



RayCure Solid Phase Extraction Product Catalog

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About RayKol Group

RayKol Group is an automation solution supplier focusing on improving efficiency of the testing and inspection. Our core business covers three fields: food safety, environmental protection, and life science. We will continue to strive to provide customers with better products and one-stop solution services.

RayKol Group provides a large variety of innovative products, including sample preparation automated systems and equipment for analysis of food safety and environments, life science instruments and equipment, consumables and general products

RayKol products have been widely distributed all over the global. And they are widely applied in fields of foods, agricultural products, pharmaceuticals, environmental monitoring, inspection and quarantine, forensic and public security, life science, chemistry and chemical engineering.

It is our mission to create value for customers and help them to succeed.

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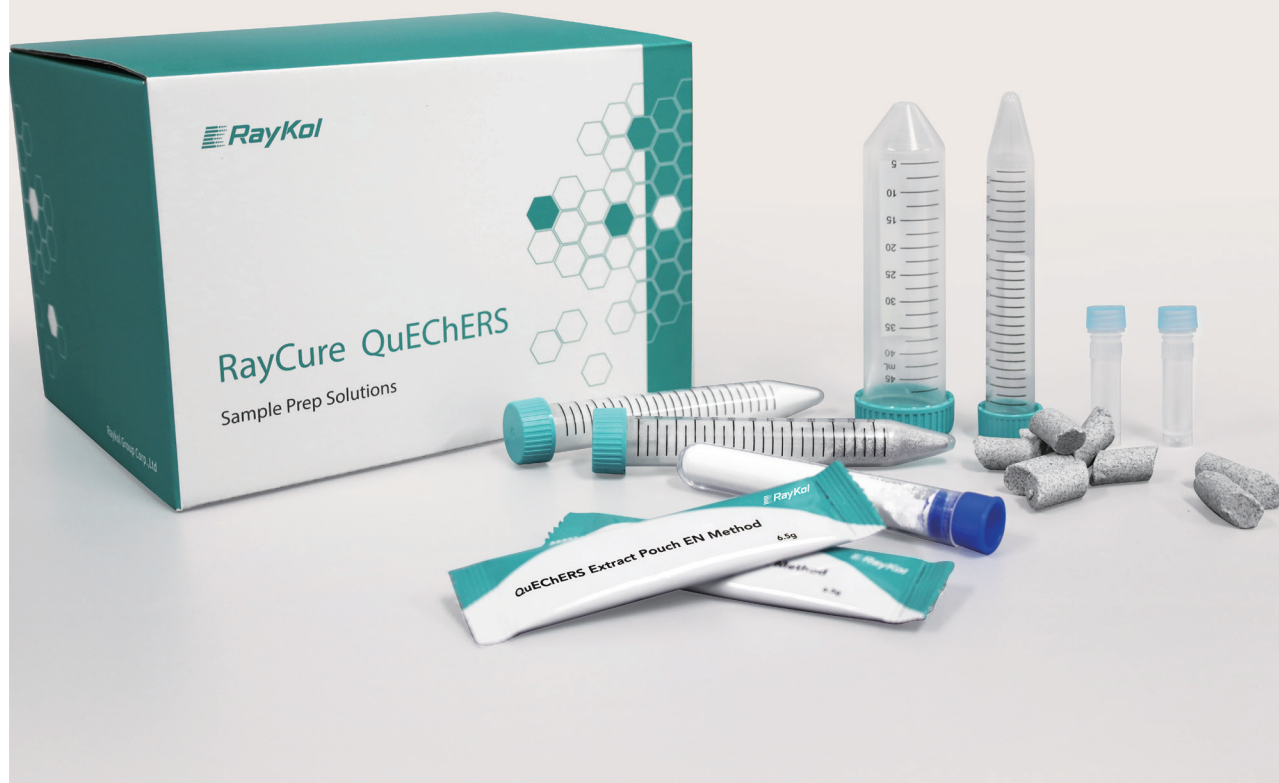
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RayCure QuEChERS

- ✓ High-quality sorbents for high-efficient clean-up
- ✓ High-quality centrifuge vial, with good sealing performance and corrosion resistance
- ✓ Provide a large variety of economical QuEChERS kits for various standards and methods
- ✓ Customized kits available for method development and modification



