

BEKOLUT®

QUEECHERS

KITS

**EVEN QUICKER, CHEAPER
AND SAFER - "GERMAN-
MADE" FOR YOUR MULTI-
RESIDUE METHODS**

bekolut

FEEL FREE TO USE QUALITY!

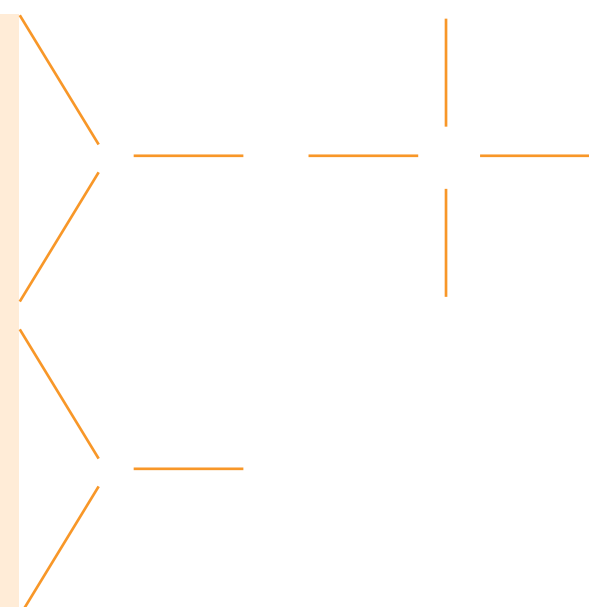


The QuEChERS sample preparation method for the analysis of pesticides and other organic contaminants in foodstuffs and feed has now become indispensable in laboratories. Going beyond the initial application of sample preparation for the determination of pesticide residues in fruits and vegetables, this method has now become mainstream for an entire series of additional matrices and multi-residue analysis of additional analyte classes as well.

BEKOLut® offers you unmatched, low-cost, premium quality standard extraction kits and sorbents, which make your everyday work easier and save time.

BENEFITS OF BEKOLut®:

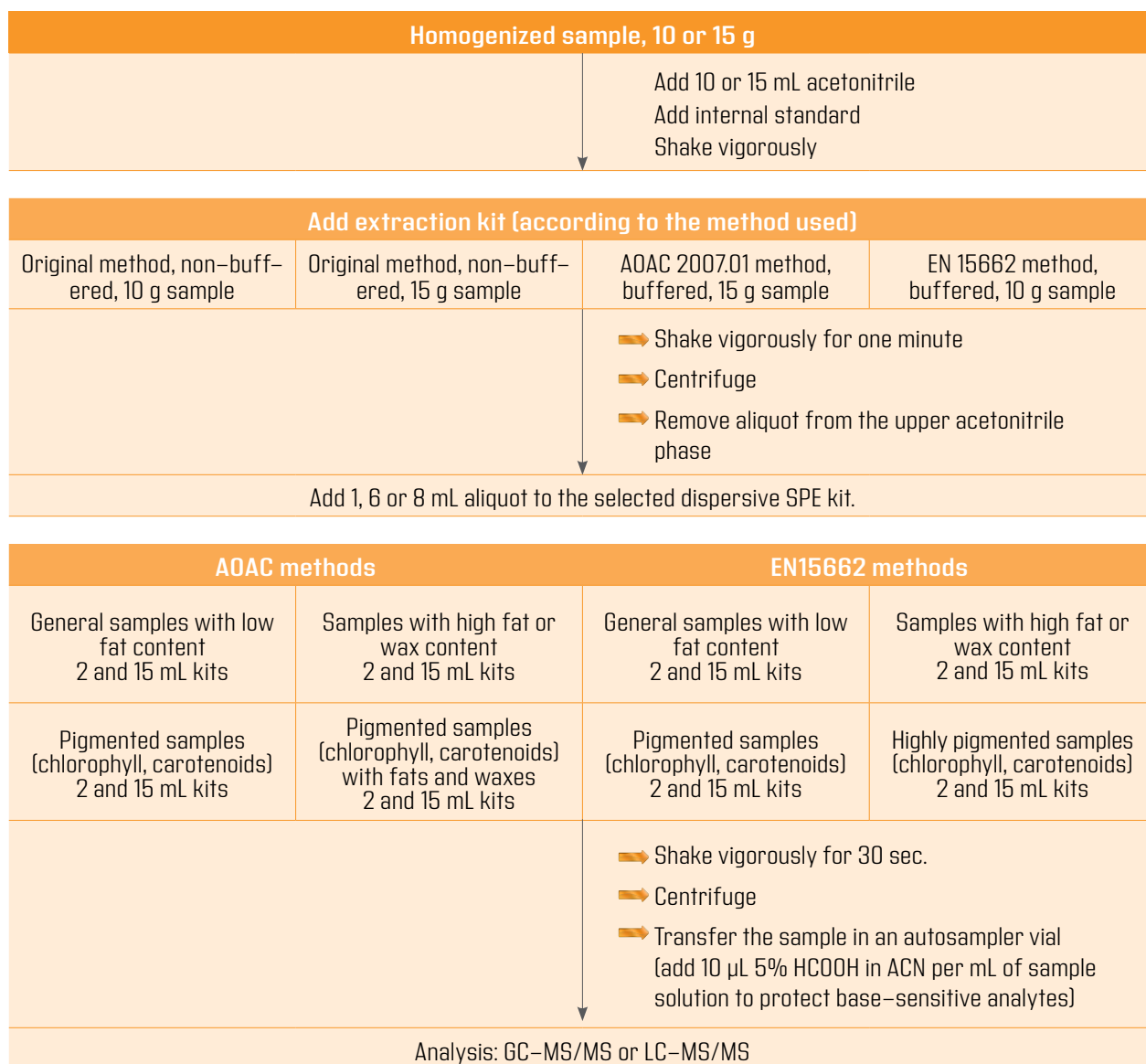
- ➔ Thanks to consistent high quality and the best prices over the years, BEKOLut® QuEChERS Kits have been established as one of the most used brands in Germany.
- ➔ Precise weighing and strictly-inspected materials ensure high reproducibility
- ➔ BEKOLut® extraction salts are exceptionally pourable; the tubes can be easily opened and completely emptied by one hand
- ➔ The color-coded screw caps of the 15 mL centrifuge tubes minimize the risk of mixing-up various PSA mixtures
- ➔ The 2 mL tubes are printed with the product name to clearly distinguish the different kits
- ➔ Tailor-made special fillings are possible at any time - even in small batches
- ➔ Support in application development



THE PROCESS AND ITS VARIANTS

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QuEChERS KITS

First, the homogenized samples are extracted with acetonitrile and salts. Afterwards, the supernatant organic phase is cleaned using the dispersive SPE technique. Four methods have become established: The original method with 10 or 15 g of sample material, the methods with 10 g as per EN 15662 and the AOAC methods with 15 g of sample material. We offer pre-assembled kits for all of these methods, both for extraction and for the subsequent cleaning step with dispersive SPE.



QuEChERS - EXTRACTION

... THE FIRST STEP.

Select the right extraction kit (original method 10/15 g sample, EN or AOAC) for your desired method. Buffered salt kits are particularly useful for sensitive analytes such as pH-sensitive pesticides.

BEKOLut® salt mixtures are pre-filled in test tubes by default, and can be easily opened and fully emptied. Over the past several years, this has proven its worth in practice compared to the salt mixtures filled in bags. You may order all the salt kits with the matching 50 mL centrifuge tube or without them, if you wish for other centrifuge tubes.

