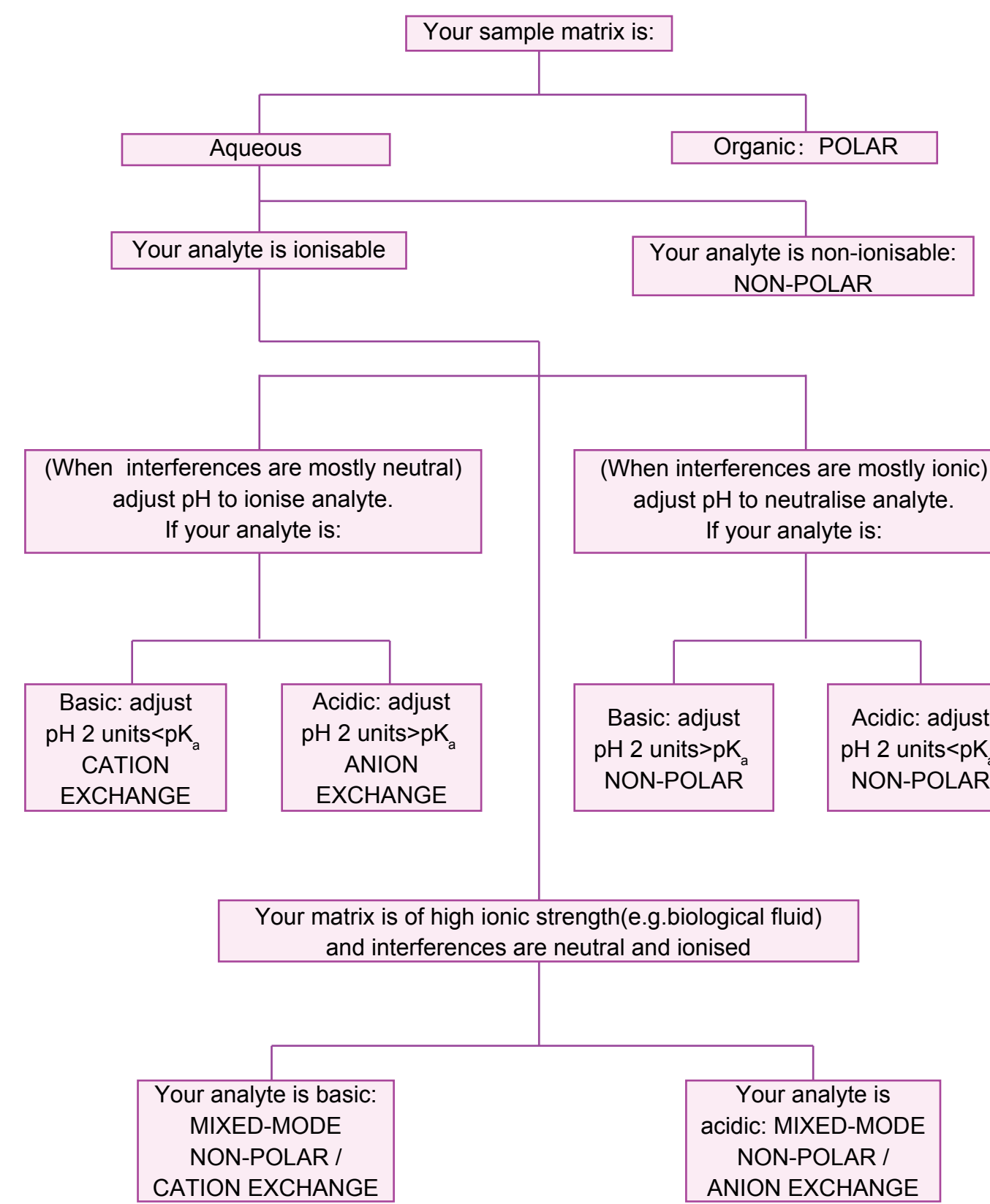


SPE Product Cross Reference Table

	Agela	Waters	Supelco	Agilent	Varian
C18 (End Capped)	Cleanert C18	Sep-pak C18	ENVI-18	—	Bond Elut C18
C18 (Without End Capping)	Cleanert C18-N	—	—	AccuBOND C18	Bond Elut C18-OH
C8	Cleanert C8	Sep-pak C8	ENVI-8	AccuBOND C8	Bond Elut C8
Cyano Group	Cleanert CN	Sep-pak CN	LC-CN	AccuBOND CN	Bond Elut CN
Amino Group	Cleanert NH ₂	Sep-pak NH ₂	LC-NH ₂	AccuBOND NH ₂	Bond Elut NH ₂
Propyl Ethylene Diamine	Cleanert PSA	—	—	—	Bond Elut PSA
Quaternary Ammonium Salt (Strong Anion-exchange Cartridge)	Cleanert SAX	Accell Plus QMA	LC-SAX	AccuBOND SAX	Bond Elut SAX
Carboxyl Group (Weak Cation-exchange Cartridge)	Cleanert COOH	Accell Plus CM	LC-WCX	—	Bond Elut CBA
Propylsulfonic Acid	Cleanert PRS	—	—	—	Bond Elut PRS
Benzene Sulfonic Acid (Strong Cation-exchange Cartridge)	Cleanert SCX	—	LC-SCX	AccuBOND SCX	Bond Elut SCX
Silica Gel	Cleanert Silica	Sep-pak Silica	LC-Silica	AccuBOND Silica	Bond Elut Silica
Diol	Cleanert Diol	Sep-pak Diol	LC-Diol	AccuBOND Diol	Bond Elut Diol