Brief Introduction of RayCure QuEChERS Method

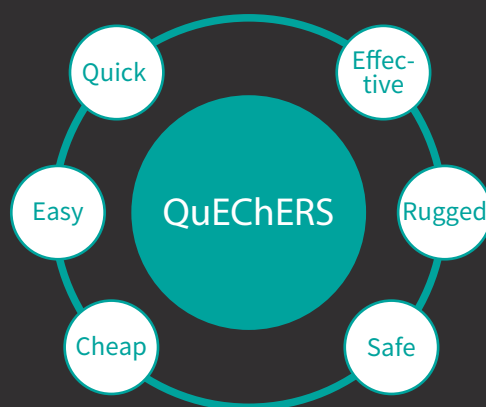
Development of QuEChERS

2003	2007	2008	2018	2021
The QuEChERS method was invented An efficient and economical method to extract multiple pesticide residues.	AOAC.2007.01 Approved by the Association of Official Analytical Chemists.	EN 15662 Approved by the EU Pesticide Residue Monitoring Committee.	GB 23200.113-2018 Added into National Standard of China.	GB 23200.121-2021 QuEChERS method is the only recommended sample preparation method for determination of pesticide residues in plant-derived foods by GC.

What is QuEChERS

QuEChERS is an officially approved sample preparation technique.

It is a quick and easy method to extract and purify multiple pesticide residues from fruits and vegetables, and has been widely applied in food analysis.



Advantages of QuEChERS

RayKol provides a wide range of dispersive solid phase extraction products, including QuEChERS extraction and clean-up kits, to facilitate method development and modification:

Save time	Standards and methods	Wide selections	Wide selections	Reduce interference of impurity peak
Pre-weigh and mix kits for direct use	Pre-pack as required amount and ratio in standards and methods	A large variety of salts and sorbents available for different sample matrices	Each batch of products must go through strict QC	Completely remove impurities for clear chromatogram

RayCure QuEChERS Product Overview

RayCure QuEChERS extraction and clean-up kits are pre-packed and pre-weighted based on the specific requirements from standards and methods.

Extraction kits

- Add extraction salts after organic solvents, to prevent samples overheated partially;
- Aluminum foil pouch packaging, easy to pour out;
- Printed salt components on package and utilize easy-to-tear packaging for direct use;
- Ceramic homogenizers for 50mL centrifuge tubes are available.

Clean-up kits

- Select sorbent with different ratios based on sample matrix;
- Wide variety of clean-up kits for various standards and methods;
- Ceramic homogenizers for 2mL and 15mL centrifuge tubes are available;
- Customized clean-up kits with various ratio available.

Ceramic homogenizers

- Compatible with QuEChERS extraction and clean-up kits, its excellent sample grinding ability can effectively improve sample preparation efficiency.
- Utilize inert ceramic materials, no impurity dissolving;
- Higher extraction efficiency, lower labor cost;
- Maintain high recovery rate and reproducibility;
- Break up salt agglomerates, evenly disperse samples.



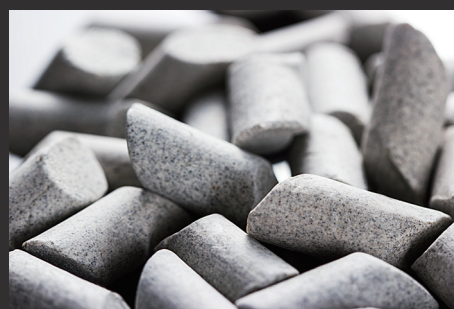
▲ Extraction salts (pre-weighted anhydrous salt)

▲ Extraction salts + 50mL centrifuge tube



▲ 2mL clean-up kit: sorbent + anhydrous magnesium sulfate in 2mL centrifuge tube

▲ 15mL clean-up kit: sorbent + anhydrous magnesium sulfate in 15mL centrifuge tube



