50100	100 €
	100-200 µm	SP. PMMA.100200	100 €
PA	20-25 µm	SP. PA.2025	120 €
	25-50 µm	SP. PA.2550	100 €
	50-100 µm	SP. PA.50100	100 €
	100-200 µm	SP. PA.100200	100 €
PTFE	20-25 µm	SP. PTFE.2025	120 €
	25-50 µm	SP. PTFE.2550	100 €
	50-100 µm	SP. PTFE.50100	100 €
	100-200 µm	SP. PTFE.100200	100 €

Priority Lite

Polymer	Size fractions	Art.No.	Price €
PE PP PS PVC PET	20-25 µm	PL.2025	120 €
	25-50 µm	PL.2550	100 €
	50-100 µm	PL.50100	100 €

Priority Complete

Polymer		Size fractions	Art.No.	Price €
PE PP PS PVC PET	PU PA PC PMMA PTFE	20-25 µm	PC.2025	130 €
		25-50 µm	PC.2550	110 €
		50-100 µm	PC.50100	110 €

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PlastiTrax® Catalogue & Pricing Tablets II

Complete overview of all available PlastiTrax® products - serving as a basis for ordering, quote requests, or product comparison.

Basic I

Polymer	Size fractions	Art.No.	Price €
PE PS	20-25 µm	BA.PEPS.2025	125 €
	25-50 µm	BA.PEPS.2550	105 €
	50-100 µm	BA.PEPS.50100	105 €
	100-200 µm	BA.PEPS.100200	105 €
PE PVC	20-25 µm	BA.PEPS.2025	125 €
	25-50 µm	BA.PEPS.2550	105 €
	50-100 µm	BA.PEPS.50100	105 €
	100-200 µm	BA.PEPS.100200	105 €
PP PS	20-25 µm	BA.PPPS.2025	125 €
	25-50 µm	BA. PPPS.2550	105 €
	50-100 µm	BA. PPPS.50100	105 €
	100-200 µm	BA. PPPS.100200	105 €

Basic II

Polymer	Size fractions	Art.No.	Price €
PP PVC	20-25 µm	BA.PPPVC.2025	125 €
	25-50 µm	BA. PPPVC.2550	105 €
	50-100 µm	BA. PPPVC.50100	105 €
	100-200 µm	BA. PPPVC.100200	105 €
PP PET	20-25 µm	BA.PPPET.2025	125 €
	25-50 µm	BA. PPPET.2550	105 €
	50-100 µm	BA. PPPET.50100	105 €
	100-200 µm	BA. PPPET.100200	105 €
PE PET	20-25 µm	BA.PEPET.2025	125 €
	25-50 µm	BA. PEPET.2550	105 €
	50-100 µm	BA. PEPET.50100	105 €
	100-200 µm	BA. PEPET.100200	105 €

Simulated Aging

Polymer	Size fractions	Art.No.	Price €
PE (UV aged) PP (UV aged) PS (UV aged) PVC (UV aged) PET (UV aged)	20-25 µm	SA.2025	180 €
	25-50 µm	SA.2550	160 €
	50-100 µm	SA.50100	160 €

Real Plastix

Polymer	Size fractions	Art.No.	Price €
PE PP PS PVC PET	20-25 µm	RP.2025	150 €
	25-50 µm	RP.2550	130 €
	50-100 µm	RP.50100	130 €

QC

Polymer	Size fractions	Art.No.	Price €
dPS	20-30 µm	QC.DPS.2030	120 €
	25-50 µm	QC. DPS.2550	100 €
	50-100 µm	QC. DPS.50100	100 €
	30-70 µm	QC. DPS.3070	100 €
	70-120 µm	QC. DPS.70120	100 €
	120-200 µm	QC. DPS.120200	100 €
dPE	20-30 µm	QC.DPE.2030	120 €
	30-70 µm	QC.DPE.3070	100 €
	70-120 µm	QC.DPE.70120	100 €
	120-200 µm	QC.DPE.120200	100 €
dPS dPE	20-30 µm	QC.DPEDPS.2030	125 €
	30-70 µm	QC. DPEDPS.3070	105 €
	70-120 µm	QC. DPEDPS.70120	105 €
	120-200 µm	QC. DPEDPS.120200	105 €

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PlastiTrax® Catalogue & Pricing KITS

Complete overview of all available PlastiTrax® products - serving as a basis for ordering, quote requests, or product comparison.

