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## Extraction and Dispersive Kits User Guide



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# QuEChERS Kits Selection Chart

## roQ™ Extraction and Dispersive SPE (dSPE)

### Extraction Method

### Sample Size

### Fruit and Vegetable Type

AOAC  
2007.01  
Method

15 g  
Part No. KSO-8911

15 g  
Part No. KSO-8912  
to be used in combination  
with AOAC 2007.01 dSPE  
procedure

Original  
Non-Buffered  
Method

or

10 g  
Part No. KSO-8910  
to be used in combination  
with EN 15662 dSPE  
procedure

EN 15662  
Method

10 g  
Part No. KSO-8909

	Sample Size	General	Fats and Waxes	Pigmented	Highly Pigmented	Pigments and Fats
Method		Part No.	Part No.	Part No.	Part No.	Part No.
AOAC 2007.01	1 mL	KSO-9511	KSO-9512	KSO-9513	–	KSO-9514
	8 mL	KSO-9515	KSO-9516	KSO-9517	–	KSO-9518
EN 15662	1 mL	KSO-9503	KSO-9504	KSO-9505	KSO-9506	–
	6 mL	KSO-9507	KSO-9508	KSO-9509	KSO-9510	–

# AOAC 2007.01 Method

When performing the AOAC QuEChERS Method, two extraction methods can be followed; the buffered AOAC 2007.01 Method or the Original Non-Buffered Method. The buffered AOAC 2007.01 procedure stabilizes sample pH and helps to minimize degradation of pH sensitive pesticide residues (e.g. pymetrozine and sethoxydim).

## Step 1: Extraction

### roQ Extraction Kits

Part numbers:

KSO-8911 (Buffered AOAC 2007.01 Method)

KSO-8912 (Original Non-buffered Method)

1. **HOMOGENIZE** sample using a blender or similar apparatus.
2. **WEIGH** 15 g of homogenized sample into a clean 50 mL tube (provided in roQ Extraction Kits).
3. **ADD** 15 mL of Acetic acid/Acetonitrile (1:99) and internal standard.
4. **DISPENSE** contents of the included packet into the 50 mL tube containing homogenized sample.
5. **SHAKE** vigorously by hand for 1 minute.
6. **CENTRIFUGE** for 5 minutes @ 4000 rpm, making sure that the solid material is at the bottom of the tube and a liquid layer forms on top of the solid material.

The sample is now ready for further cleanup by dispersive SPE (dSPE) (see part numbers and procedures on right). If no further cleanup is desired, the top liquid layer can be removed and analyzed.

## Step 2: Dispersive SPE (dSPE)

### roQ dSPE Kits

Part numbers:

KSO-9511 KSO-9515

KSO-9512 KSO-9516

KSO-9513 KSO-9517

KSO-9514 KSO-9518

1. **TRANSFER** 1 or 8 mL of the supernatant from Step 6 of the extraction process into a 2 mL or 15 mL tube, respectively (provided in roQ dSPE Kits).
2. **SHAKE** vigorously by hand for 30 seconds.
3. **CENTRIFUGE** for 5 minute @ 4000 rpm to separate solid material from the liquid layer.
4. **TRANSFER** desired supernatant to an autosampler vial and analyze via GC or LC methods.

### References

1. Anastassiades et al. J. AOAC International. Vol. 86, No 2, 2003.
2. AOAC Official Method 2007.01, Pesticide Residues in Foods by Acetonitrile Extraction and Partitioning with Magnesium Sulfate.

# EN 15662 Method

When performing the EN 15662 QuEChERS Method, two extraction methods can be followed; the buffered EN 15662 Method or the Original Non-Buffered Method. The buffered EN 15662 Method utilizes a combination of four salts to provide partitioning and buffering of the sample. This buffered procedure stabilizes sample pH and helps to minimize degradation of pH sensitive pesticide residues (e.g. pymetrozine and sethoxydim).

## Step 1: Extraction

### roQ Extraction Kits

Part numbers:

KSO-8909 (Buffered EN 15662 Method)

KSO-8910 (Original Non-buffered Method)

1. **HOMOGENIZE** sample using a blender or similar apparatus.
2. **WEIGH** 10 g of homogenized sample into a clean 50 mL tube (provided in roQ Extraction Kits).
3. **ADD** 10 mL of Acetonitrile and internal standard.
4. **DISPENSE** contents of the included packet into the 50 mL tube containing homogenized sample.
5. **SHAKE** vigorously by hand for 1 minute.
6. **CENTRIFUGE** for 5 minutes @ 4000 rpm, making sure that the solid material is at the bottom of the tube and a liquid layer forms on top of the solid material.