▲ Ceramic homogenizers

Product function

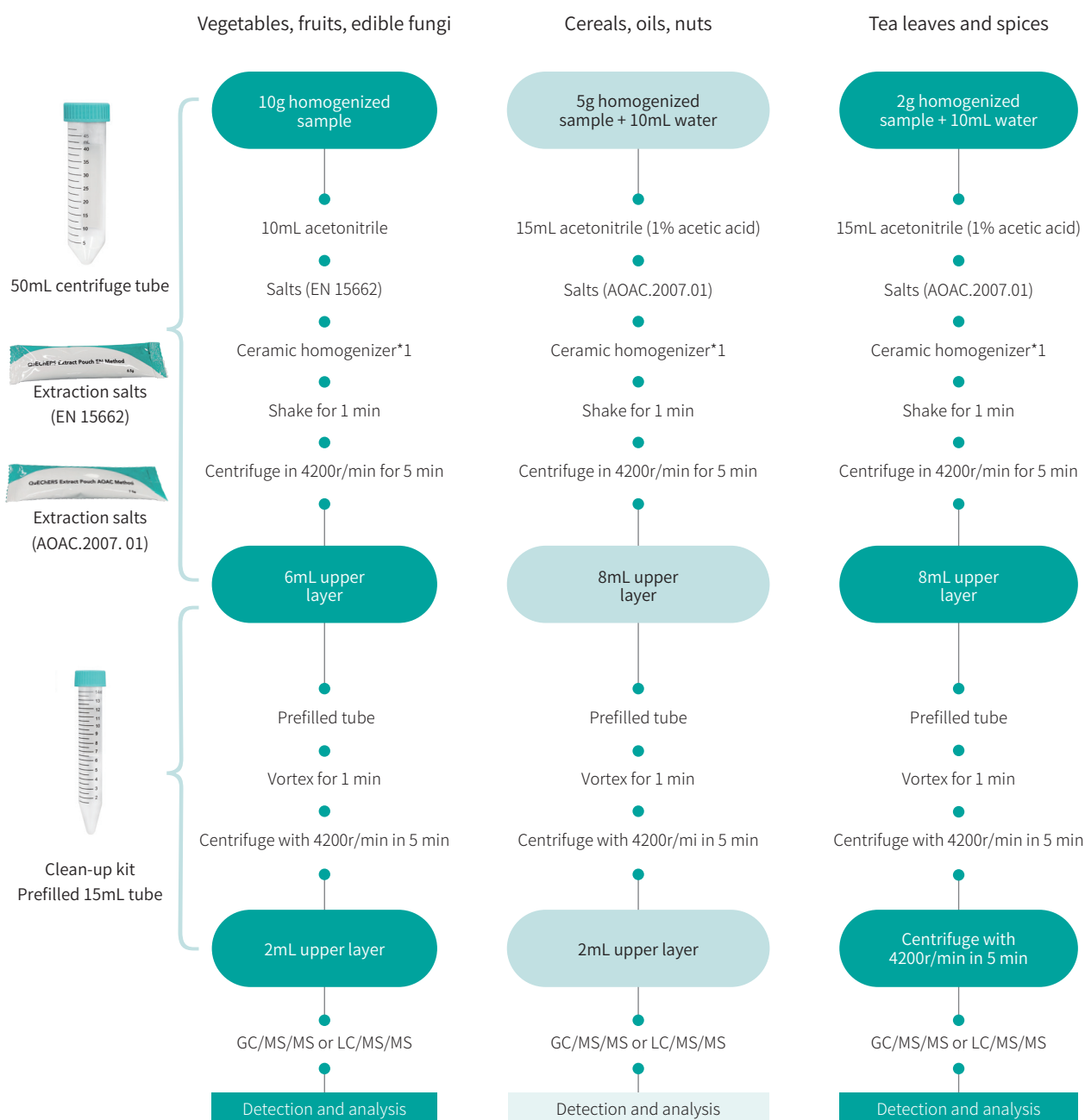
Two steps to remove interference from samples:

- **Extraction (extraction kits)**
Facilitate the partitioning with water and targeted substances into organic phase (acetonitrile layer) with MgSO_4 and buffer salts.
- **Purification (clean-up kits)**
Add sorbents such as MgSO_4 , PSA, C18 and GCB to remove residual water or co-extractives based on sample matrix and compounds of interest.

Salts and Sorbents	Functions
MgSO_4	Remove residual water
Buffer salts	Stabilize pH
PSA	Remove components such as fatty acids, organic acids, sugars, anthocyanidin
C18	Remove fats, non-polar interferences
GCB	Remove most of pigments and sterols
Silica	Remove polar substances such as sugars

Workflow

Example: Determination of 208 pesticides and metabolites residues in foods of plant origin - GC-MS/MS





QuEChERS Extraction and Clean-up Kits for AOAC 2007.01 Method

- AOAC Official Method 2007.01:
<Pesticide Residues in Foods by Acetonitrile Extraction and Partitioning with Magnesium Sulfate>
- Commonly used to extract alkali-sensitive compounds, such as chlorothalonil, Tolyfluanid, folpet and captan from non-acidic matrix.

Product information

Extraction kits

Part No.	Product	Description	Unit size
RC-50071	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches	50/PK
RC-50070	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches	50/PK