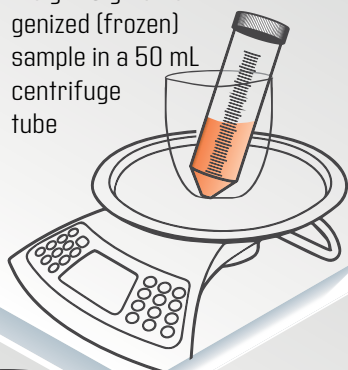
Kit	Ordering No. without 50 mL centrifuge tubes; 50 pcs./PK MgSO4	Composition in grams						Method
		MgSO4 anhydrous	NaCl	tri-Sodium citrate dihydrate	Sodium hydrogencitrate sesquihydrate	Sodium acetate	NaHCO3	
Citrate-Kit-01	CK-01-050	4	1	1	0,5			EN 15662
Citrate-Kit-1/10	CK-1/10-050	0,4	0,1	0,1	0,05			
Citrate-Kit-1/5	CK-1/5-050	0,8	0,2	0,2	0,1			
Citrate-Kit-1/2	CK-1/2-050	2	0,5	0,5	0,25			
Citrate-Kit-01-S	Citrate-Kit-01-050-S	4	1	1	0,5		5	
SALT-Kit-AC	SK-AC-050	4	1					Original (10 g sample)
SALT-Kit-AC2	SK-AC2-050	6				1,5		AOAC 2007.01
SALT-Kit-AC3	SK-AC3-050	6	1,5					Original (15 g sample)
SALT-Kit-AC4	SK-AC4-050	4	0,5					Acrylamide
BEKOLut NaCl Extraction Salt	007-AC-600		6					



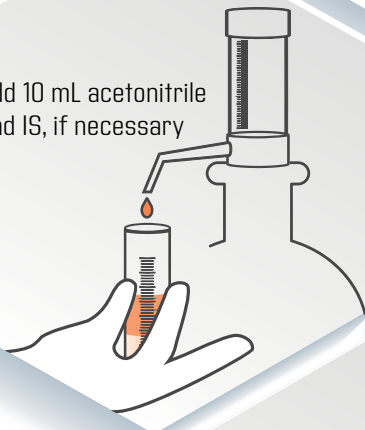
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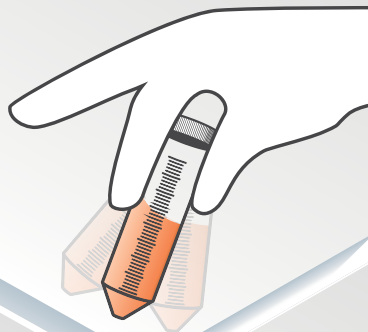
1. Weigh 10 g homogenized (frozen) sample in a 50 mL centrifuge tube



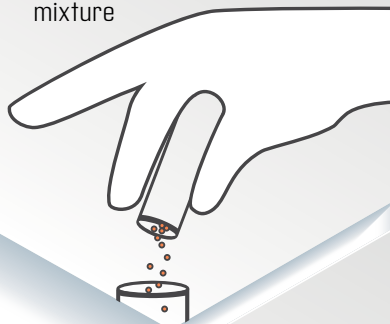
2. Add 10 mL acetonitrile and IS, if necessary



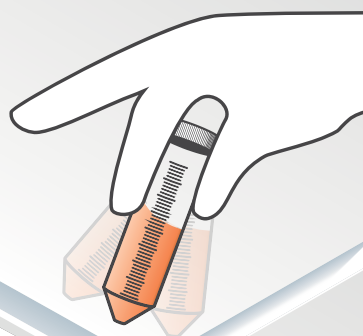
3. Shake vigorously for 1 min



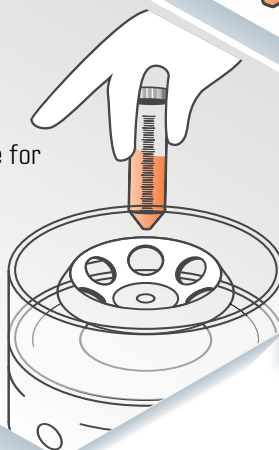
4. Add ready-to-use BEKolut extraction salts to the sample mixture



5. Shake vigorously for 1 min



6. Centrifuge for 5 min at 3000 rpm



7. Extract after centrifuging



QuEChERS – DISPERSIVE SPE CLEAN-UP



... THE SECOND STEP.

