

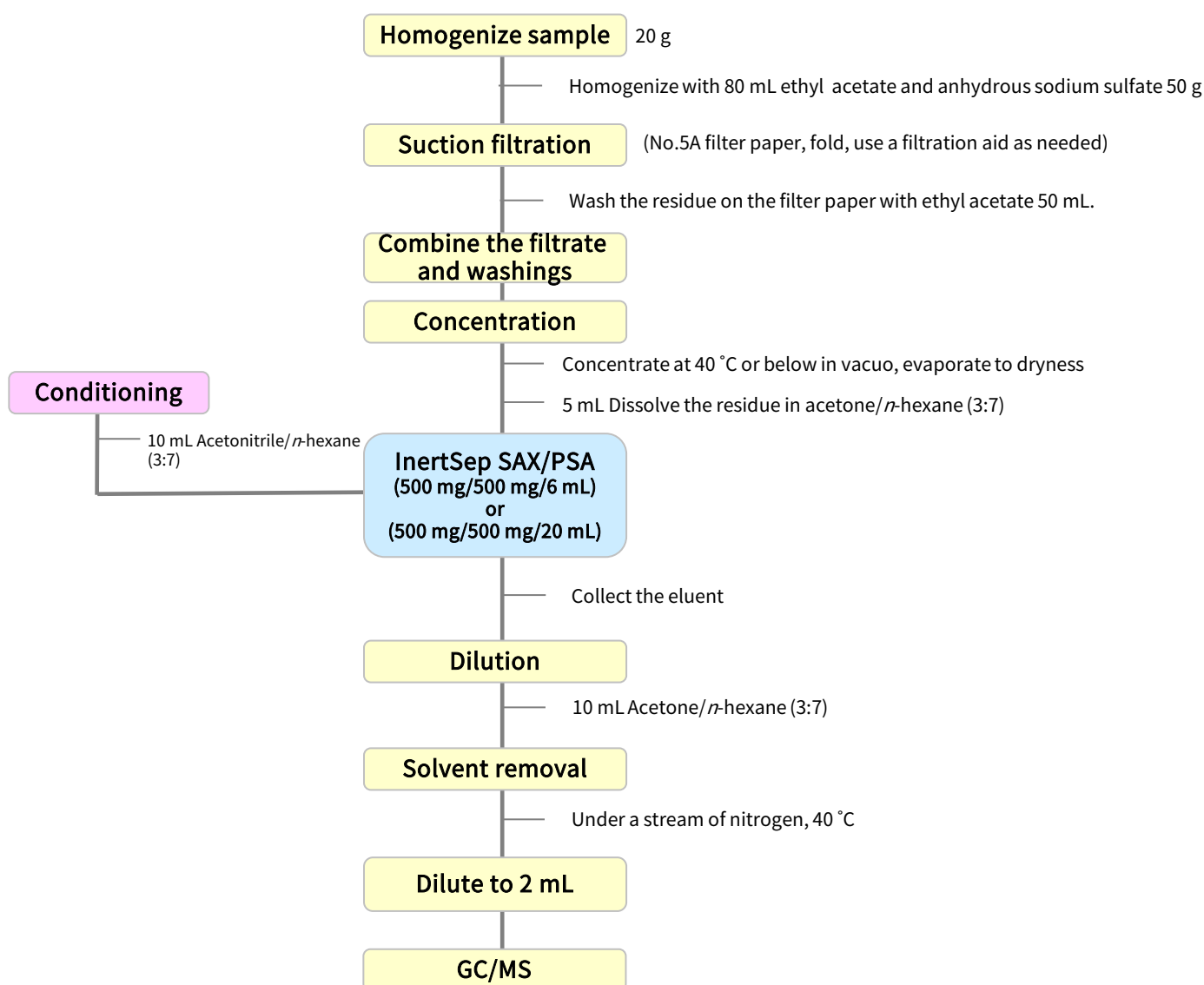
# Analysis of Pesticide Residues using SAX/PSA Minicolumns

In the early 1990s, a rapid screening assay using SAX/PSA laminated mini-columns known as the LUKEII method was developed by the US FDA. In Japan, it has been recognized and utilized as a highly useful screening assay.

The flow diagram below shows an example of the use of ethyl acetate as an extraction solvent for rapid sample pretreatment prior to GC-MS analysis for pesticide residues (with reference to the FDA's LUKE II method).

## 1. Flow diagram of solid phase pretreatment

[Example of pretreatment of pesticide residues using SAX/PSA minicolumns]



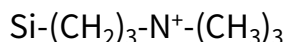
NOTE) This is a method developed by GL Sciences based on literature information.  
Reference: Journal of Health Science, 51(5) 617-627 (2005)

## 2. Products for solid-phase extraction

### [InertSep SAX/PSA]

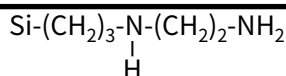
InertSep SAX PSA is a two-layer cartridge for SAX and PSA. InertSep SAX is a solid phase in which a trimethylaminopropyl group is attached to silica gel, and InertSep PSA is a solid phase in which an ethylenediamine N propyl group is attached to silica gel. By making it into two layers it is suitable for sample cleanup for residual pesticide analysis, etc.

#### InertSep SAX



Mean particle size : 45 µm  
 Carbon : 10 %  
 Surface Area : 450 m<sup>2</sup>/g  
 Pore volume : 0.7 mL/g  
 Pore size : 60 Å  
 Ion exchange capacity : 0.7 meq/g  
 PKa : (-)  
 PH range of use : 2 - 8  
 Remarks : OH - ion pair

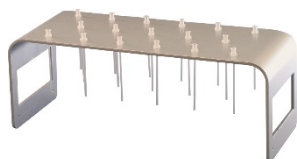
#### InertSep PSA



Mean particle size : 65 µm  
 Carbon : 11.5 %  
 Surface Area : 450 m<sup>2</sup>/g  
 Pore volume : 0.7 mL/g  
 Pore size : 60 Å  
 Ion exchange capacity : 1.5 meq/g  
 PKa : (10.1, 10.9)  
 PH range of use : 2 - 8

Product name	Column size	Qty.	Cat.No.
InertSep SAX/PSA <small>Recommended for this application</small>	250 mg / 250 mg / 3 mL	50 bottles	5010-68100
	500 mg / 500 mg / 6 mL	30 bottles	5010-68101
	500 mg / 500 mg / 20 mL	20 bottles	5010-68104
	1 g / 1 g / 20 mL	20 bottles	5010-68105

### [GL-SPE Gravity Flow Manifold]



This is a simple and inexpensive manifold that is optimal for gravity based solid phase extraction. It is fitted with 24 integrated polypropylene luer fitting delivery tips.

Product name	Qty.	Cat.No.
GL-SPE Gravity Flow Manifold	Sets	5010-50430

### [Empty reservoirs with adapters]



Recommended for this application

A convenient empty reservoir with the adapter already attached, for connection to a solid phase column.

Product name	Qty.	Cat.No.
25 mL reservoir with 1,3,6 mL adapter	12	5010-60015
50 mL reservoir for 12,20 mL adapters	12	5010-60016
200 mL reservoir for 60 mL adapters	12	5010-60017

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