Clean-up kits

Sample matrix	Part No.	Product	Description	Unit size
General fruits and vegetables	RC-02081	2mL clean-up kit	50mg PSA + 150mg MgSO ₄	100/PK
	RC-15081	15mL clean-up kit	400mg PSA + 1200mg MgSO ₄	50/PK
Fruits and vegetables with fats and waxes	RC-02083	2mL clean-up kit	50mg PSA + 50mg C18 + 150mg MgSO ₄	100/PK
	RC-15083	15mL clean-up kit	400mg PSA + 400mg C18 + 1200mg MgSO ₄	50/PK
Pigmented fruits and vegetables	RC-02086	2mL clean-up kit	50mg PSA + 50mg GCB + 150mg MgSO ₄	100/PK
	RC-15086	15mL clean-up kit	400mg PSA + 400mg GCB + 1200mg MgSO ₄	50/PK
Fruits and vegetables with pigments and fats	RC-02090	2mL clean-up kit	50mg PSA + 50mg C18 + 50mg GCB + 150mg MgSO ₄	100/PK
	RC-15090	15mL clean-up kit	400mg PSA + 400 mg C18 + 400mg GCB + 1200mg MgSO ₄	50/PK
Drug residues in meat	RC-02075	2mL clean-up kit	25mg C18 + 150mg MgSO ₄	100/PK
	RC-15075	15mL clean-up kit	150mg C18 + 900mg MgSO ₄	50/PK
Drug residues in meat	RC-02085	2mL clean-up kit	50mg PSA + 50mg C18 + 7.5mg GCB + 150mg MgSO ₄	100/PK
	RC-15085	15mL clean-up kit	400mg PSA + 400mg C18 + 45mg GCB + 1200mg MgSO ₄	50/PK

Ceramic homogenizers

Ceramic homogenizers	Product	Description	Unit size
RC-5003C	Ceramic homogenizers	For 50mL tubes in extraction	100/PK
RC-1502C	Ceramic homogenizers	For 15mL tubes in clean-up	100/PK
RC-0201C	Ceramic homogenizers	For 2mL tubes in clean-up	200/PK



RayCure QuEChERS Product Catalog

- EN 15662 Method:
<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>
- Commonly used to extract acid-sensitive compounds.

Product information

Extraction tube

Extraction tube	Product	Description	Description
RC-50061	Extraction kit	4g MgSO ₄ + 1g NaCl + 1g NaCitrate + 0.5g disodium citrate sesquihydrate, in pouches	50/PK
RC-50060	Extraction kit	4g MgSO ₄ + 1g NaCl + 1g NaCitrate + 0.5g disodium citrate sesquihydrate, in pouches; Includes 50ml centrifuge tubes	50/PK

Clean-up kits

Sample matrix	Item No.	Products	Description	Unit size
General fruits and vegetables	RC-02080	2mL clean-up kit	25mg PSA + 150mg MgSO ₄	100/PK
	RC-15072	15mL clean-up kit	150mg PSA + 900mg MgSO ₄	50/PK
Pigmented fruits and vegetables	RC-02070	2mL clean-up kit	25mg PSA + 2.5mg GCB + 150mg MgSO ₄	100/PK
	RC-15070	15mL clean-up kit	150mg PSA + 15mg GCB + 900mg MgSO ₄	50/PK
Highly pigmented fruits and vegetables	RC-02074	2mL clean-up kit	25mg PSA + 7.5mg GCB + 150mg MgSO ₄	100/PK
	RC-15074	15mL clean-up kit	150mg PSA + 45mg GCB + 900mg MgSO ₄	50/PK
Fruits and vegetables containing fats and waxes	RC-02082	2mL clean-up kit	25mg PSA + 25mg C18 + 150mg MgSO ₄	100/PK
	RC-15082	15mL clean-up kit	150mg PSA + 150mg C18 + 900mg MgSO ₄	50/PK

Ceramic homogenizers

Ceramic homogenizers	Product	Description	Unit size
RC-5003C	Ceramic homogenizers	For 50mL tubes in extraction	100/PK
RC-1502C	Ceramic homogenizers	For 15mL tubes in clean-up	100/PK
RC-0201C	Ceramic homogenizers	For 2mL tubes in clean-up	200/PK



QuEChERS Extraction and Clean-up Kits for GB 23200.113-2018 Method

- GB 23200.113-2018 Determination of 208 pesticides and metabolites residues in foods of plant origin - GC-MS/MS
- Commonly used to extract multiple pesticide residues in plant-derived foods.

Product information

Extraction kits

Sample matrix	Part No.	Product	Description	Unit size
Vegetables, fruits and edible fungi	RC-50061	Extraction kit	4g MgSO ₄ + 1g NaCl + 1g NaCitrate + 0.5g disodium citrate sesquihydrate, in pouches	50/PK
	RC-50060	Extraction kit	4g MgSO ₄ + 1g NaCl + 1g NaCitrate + 0.5g disodium citrate sesquihydrate, in pouches; includes 50ml centrifuge tubes	50/PK
Cereals, oils and nuts	RC-50071	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches	50/PK
	RC-50070	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches; includes 50ml centrifuge tubes	50/PK
Tea leaves and spices	RC-50071	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches	50/PK
	RC-50070	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches; includes 50ml centrifuge tubes	50/PK