To clean the organic extracts, select the appropriate dispersive SPE kit depending on the method and matrix. An aliquot of the extract from the first step is placed in a 2 mL or 15 mL centrifuge tube, which contains the QuEChERS components for removing interfering matrix components and binding the remaining water.

The BEKOLut® PSA-Kits (including 2 or 15 mL centrifuge tubes) are pre-filled with PSA (primary secondary amine) for removing saccharides and fatty acids, with magnesium sulfate for binding water and/or C18e for removing residual lipids and/or GCB (graphitized carbon black) for removing color pigments and are therefore suitable for direct use.

Do you use special mixtures? We already maintain a long list with special fillings; we will also be more than happy to fill your quantity and sorbents of your choice.

The 15 mL centrifuge tubes of the dispersive SPE kits are equipped with color-coded screw-caps for safe differentiation, the 2 mL centrifuge tubes are clearly marked with a special print.

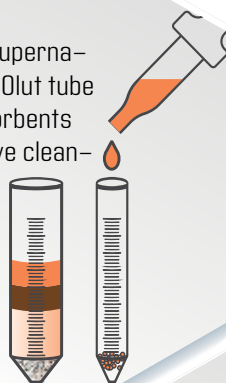
Ordering No.	Content	Tube volume	Kit
015-QUE-V101	50 pcs./PK	15 mL centrifuge	BEKOLut dSPE C18e
015-QUE-V100	50 pcs./PK	15 mL centrifuge tube	BEKOLut dSPE C18
015-QUE-MYC	50 pcs./PK	15 mL centrifuge tube	BEKOLut dSPE Clean-up Kit for Mycotoxins
PK-4T	50 pcs./PK	2 mL centrifuge tube	BEKOLut dSPE Clean-up Kit for Tea



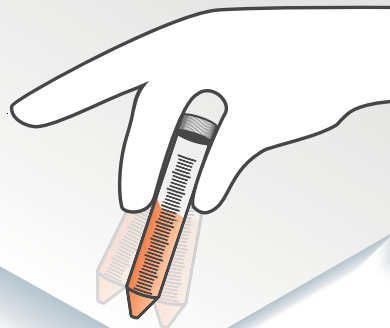
BEKOlut[®]

QuEChERS KITS

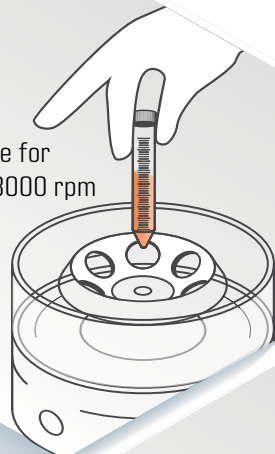
8. Aliquot the supernatant in a BEKOlut tube filled with sorbents for dispersive clean-up



9. Shake vigorously for 30 s







10. Centrifuge for 5 min at 3000 rpm



11. Pipet the clear extract in a vial after centrifuging and adjust the pH to 5 using 5% formic acid in acetonitrile (approx. 10 μ L/mL extract). This extract is suitable for both LC and GC analysis.