Polystyrene/Divinyl-benzene	Cleanert PS	—	ENVI-Chrom P	AccuBOND ENV PS-DVB	—
Polar Polymer Cartridge	Cleanert PEP	Oasis HLB	—	—	Bond Elut® Plexa
Mixed Anion-exchange Cartridge	Cleanert PAX	Oasis MAX	—	—	—
Mixed Cation-exchange Cartridge	Cleanert PCX	Oasis MCX	—	—	—
Cartridge Specialized for Sulfonyleureas	Cleanert HXN	—	—	—	—
Magnesium Silicate (Florisil)	Cleanert Florisil	Sep-pak Florisil	LC Florisil	—	Bond Elut FL
Graphitized Carbon	Cleanert PestiCarb	—	ENVI Carb	—	—
Neutral Alumina	Cleanert Alumina N	Sep-pak Alumina N	LC-Alumina N	AccuBOND Alumina N	Bond Elut Alumina N
Acidic Alumina	Cleanert Alumina A	Sep-pak Alumina A	LC-Alumina A	AccuBOND Alumina A	Bond Elut Alumina A
Basic Alumina	Cleanert Alumina B	Sep-pak Alumina B	LC-Alumina B	AccuBOND Alumina B	Bond Elut Alumina B
Mixed Graphitized Carbon and Amino Group Cartridge	Cleanert PestiCarb/NH ₂	Sep-pak Carb/ NH ₂	ENVI Carb/ NH ₂	—	—
Cartridge Specialized for Sulfanilamides	Cleanert SUL-5	—	—	—	—
DNPH-Silica Cartridge (Specialized for Pretreatment of Aldehydes and Ketones in Air)	Cleanert DNPH-Silica	Sep-pak DNPH-Silica	—	—	—