Clean-up kits

Sample matrices	Part No.	Product	Description	Unit size
Vegetables, fruits and edible fungi	RC-15072	15mL clean-up kit (light pigment)	150mg PSA + 900mg MgSO ₄	50/PK
	RC-15073	15mL clean-up kit (dark pigment)	885mg MgSO ₄ + 150mg PSA + 15mg GCB	50/PK
Cereals, oils and nuts	RC-15083	15mL clean-up kit	400mg PSA + 400mg C18 + 1200mg MgSO ₄	50/PK
Tea leaves and spices	RC-15097	15mL clean-up kit	400mg PSA + 400mg C18 + 200mg GCB + 1200mg MgSO ₄	50/PK

Ceramic homogenizers

Ceramic homogenizers	Product	Description	Unit size
RC-5003C	Ceramic homogenizers	For 50mL tubes in extraction	100/PK
RC-1502C	Ceramic homogenizers	For 15mL tubes in clean-up	100/PK
RC-0201C	Ceramic homogenizers	For 2mL tubes in clean-up	200/PK



QuEChERS Extraction and Clean-up Kits for GB 23200.121. 2021 Method

- GB 23200.121-2021 Determination of 331 pesticides and their metabolite residues in plant-derived foods – LC-MS
- To perform full detection and analysis of 331 pesticides and their 44 metabolite residues on plant-derived foods.

Product information

Extraction kits

Sample matrix	Item No.	Product	Description	Unit size
Vegetables, fruits, edible fungi and sugar	RC-50061	Extraction kit	4g MgSO ₄ + 1g NaCl + 1g NaCitrate + 0.5g disodium citrate sesquihydrate, in pouches	50/PK
	RC-50060	Extraction kit	4g MgSO ₄ + 1g NaCl + 1g NaCitrate + 0.5g disodium citrate sesquihydrate, in pouches; include 50mL centrifuge tubes	50/PK
Cereals, oils and nuts	RC-50071	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches	50/PK
	RC-50070	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches; includes 50ml centrifuge tube	50/PK
Tea leaves and spices	RC-50071	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches	50/PK
	RC-50070	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches; includes 50ml centrifuge tube	50/PK
Vegetable oil	RC-50061	Extraction kit	4g MgSO ₄ + 1g NaCl + 1g NaCitrate + 0.5g disodium citrate sesquihydrate, in pouches	50/PK
	RC-50060	Extraction kit	4g MgSO ₄ + 1g NaCl + 1g NaCitrate + 0.5g disodium citrate sesquihydrate, in pouches; include 50mL centrifuge tubes	50/PK

Clean-up kits

Sample matrix	Solution volume	Part No.	Product	Description	Unit size
Vegetables, fruits, edible fungi and sugar	1mL	RC-02080	2mL clean-up kit (light pigment)	150mg MgSO ₄ +25mg PSA	100/PK
		RC-02070	2mL clean-up kit (dark pigment)	150mg MgSO ₄ + 25mg PSA + 2.5mg GCB	100/PK
	6mL	RC-15072	15mL clean-up kit (light pigment)	150mg PSA + 900mg MgSO ₄	50/PK
		RC-15073	15mL clean-up kit (dark pigment)	885mg MgSO ₄ + 150mg PSA + 15mg GCB	50/PK
Cereals, oils and nuts	1mL	RC-02083	2mL clean-up kit	150mg MgSO ₄ +50mg PSA + 50mg C18	100/PK
	8mL	RC-15083	15mL clean-up kit	400mg PSA + 400mg C18 + 1200mg MgSO ₄	50/PK
Tea leaves and spices	1mL	RC-02097	2mL clean-up kit	150mg MgSO ₄ +50mg PSA + 50mg C18 + 25mg GCB	100/PK
	8mL	RC-15097	15mL clean-up kit	400mg PSA + 400mg C18 + 200mg GCB + 1200mg MgSO ₄	50/PK
Vegetable oil	1mL	RC-02083	2mL clean-up kit	150mg MgSO ₄ +50mg PSA + 50mg C18	100/PK
	8mL	RC-15083	15mL clean-up kit	400mg PSA + 400mg C18 + 1200mg MgSO ₄	50/PK