BEKOLut[®] DSPE KITS

EN 15662	MATRIX	AOAC 2007.01
General samples (with low fat content)		
2 mL - PSA-KIT-01 25 mg PSA, 150 mg MgSO₄ 100 pcs., Part no.: PK-01		2 mL - PSA-KIT-01A 50 mg PSA, 150 mg MgSO₄ 100 pcs., Part no.: PK-01A
15 mL - PSA-KIT-02 150 mg PSA, 900 mg MgSO₄ 50 pcs., Part no.: PK-02		15 mL - PSA-KIT-02A 400 mg PSA, 1200 mg MgSO₄ 50 pcs., Part no.: PK-02A
Color code		
Samples with high fat & wax content		
2 mL - PSA-KIT-03 25 mg PSA, 25 mg C18e, 150 mg MgSO₄ 100 pcs., Part no.: PK-03		2 mL - PSA-KIT-03A 50 mg PSA, 50 mg C18e, 150 mg MgSO₄ 100 pcs., Part no.: PK-03A
15 mL - PSA-KIT-04 150 mg PSA, 150 mg C18e, 900 mg MgSO₄ 50 pcs., Part no.: PK-04		15 mL - PSA-KIT-04A 400 mg PSA, 400 mg C18e, 1200 mg MgSO₄ 50 pcs., Part no.: PK-04A
Color code		
Pigmented samples (chlorophyll, carotenoids)		
2 mL - PSA-KIT-05 25 mg PSA, 2.5 mg GCB, 150 mg MgSO₄ 100 pcs., Part no.: PK-05		2 mL - PSA-KIT-05A 50 mg PSA, 50 mg GCB, 150 mg MgSO₄ 100 pcs., Part no.: PK-05A
15 mL - PSA-KIT-06 150 mg PSA, 15 mg GCB, 900 mg MgSO₄ 50 pcs., Part no.: PK-06		15 mL - PSA-KIT-06A 400 mg PSA, 400 mg GCB, 1200 mg MgSO₄ 50 pcs., Part no.: PK-06A
Color code		
Highly pigmented samples (chlorophyll, carotenoids)		Pigmented samples with fats & waxes
2 mL - PSA-KIT-07 25 mg PSA, 7.5 mg GCB, 150 mg MgSO₄ 100 pcs., Part no.: PK-07		2 mL - PSA-KIT-07A 50 mg PSA, 50 mg C18e, 50 mg GCB, 150 mg MgSO₄ 100 pcs., Part no.: PK-07A
15 mL - PSA-KIT-08 150 mg PSA, 45 mg GCB, 900 mg MgSO₄ 50 pcs., Part no.: PK-08		15 mL - PSA-KIT-08A 400 mg PSA, 400 mg C18e, 400 mg GCB, 1200 mg MgSO₄ 50 pcs., Part no.: PK-08A
Color code		

RECOMMENDED DISPERSIVE QuEChERS KITS

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QuEChERS KITS

ACCORDING TO FOOD GROUPS

Product group	Sample material	Typical water content g/100 g	Water addition extraction g/10 g sample	Water addition extraction g/5 g sample	BEKOlut® QuEChERS PSA-Kits	
Fruits					EN	AOAC
Citrus fruits	Citrus juices	90			PSA-Kit-03 PSA-Kit-04	PSA-Kit-03A PSA-Kit-04A
	Grapefruit	90				
	Lemon/lime [1]	85				
	Orange	85				
	Orange peel	75	2.5			
	Mandarin	90				
Pome fruit	Apple	85			PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A
	Apple, dried	30		8.5		
	Applesauce	80				
	Apple juice	90				
	Pear	85				
	Quince	85				
Stone fruit	Apricot	85			PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A
	Apricot, dried	30		8.5		
	Apricot nectar	85				
	Cherry	85				
	Mirabelle	80				
	Nectarine	85				
	Peach	90				
	Peach, dried	20		8.5		
	Plum	85				
Plum, dried	20		8.5			
Small & soft fruits	Blackberry	85			PSA-Kit-05 PSA-Kit-06 PSA-Kit-07 PSA-Kit-08	PSA-Kit-05A PSA-Kit-06A
	Blueberry	85				
	Currant [1]	85				
	Elderberry	80				
	Gooseberry	90				
	Grape	80				
	Raspberry [2]	85				
	Raisin	20		8.5		
	Strawberry	90				
Other fruits	Pineapple	85			PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A
	Bananas	75	2.5			
	Fig, dried	20		8.5		
	Kiwi	85				
	Mango	80				
	Papaya	90				