The sample is now ready for further cleanup by dispersive SPE (dSPE) (see part numbers and procedures on right). If no further cleanup is desired, the top liquid layer can be removed and analyzed.

## Step 2: Dispersive SPE (dSPE)

### roQ dSPE Kits

Part numbers:

KSO-9503 KSO-9507

KSO-9504 KSO-9508

KSO-9505 KSO-9509

KSO-9506 KSO-9510

1. **TRANSFER** 1 or 6 mL of the supernatant from Step 6 of the extraction process into a 2 mL or 15 mL tube, respectively (provided in roQ dSPE Kits).
2. **SHAKE** vigorously by hand for 30 seconds.
3. Centrifuge for 5 minutes @ 4000 rpm to separate solid material from the liquid layer.
4. **TRANSFER** desired supernatant to an autosampler vial and analyze via GC or LC methods.

### References

1. European Standard EN 15662, Foods of Plant Origin- Determination of Pesticide Residues Using GC-MS and/or LC-MS/MS Following Acetonitrile Extraction/ Partitioning and Clean-up by Dispersive SPE (QuEChERS method).

# Original Non-Buffered Method

The Original Non-Buffered QuEChERS Method can be used in combination with AOAC 2007.01 or EN 15662 dSPE procedures. The Non-Buffered Method is an extraction procedure that does not utilize buffering agents and is not recommended for use with pesticides that are pH sensitive (e.g. pymetrozine and sethoxydim).

## Step 1: Extraction

### roQ Extraction Kits

Part numbers:

KS0-8910 (to be used in combination with EN 15662 dSPE procedure)

KS0-8912 (to be used in combination with AOAC 2007.01 dSPE procedure)

1. **HOMOGENIZE** sample using a blender or similar apparatus.
2. **PART NO. KS0-8910**
  - a. Weigh 10 g of homogenized sample into a clean 50 mL tube (provided in roQ Extraction Kits).
  - b. Add 10 mL of Acetonitrile and internal standard.
- PART NO. KS0-8912**
  - a. Weigh 15 g of homogenized sample into a clean 50 mL tube (provided in roQ Extraction Kits).
  - b. Add 15 mL of Acetic acid/Acetonitrile (1:99) and internal standard.
4. **DISPENSE** contents of the included packet into the 50 mL tube containing homogenized sample.
5. **SHAKE** vigorously by hand for 1 minute.
6. **CENTRIFUGE** for 5 minutes @ 4000 rpm, making sure that the solid material is at the bottom of the tube and a liquid layer forms on top of the solid material.

The sample is now ready for further cleanup by dispersive SPE (dSPE) (see part numbers and procedures on right). If no further cleanup is desired, the top liquid layer can be removed and analyzed.

## Step 2: Dispersive SPE (dSPE)

### roQ dSPE Kits

Part numbers:

#### AOAC 2007.01 METHOD

KS0-9511    KS0-9515  
KS0-9512    KS0-9516  
KS0-9513    KS0-9517  
KS0-9514    KS0-9518

1. **TRANSFER** 1 or 8 mL of the supernatant from Step 6 of the extraction process into a 2 mL or 15 mL tube, respectively (provided in roQ dSPE Kits).
2. **SHAKE** vigorously by hand for 30 seconds.
3. **CENTRIFUGE** for 5 minutes @ 4000 rpm to separate solid material from the liquid layer.
4. **TRANSFER** desired supernatant to an autosampler vial and analyze via GC or LC methods.

#### EN 15662 METHOD

KS0-9503    KS0-9507  
KS0-9504    KS0-9508  
KS0-9505    KS0-9509  
KS0-9506    KS0-9510

1. **TRANSFER** 1 or 6 mL of the supernatant from Step 6 of the extraction process into a 2 mL or 15 mL tube, respectively (provided in roQ dSPE Kits).
2. **SHAKE** vigorously by hand for 30 seconds.
3. **CENTRIFUGE** for 5 minutes @ 4000 rpm to separate solid material from the liquid layer.
4. **TRANSFER** desired supernatant to an autosampler vial and analyze via GC or LC methods.