Sample matrix	Solution volume	Part No.	Product	Description	Unit Size
Vegetables, fruits, edible fungi and sugars	1mL	RC-02021	2mL clean-up kit (light pigment)	150mg MgSO ₄ +5mg PSA	100/PK
		RC-02022	2mL clean-up kit (dark pigment)	150mg MgSO ₄ + 5mg PSA + 2.5mg GCB	100/PK
	6mL	RC-15021	2mL clean-up kit (dark pigment)	30mg PSA + 900mg MgSO ₄	50/PK
		RC-15022	15mL clean-up kit (dark pigment)	900mg MgSO ₄ + 30mg PSA + 15mg GCB	50/PK
Cereals, oils and nuts	1mL	RC-02023	2mL clean-up kit	150mg MgSO ₄ +10mg PSA + 50mg C18	100/PK
	8mL	RC-15023	15mL clean-up kit	80mg PSA + 400mg C18 + 1200mg MgSO ₄	50/PK
Vegetable oil	1mL	RC-02024	2mL clean-up kit	150mg MgSO ₄ +5mg PSA + 50mg C18	100/PK
	8mL	RC-15024	15mL clean-up kit	40mg PSA + 400mg C18 + 1200mg MgSO ₄	50/PK

Note: Amount of PSA can be appropriately reduced as above in determination of sulfonylurea herbicides, cyclohexenone herbicides (clethodim, clethodim sulfone, clethodim sulfoxide, cycloxydim, tralkoxydim and sethoxydim), triazolopyrimidine sulfonamide herbicides (florasulam, flumetsulam, penoxsulam), fluazinam, spirotriamat and its metabolites, sulfentrazone, saflufenacil, benzthiazuron, cyazofamid metabolite CCIM and isoxaflutole-curdione nitriles.



QuEChERS Extraction and Clean-up Kits for Other Methods

Product information

- Determination of forchlorfenuron in foods of plant origin – LC/MS/MS

Clean-up kits

Sample matrix	Part No.	Product	Description	Unit size
Vegetables, fruits, edible fungi and vegetable oils	RC-02081	2mL clean-up kit	50mg PSA + 150mg MgSO ₄	100/PK
Cereals, oils and nuts	RC-02001	2mL clean-up kit	50mg C18 + 150mg MgSO ₄	100/PK
Tea leaves, spices	RC-02002	2mL clean-up kit	50mg PSA + 20mg GCB + 150mg MgSO ₄	100/PK

- Determination of flumetsulamin foods of plant origin – LC/MS/MS

Clean-up kits

Sample matrix	Part No.	Product	Description	Unit size
Vegetables, fruits, edible fungi, grains, oils, tea leaves	RC-02011	2mL clean-up kit	30mg GCB + 150mg MgSO ₄	100/PK
Vegetable oils, nuts	RC-02012	2mL clean-up kit	50mg Florisil + 150mg MgSO ₄	100/PK
Spice	RC-02013	2mL clean-up kit	40mg PSA + 10mg GCB + 150mg MgSO ₄	100/PK

- Determination of 9 carbamate pesticides in foods of plant origin - LC-post-column derivatization method

Clean-up kits

Sample matrix	Part No.	Product	Description	Unit size
Oils, nuts and vegetable oils	RC-15083	15mL clean-up kit	400mg PSA + 400mg C18 + 1200mg MgSO ₄	50/PK

- Determination of fipronil and metabolites residues in eggs - LC/MS/MS

Clean-up kits

Sample matrix	Part No.	Product	Description	Unit size
Egg	RC-02083	2mL clean-up kit	50mg PSA + 50mg C18 + 150mg MgSO ₄	100/PK

- Determination of 90 organophosphorus pesticides and metabolites residues in foods of plant origin - GC

Clean-up kits

Sample matrix	Part No.	Product	Description	Unit size
Oil crops, nuts and vegetable oils	RC-15082	15mL clean-up kit	150mg PSA + 150mg C18 + 900mg MgSO ₄	50/PK

- Determination of 51 pesticides residues in fruits and vegetables GC-MS

Extraction kits

Part No.	Product	Description	Unit size
RC-50071	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches	50/PK
RC-50070	Extraction kit	6g MgSO ₄ + 1.5 g NaAcetate, in pouches; Includes 50mL centrifuge tubes	50/PK

Clean-up kits

Sample matrix	Part No.	Product	Description	Unit size
Vegetables and fruits	RC-15076	15mL clean-up kit	100mg PSA + 100mg C18 + 300mg MgSO ₄	50/PK

- Method for Determination of synthetic pyrethroid of food animals for imported and exported Meat Animals - GC-MS/MS

Clean-up kits

Sample matrix	Part No.	Product	Description	Unit size
Blood and urine of food animals including pigs, cattle, sheep for imported and exported	RC-02031	2mL clean-up kit	250mg C18 + 450mg PSA	100/PK