Kit	Tablet	Individual Size	Price	Kit Sizes Available	Art.No.
Test Kit	Basic PE,PS	*Kit Size	*Individual Price: 550 €*	20-25 µm	TK.1.2025
	Basic PP, PVC	*Kit Size	Kit Price: 500 €	25-50 µm	TK.1.2550
	Priority Complete	*Kit Size		50-100 µm	TK.1.50100
	QC	*Kit Size			
	QC	*Kit Size			
Starter Kit	Basic PE, PS	*Kit Size	*Individual Price: 1125 €*	20-25 µm	SK.1.2025
	Basic PE, PVC	*Kit Size	Kit Price: 1000 €	25-50 µm	SK.1.2550
	Basic PP, PS	*Kit Size		50-100 µm	SK.1.50100
	Basic PP, PVC	*Kit Size			
	Priority Complete	*Kit Size			
	Priority Complete	*Kit Size			
	Priority Complete	*Kit Size			
	QC	*Kit Size			
	QC	*Kit Size			
	QC	*Kit Size			
ISO 16094-2:2025 Kit	Basic PP, PS (Count: 25-75 MPs)	20-25 µm	*Individual Price: 630 €*		IK.1
	Basic PP, PS (Count: 25-75 MPs)	25-50 µm	Kit Price: 570 €		
	Basic PP, PS (Count: 25-75 MPs)	50-100 µm			
	Basic PP, PS (Count: 150-200 MPs)	20-25 µm			
	Basic PP, PS (Count: 150-200 MPs)	25-50 µm			
	Basic PP, PS (Count: 150-200 MPs)	50-100 µm			
ISO 16094-2:2025 Extended Kit	Basic PP, PS (Count: 25-75 MPs)	20-25 µm	*Individual Price: 1180 €*		IK.2
	Basic PP, PS (Count: 25-75 MPs)	25-50 µm	Kit Price: 1070 €		
	Basic PP, PS (Count: 25-75 MPs)	50-100 µm			
	Basic PP, PS (Count: 150-200 MPs)	20-25 µm			
	Basic PP, PS (Count: 150-200 MPs)	25-50 µm			
	Basic PP, PS (Count: 150-200 MPs)	50-100 µm			
	Priority Complete	20-25 µm			
	Priority Complete	25-50 µm			
	Priority Complete	50-100 µm			
	Simulated Aging	25-50 µm			
QC Implementation Kit	QC dPE	70-120 µm	Individual Price: 605 €		QC.1
	QC dPS	70-120 µm	Kit Price: 550 €		
	QC dPE, dPS	20-30 µm			
	QC dPE, dPS	30-70 µm			
	QC dPE, dPS	70-120 µm			
	QC dPE, dPS	120-200 µm			

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*Kit Size: all tablets in this kit have the same size (Kit Sizes Available)

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PlastiTrax® Artificial Test Samples

Artificial Test Samples are not tablets, but ready-to-use sample solutions containing defined matrix components for realistic method validation.

Product Name	Tablet & Matrix	Price	MP Particle Size	Art.No.
Artificial Test Sample I	Priority Complete	170€ (20-25 µm: 190€)	20-25 µm	AT.1.2025
	Cellulose (wood)		25-50 µm	AT.1.2550
	Sea sand		50-100 µm	AT.1.50100
Artificial Test Sample II	Priority Complete	150€ (20-25 µm: 170€)	20-25 µm	AT.2.2025
	Cellulose		25-50 µm	AT.2.2550
			50-100 µm	AT.2.50100
Artificial Test Sample III	Priority Complete	200€ (20-25 µm: 220€)	20-25 µm	AT.3.2025
	Sea sand		25-50 µm	AT.3.2550
			50-100 µm	AT.3.50100
Artificial Test Sample IV (UV-aged)	Simulated Aging (UV aged)	200€ (20-25 µm: 220€)	20-25 µm	AT.4.2025
	Cellulose (wood)		25-50 µm	AT.4.2550
	Sea sand		50-100 µm	AT.4.50100
Artificial Test Sample V (Real Plastix)	Real Plastix	170 € (20-25 µm: 190 €)	20-25 µm	AT.5.2025
	Cellulose (wood)		25-50 µm	AT.5.2550
	Sea sand		50-100 µm	AT.5.50100

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