

Solid-Phase Extraction Plus Cartridges

Achieve highly reproducible SPE results with Waters Sep-Pak and Oasis Sample Extraction Cartridges

INTRODUCTION

Waters™ Sep-Pak™ Cartridges and Plates enable speed and selectivity while simplifying the HPLC, GC, and LC-MS sample preparation process.

- High quality sorbents
- More than 200 chemistries and format combinations
- Reversed-phase, normal-phase, ion-exchange, and application-specific specialty chemistries

Waters Oasis™ Sample Extraction Cartridges and Plates deliver unmatched purity, consistency, and quality for sample analysis.

- Wide choice of configurations, particle sizes, and sorbent chemistries
- Available with all six patented Oasis sorbents—PRiME HLB, HLB, MCX, MAX, WCX, and WAX
- High recovery and reproducible results for a wide range of compounds

Luer-Inlet Plus Cartridges

- Compliant with ISO 9001
- Female Luer inlet accepts male Luer tip.
- Three cartridge configurations (Plus long, Plus short and Plus light) offering different weights to meet various capacity needs for specific applications
- Broad range of sorbent chemistries that are tested under rigid specifications for chromatographic activities, retention, and selectivity.
- The Plus design is molded for precise dimensions making the cartridge suitable for automation equipment
- Color-coded ring compresses and seals the cartridge while identifying sorbent type



Luer-Inlet Plus Cartridges.

Double Luer-Lock Plus Cartridges

- Fully compliant with ISO 80369-7 Standard Luer-Lock adaptors, ease-of-connection with any other ISO standard tubings, adaptors and devices.
- Secure Luer-locking connection
 - No dislodgement due to high pressure
 - No spillage which results in no hazardous material cleanup
 - Safely connect multiple Plus cartridges in-series
- Maintain continuity with current Waters SPE Cartridge offerings
- Luer-Tip to Luer-Lock connection capability



Luer-Lock Cartridges.

SORBENT CHEMISTRIES

Reversed Phase (silica based)

- **tC₂** – trifunctional bonded phase with low hydrophobicity
- **C₈** – monofunctional bonded phase with moderate hydrophobicity
- **C₁₈** – monofunctional bonded phase with high hydrophobicity
- **tC₁₈** – trifunctional bonded phase with high hydrophobicity

Reversed Phase (copolymer based)

- **Oasis HLB** – macroporous copolymer with high hydrophobicity (higher capacity than C₁₈)
- **Oasis PRiME HLB** – proprietary sorbent that is designed to effectively remove phospholipids and fats, and some pigments such as chlorophylls

Reversed or Normal Phase (less polar alternative to silica)

- **Aminopropyl (NH₂)** – silica based basic polar bonded phase
- **Cyanopropyl (CN)** – silica based polar bonded phase
- **Diol** – silica based neutral polar bonded phase
- **PSA** – silica base bonded with primary secondary amine (stronger base than NH₂)

Normal Phase

- **Silica** – polar surface used to adsorb analytes from non-polar solvents
- **Alumina (A, B, N)** – a highly active grade of alumina that is available in acidic, basic and neutral surface chemistries
- **Florisil®** – magnesium metasilicate (MgO·SiO₂), a polar, highly active, weakly basic sorbent for adsorption of low-to-moderate polarity species from nonaqueous solutions

Ion Exchange (silica based)

- **Accell Plus QMA** – hydrophilic strong anion exchange with large pore size
- **Accell Plus CM** – hydrophilic weak cation exchange with large pore size

Mix-Mode Ion Exchange (copolymer based)

- **Oasis MCX** – reversed-phase and strong cation-exchange functional groups
- **Oasis MAX** – reversed-phase and strong anion-exchange functional groups
- **Oasis WCX** – reversed-phase and weak cation-exchange functional groups
- **Oasis WAX** – reversed-phase and weak anion-exchange functional groups

Specialty Application

- **Sep-Pak Dry** – anhydrous Na₂SO₄ for removal of residual water from non-aqueous extracts
- **DNPH-Silica** – diphenylhydrazine coated on silica for air analysis of aldehydes and ketones
- **XPoSure** – diphenylhydrazine coated on silica for indoor air monitoring of aldehydes and ketones (larger particle size than DNPH-silica)
- **Sep-Pak Ozone Scrubber** – potassium iodide used in series with DNPH-silica and XPoSure Cartridges to remove ozone interferences
- **AC-2** – activated carbon used to concentrate highly polar small molecules such as 1,4-dioxane, pesticides and herbicides
- **PS-2** – styrene-divinylbenzene copolymer used to concentrate pesticides, herbicides and PFAS compounds
- **Potassium Carbonate** – a solution of potassium carbonate can be used to ion-exchange chloride ion with carbonate ion