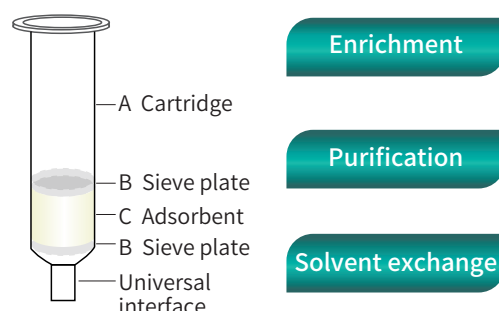
RayCure SPE

- ☑ High-quality sorbents in RayCure SPE cartridges
- ☑ Full range of SPE cartridges for various sample matrices
- ☑ Strict quality management to ensure high recovery rate and reproducibility
- ☑ Great performance and results with economical price



Introduction of Solid Phase Extraction

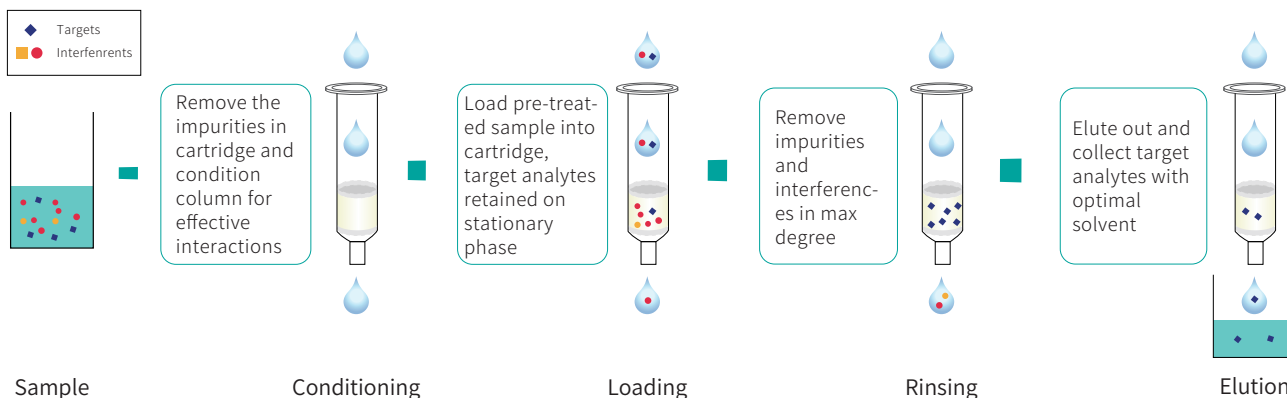
Solid phase extraction (SPE) is separation technique based on the theory of liquid-solid chromatography, uses elective adsorption and elution to enrich, separate and purify samples. SPE is a physical extraction process between liquid phase and stationary phase. During SPE process, if the adsorption force of adsorbents to target compounds is greater than that of the samples, target analytes will retain in adsorbents while other components flow through the column in liquid phase when sample passing SPE columns. Then elute out and collect target analytes with appropriate solvents for following analysis. In recent years, solid phase extraction has been more widely used in laboratories as an essential sample preparation technique.



Separation mode

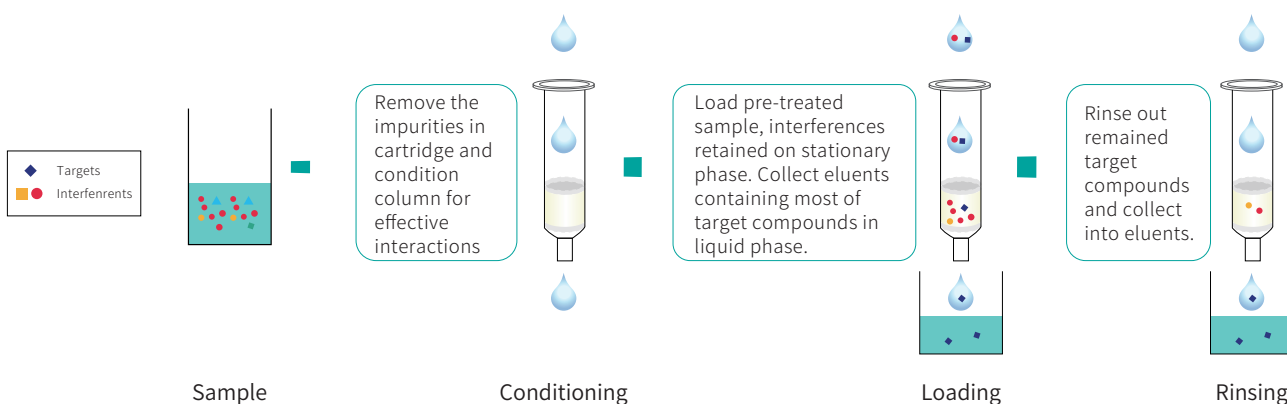
Retain compounds of interest

It is the most commonly used SPE mechanism in labs. When sample flows through SPE cartridge, compounds of interest are retained on stationary phase with few impurities, majority of interferences flow through the column with liquid phase. Then wash impurities away with intermediate solvent from stationary phase, elute out and collect target compounds with selected solvent.