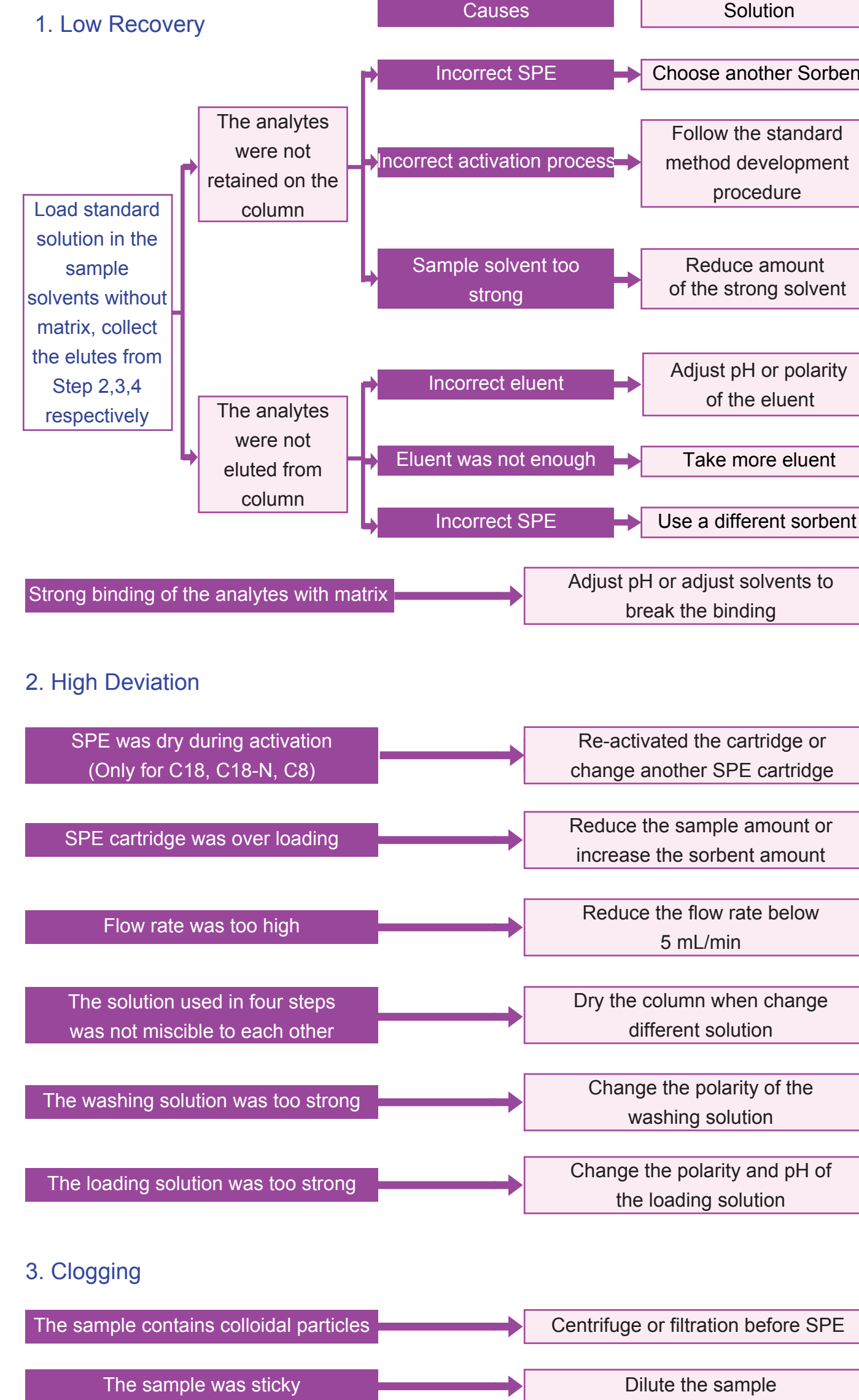
Selection Guide of Sorbent Retention Mechanism



Selection of Column Size, Sample Loading and Elution Volume

Specification	Quantity of Loading Sample	The Minimum Volume of Elution
50 mg/1mL	2.5 mg	125 μ L
100 mg/1mL	5 mg	250 μ L
200 mg/3mL	10 mg	500 μ L
500 mg/6mL	25 mg	1.2 mL
1 g/6mL	50 mg	2.4 mL

Trouble Shooting



Standard Method Development Procedure

Properties	Sorbent Phase Type			
	Normal Phase	Reversed-Phase	Ion Exchange Phase or Mix-phase	
Typical Sorbents	Silica Florisil Amine (NH ₂) Cyano (CN) Diol	PEP series C18 C18-N C8	PAX SAX PWAX	PCX SCX PWCX
Sorbent Polarity	High	Low	High	
Matrix Properties	Organic	Organic or Aqueous	Organic or Aqueous	
Analyte Properties	Slightly to Moderately Polar	Non-Polar or Polar	Acidic	Basic
Retention	Polar ↑ Non-Polar ↓	Non-Polar ↑ polar ↓	Ionic Strength	
Step 1: Activation	Sample solvent or other organic solvents	Water-miscible organic solvents followed by Water	Water-miscible organic solvents followed by aqueous solution with pH adjusted	
Step 2: Sample Loading	Load the sample or with dilution in low polarity solvents	Load the sample or with dilution in high polarity solvents	Load sample or with dilution in high polarity solvents with pH adjusted	
Step 3: Washing	Washing with low-polar solvents	Washing with mixture of aqueous solution or buffer with a small amount polar solvent	Washing with Polar organic solvents followed by aqueous solvents with pH adjustment to maintain analytes ionized	
Step 4: Elution	Eluting with mixture of non-polar and polar solvents	Eluting with non-polar or polar organic solvents	Eluting with polar solvents with pH adjustment	