ORDERING INFORMATION

Sorbent Chemistry		Description	Luer-Tip		Double Luer-Lock	
			Qty/Box	P/N	Qty/Box	P/N
Plus Long Cartridges	C ₁₈	Sep-Pak Environmental C ₁₈ Plus Long Cartridges	50	WAT023635		
	tC ₁₈	Sep-Pak Environmental tC ₁₈ Plus Long Cartridges	50	WAT036800	50	WAT036800DL
	Alumina A	Sep-Pak Alumina A Plus Long Cartridges	50	WAT020500		
	Alumina B	Sep-Pak Alumina B Plus Long Cartridges	50	WAT020505		
	Alumina N	Sep-Pak Alumina N Plus Long Cartridges	50	WAT020510	50	WAT020510DL
	Oasis HLB	Oasis HLB Plus Long Cartridges, 60 µm	100	186008082		
	Silica	Sep-Pak Silica Plus Long Cartridges	50	WAT020520		
			500	WAT094293		
			2000	WAT036580		
	Potassium Carbonate	Potassium Carbonate Plus Long Cartridges	50	186009005		
	Florisil	Sep-Pak Florisil Plus Long Cartridges	50	WAT020525		
			2000	WAT036955		
	DNPH Silica	Sep-Pak DNPH Silica Plus Long Cartridges	20	WAT039550		
	Sodium Sulfate	Sep-Pak Dry Plus Long Cartridges	50	WAT054265		
Plus Short Cartridges	C ₁₈	Sep-Pak C ₁₈ Plus Short Cartridges	500	WAT094291		
			50	WAT020515	50	WAT020515DL
			2000	WAT036575		
	tC ₁₈	Sep-Pak tC ₁₈ Plus Short Cartridges	50	WAT036810	50	WAT036810DL
			500	WAT094292		
	C ₈	Sep-Pak C ₈ Plus Short Cartridges	50	WAT036775		
	tC ₂	Sep-Pak tC ₂ Plus Short Cartridges	50	WAT052720		
	QMA	Sep-Pak QMA Plus Short Cartridges	50	WAT020545		
	CM	Sep-Pak CM Plus Short Cartridges	50	WAT020550		
	Alumina N	Sep-Pak Alumina N Plus Short Cartridges	50	186009228		
	Oasis HLB	Oasis HLB Plus Short Cartridges	50	186000132	50	186000132DL
	Oasis MCX	Oasis MCX Plus Short Cartridges	50	186003516		
	Oasis MAX	Oasis MAX Plus Short Cartridges	50	186003517		
	Oasis WCX	Oasis WCX Plus Cartridges	50	186003518		
	Oasis WAX	Oasis WAX Plus Cartridges	50	186003519		
	CN	Sep-Pak CN Plus Short Cartridges	50	WAT020540		
	Diol	Sep-Pak Diol Plus Short Cartridges	50	WAT020530		
	NH ₂	Sep-Pak NH ₂ Plus Short Cartridges	50	WAT020535		
	AC-2	Sep-Pak AC-2 Plus Short Cartridges	50	JJAN20229		
	Styrene-DVB Copolymer	Sep-Pak PS-2 Plus Short Cartridges	50	JJAN20131		
			500	JJAN20226		
	Oasis PRiME HLB	Oasis PRiME HLB Plus Short Cartridges	50	186008887		
	PSA	Sep-Pak PSA Plus Short Cartridges	50	186004538		
	DNPH Silica	Sep-Pak DNPH Silica Plus Short Cartridges	20	WAT037500		
	DNPH Silica	Sep-Pak XPoSure Plus Short Cartridges	20	WAT047205		
	Potassium Iodide (KI)	Sep-Pak Ozone Scrubber Plus Short Cartridges	20	WAT054420		

Sorbent Chemistry			Luer-Tip		Double Luer-Lock	
			Qty/Box	P/N	Qty/Box	P/N
Plus Light Cartridges	C ₁₈	Sep-Pak C ₁₈ Plus Light Cartridges	50	WAT023501	50	WAT023501DL
	tC ₁₈	Sep-Pak tC ₁₈ Plus Light Cartridges	50	WAT036805		
	C ₈	Sep-Pak C ₈ Plus Light Cartridges	50	WAT036770		
	tC ₂	Sep-Pak tC ₂ Plus Light Cartridges	50	WAT052725		
	QMA	Sep-Pak QMA Plus Light Cartridges	50	WAT023525	50	WAT023525DL
	QMA Carbonate	Sep-Pak QMA Carbonate Plus Light Cartridges	50	186004051	50	186004051DL
		Sep-Pak QMA Carbonate 46 mg Plus Light Cartridges	50	186004540		
	CM	Sep-Pak CM Plus Light Cartridges	50	WAT023531		
	Alumina A	Sep-Pak Alumina A Plus Light Cartridges	50	WAT023549		
	Alumina B	Sep-Pak Alumina B Plus Light Cartridges	50	WAT023555		
	Alumina N	Sep-Pak Alumina N Plus Light Cartridges	50	WAT023561		
	Oasis HLB	Oasis HLB 30 mg Plus Short Cartidges	50	186005125		
	Silica	Sep-Pak Silica Plus Light Cartridges	50	WAT023537		
	CN	Sep-Pak CN Plus Light Cartridges	50	WAT023507		
	Diol	Sep-Pak Diol Plus Light Cartridges	50	WAT023519		
	NH ₂	Sep-Pak NH ₂ Plus Light Cartridges	50	WAT023513		
	Florisil	Sep-Pak Florisil Plus Light Cartridges	50	WAT023543		
	PSA	Sep-Pak PSA Plus Light Cartridges	50	186004578		
	Oasis PRiME HLB	Oasis PRiME HLB Plus Light Cartridges	50	186008886		

Waters

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