

Biotage® Universal Phase Separator

The Biotage® Universal Phase Separator is a simple solution to the classic problem of separating an upper organic phase from an aqueous during a traditional liquid-liquid extraction.



Biotage® Universal Phase Separators are the latest concept in phase separation. These columns are fitted with a selectively permeable, optimized insert that separates aqueous phases from organic solvents under gravity (Figure 1).

Ready to Use

The design is as simple as it is ingenious. There are no moving parts and nothing to prime, it's all achieved by hydrophobic/hydrophilic interactions. The cartridges arrive in kit form and are ready to use once assembled.

When a compound is partitioned between two immiscible liquids due to differences in solubility, the organic phase can pass through the separator wherever it is located (Figure 2), while the aqueous phase stays in the separator. There is an automatic cut-off at the organic/aqueous interface.

Example: Typical Procedure

Add immiscible organic component to a 20 mL glass screw cap vial, and add water as necessary. Replace the screw cap and wrap in lab film. Shake vial to thoroughly mix contents.



Figure 1: Biotage® Universal Phase Separator. Left: kit form as supplied (2 tubes, 2 screw fittings and 3 inserts), right: assembled.

If necessary, allow to settle or simply pour contents into a 70 mL Biotage® Universal Phase Separator, taking care to ensure the liquid does not pass through the center insert drain hole. Use the supplied cap to cover the center insert.

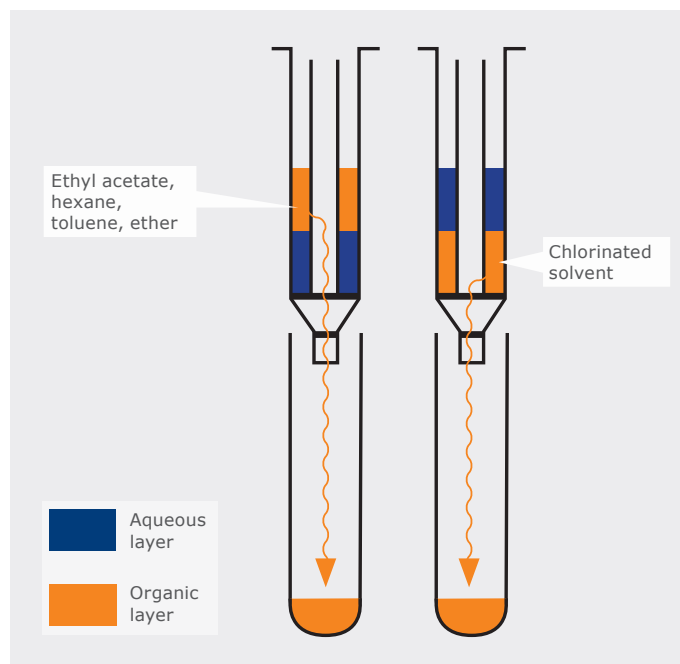


Figure 2: The organic phase can pass through the Biotage® Universal Phase Separator, irrespective of being above or below the aqueous layer.

Ordering information

Part Number	Description	Qty.
120-1930-V	Universal Phase Separator, 70 mL capacity Starter Kit: 2 tubes (including Luer fitting), 3 inserts, 3 caps, 2 Luer tips, instructions	PK
120-1931-V	Universal Phase Separator, 70 mL capacity Refill: 25 inserts, 25 splash guard caps, instructions	25/PK

Accessories

123-2016	16 mm collection tube rack	1
123-2019	19 mm collection tube rack	1
121-0009	Universal PTFE stopcock	10
121-0001	PTFE stopcock/needle unit	10
802-0250-M	Sodium sulphate drying cartridge	50

Solvent	Solvent Flow (mL/min)	Water Hold Up	Polarity Index	Water Solubility (w/w%)
Heptane/hexane	7.0	12+ h	0.1	0.0004/0.0012
Petroleum ether	6.0	12+ h	0.1	-
Toluene	7.5	12+ h	2.4	0.05
Dichloromethane	15	12+ h	3.1	1.3
Ethyl acetate*	8-10	5-120 min	4.4	8.7

*Depending on ionic content, separating ethyl acetate/aqueous mixtures gives a water retention time of between 5 and 120 minutes. When a sodium sulphate drying cartridge is also added in-line, retention time increases significantly more.

Table 1: Universal Phase Separator performance with six common solvents.

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