# Order Information

## roQ™ Extraction Kits

Description	Unit	Part No.
<b>AOAC 2007.01 Method Extraction Kits</b>		
6.0 g MgSO <sub>4</sub> , 1.5 g NaOAc	50/pk	KSO-8911*
<b>EN 15662 Method Extraction Kits</b>		
4.0 g MgSO <sub>4</sub> , 1.0 g NaCl, 1.0 g SCTD, 0.5 g SCDS	50/pk	KSO-8909*
<b>Original Non-Buffered Method Extraction Kits</b>		
4.0 g MgSO <sub>4</sub> , 1.0 g NaCl	50/pk	KSO-8910
6.0 g MgSO <sub>4</sub> , 1.5 g NaCl	50/pk	KSO-8912

roQ Extraction Kits contain fifty easy-pour salt packets and fifty 50 mL stand-alone centrifuge tubes

\*AOAC and EN Extraction Kits also available in traditional non-collared 50 mL centrifuge tubes, Part No.: KSO-8911-NC and KSO-8909-NC

## roQ dSPE Kits

Description	Unit	Part No.	Description	Unit	Part No.
<b>2 mL dSPE Kits</b>			<b>15 mL dSPE Kits</b>		
150 mg MgSO <sub>4</sub> , 25 mg PSA, 25 mg C18E	100/pk	KSO-9504	900 mg MgSO <sub>4</sub> , 150 mg PSA, 150 mg C18E	100/pk	KSO-9508
150 mg MgSO <sub>4</sub> , 25 mg PSA, 2.5 mg GCB	100/pk	KSO-9505	900 mg MgSO <sub>4</sub> , 150 mg PSA, 15 mg GCB	100/pk	KSO-9509
150 mg MgSO <sub>4</sub> , 25 mg PSA, 7.5 mg GCB	100/pk	KSO-9506	900 mg MgSO <sub>4</sub> , 150 mg PSA, 45 mg GCB	100/pk	KSO-9510
150 mg MgSO <sub>4</sub> , 25 mg PSA	100/pk	KSO-9503	900 mg MgSO <sub>4</sub> , 150 mg PSA	100/pk	KSO-9507
150 mg MgSO <sub>4</sub> , 50 mg PSA, 50 mg C18E, 50 mg GCB	100/pk	KSO-9514	1200 mg MgSO <sub>4</sub> , 400 mg PSA, 400 mg C18E, 400 mg GCB	100/pk	KSO-9518
150 mg MgSO <sub>4</sub> , 50 mg PSA, 50 mg C18E	100/pk	KSO-9512	1200 mg MgSO <sub>4</sub> , 400 mg PSA, 400 mg C18E	100/pk	KSO-9516
150 mg MgSO <sub>4</sub> , 50 mg PSA, 50 mg GCB	100/pk	KSO-9513	1200 mg MgSO <sub>4</sub> , 400 mg PSA, 400 mg GCB	100/pk	KSO-9517
150 mg MgSO <sub>4</sub> , 50 mg PSA	100/pk	KSO-9511	1200 mg MgSO <sub>4</sub> , 400 mg PSA	100/pk	KSO-9515

roQ dSPE Kits contain pre-weighed sorbents / salts inside 2 mL or 15 mL centrifuge tubes

## Bulk roQ QuEChERS Sorbents

Phase	10 g	100 g
C18-E	—	04G-4348
GCB (Graphitized Carbon Black)	04D-4615	04G-4615
PSA	—	04G-4610

# Order Information

## roQ Extraction Salt Packets\*

Description	Unit	Part No.
<b>AOAC 2007.01 Method Extraction Packets</b>		
6.0 g MgSO <sub>4</sub> , 1.5 g NaOAc	50/pk	AH0-9043
<b>EN 15662 Method Extraction Packets</b>		
4.0 g MgSO <sub>4</sub> , 1.0 g NaCl, 1.0 g SCTD, 0.5 g SCDS	50/pk	AH0-9041
<b>Original Non-Buffered Method Extraction Packets</b>		
4.0 g MgSO <sub>4</sub> , 1.0 g NaCl	50/pk	AH0-9042
6.0 g MgSO <sub>4</sub> , 1.5 g NaCl	50/pk	AH0-9044

\* Salt packets only, do not include centrifuge tubes



If roQ QuEChERS Kits do not perform as well or better than your current QuEChERS product, return the product with your comparative data within 45 days for a FULL REFUND.

### Terms and Conditions

Subject to Phenomenex Standard Terms and Conditions, which may be viewed at [www.phenomenex.com/TermsAndConditions](http://www.phenomenex.com/TermsAndConditions).

### Trademarks

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