Product group	Sample material	Typical water content g/100 g	Water addition extraction g/10 g sample	Water addition extraction g/5 g sample	BEKOlut® QuEChERS PSA-Kits			
Vegetables					EN	AOAC		
Root & tuber vegetables	Beets	90			PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A		
	Carrots	90						
	Celeriac	90						
	Horseradish	75	2.5					
	Parsley root	90						
	Radish	95						
	Black salsify	80						
	Potato	80						
Leek vegetables	Garlic	60		7	PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A		
	Onion	90						
	Leek	85						
	Shallot	80						
	Chives	85			PSA-Kit-05 PSA-Kit-06 PSA-Kit-07 PSA-Kit-08	PSA-Kit-05A PSA-Kit-06A		
Fruiting vegetables	Eggplant	90			PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A		
	Pickle	95						
	Melon	90						
	Paprika	90					PSA-Kit-05 PSA-Kit-06 PSA-Kit-07 PSA-Kit-08	PSA-Kit-05A PSA-Kit-06A
	Pumpkin	95						
	Tomato	95						
	Zucchini	95						
Cabbage	Broccoli	90			PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A		
	Brussel sprouts	85						
	Cauliflower	90						
	Chinese cabbage	95						
	Kohlrabi	90						
	Cabbage	90					PSA-Kit-05 PSA-Kit-06	PSA-Kit-05A PSA-Kit-06A
	Red cabbage	90						
	Savoy cabbage	90					PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A
	White cabbage	90						
Leaf vegetables & herbs	Green lettuce varieties	95			PSA-Kit-05 PSA-Kit-06 PSA-Kit-07 PSA-Kit-08	PSA-Kit-05A PSA-Kit-06A		
	Endive	95						
	Cress	90						
	Lamb's lettuce	85						
	Parsley	80						
	Rocket	85						
	Spinach	90						

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QuEChERS KITS

Product group	Sample material	Typical water content g/100 g	Water addition extraction g/10 g sample	Water addition extraction g/5 g sample	BEKolut® QuEChERS PSA-Kits	
Vegetables (continued)					EN	AOAC
Stem vegetables	Asparagus	95			PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A
	Celery	95				
	Leek	85				
	Artichoke	95			PSA-Kit-05 PSA-Kit-06	PSA-Kit-05A PSA-Kit-06A
	Rhubarb	85				
Legumes	Peas, beans, lentils (dried)	< 10		10	PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A
	Peas, beans, lentils (fresh)	75	2.5		PSA-Kit-05 PSA-Kit-06	PSA-Kit-05A PSA-Kit-06A
Other foodstuffs					EN	AOAC
Cereals	Wheat, corn, rice (flour, grains)	< 10		10	PSA-Kit-03 PSA-Kit-04	PSA-Kit-03A PSA-Kit-04A
Other foodstuffs	Coffee beans [3]	< 10		10	PSA-Kit-05 PSA-Kit-06 PSA-Kit-07 PSA-Kit-08	PSA-Kit-05A PSA-Kit-06A PSA-Kit-07A PSA-Kit-08A
	Tea [3]	< 10		10		
	Herbs, spices (dried) [4]	< 10		10		
	Mushrooms	90			PSA-Kit-01 PSA-Kit-02	PSA-Kit-01A PSA-Kit-02A
	Wine	90				
Oil, other food- stuffs	Olive oil, rapeseed oil	< 10			PSA-Kit-03 PSA-Kit-04	PSA-Kit-03A PSA-Kit-04A PSA-Kit-07A PSA-Kit-08A
	Citrus oil	< 10				
	Olives	< 10				
	Avocado	75				
	Cocoa solids	75		10		
	Baby food	50 – 90				
Foodstuffs of animal origin	Meat, fish, seafood	50 – 75			PSA-Kit-03 PSA-Kit-04	PSA-Kit-03A PSA-Kit-04A
	Dairy products	40 – 90			PSA-Kit-03 PSA-Kit-04	PSA-Kit-03A PSA-Kit-04A PSA-Kit-07A PSA-Kit-08A

- [1] Addition of 600 µL 5 mol/L NaOH solution to the buffer salts
 [2] Addition of 200 µL 5 mol/L NaOH solution to the buffer salts
 [3] only use 2 g of sample material for fermented products
 [4] only use 2 g of sample material for products full of extracts



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Information

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