Retain interferences

It is the common mechanism to remove fat-soluble interfering substances in the analysis of residual pesticides from vegetables and fruits. When sample flows through SPE cartridge, the majority of interferences are retained on stationary phase, target analytes flow through the column in liquid phase with few impurities. Rinse out and collect all target analytes completely with selected solvents.

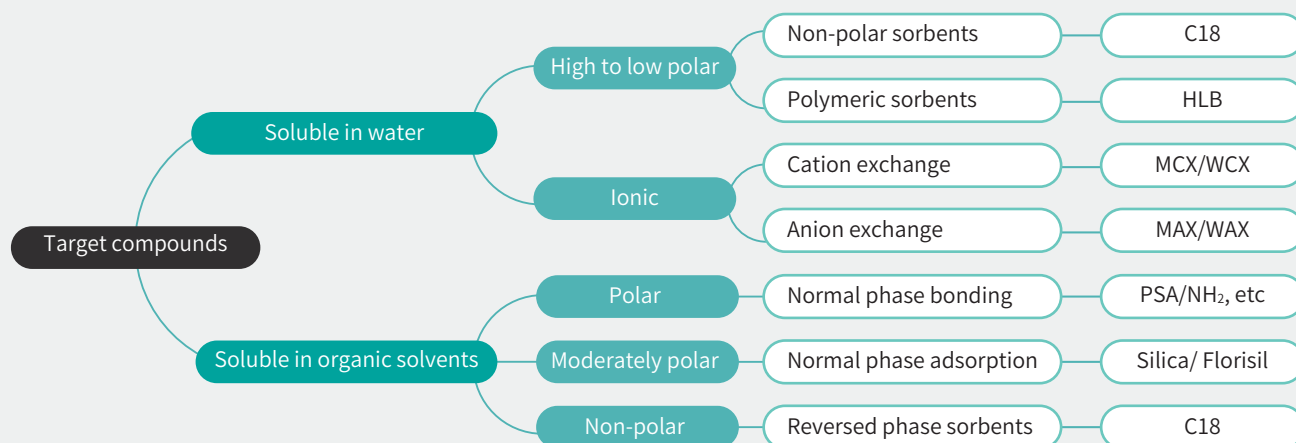


Selection guide of RayCure SPE cartridges

Principle

- Sorbent in SPE cartridges should share the same properties of target compounds.
- Select based on the difference of target compounds and interferences.
- Consider effects of sample matrices, target compounds' characteristics and solubility to solvents.

Select according to the properties of target compounds



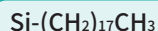
Select according to sample matrix

Sample matrix	Target compound	Main interfering substance	SPE cartridge
Fruits, vegetables, juice, vegetable juice, fruit wine, herbs	Multiple pesticide residues	Carbohydrates, pigments, organic acids, phenols	RayCure QuEChERS
			RayCure NH ₂
			RayCure PSA
			RayCure GCB/NH ₂
			RayCure GCB/PSA
			RayCure Florisil
	Weak polar pesticides	Carbohydrates, pigments, organic acids, phenols	RayCure HLB
			RayCure C18
Dairy products, blood, urine, animal tissues	Alkali pesticides	Carbohydrates, pigments, organic acids, phenols	RayCure MCX
	Acidic pesticides	Carbohydrates, pigments, organic acids, phenols	RayCure WCX
			RayCure MAX
	Neutral, weakly acidic and alkali drugs	Proteins, fats	RayCure WAX
			RayCure HLB
	Alkali drugs	Proteins, fats	RayCure C18
			RayCure MCX
	Acidic drugs	Proteins, fats	RayCure WCX
			RayCure MAX
Soil, sewage	Hydrophobic organic pollutants	Humic substances	RayCure WAX
			RayCure HLB
	Pesticide residues	Humic substances	RayCure C18
Oil	Fat-soluble vitamins, phospholipids, aflatoxins	Fats	RayCure Florisil
			RayCure Silica
			RayCure NH ₂
			RayCure PSA

Note: The above category cannot cover all matrices and analysis items, please follow the principle of “select based on the difference between target compounds and interferences” to choose appropriate SPE cartridges for other items.

RayCure C18 reversed-phase cartridge

Carbon loading: 19%
Particle size: 60µm
Pore size: 60
Surface area: 450 m²/g
Endcapped: Yes



RayCure C18 (endcapped) sorbent is based on octadecylsilane-bonded silica, it is the most common silica-based reversed phase SPE cartridge. It can retain most of organic substances from aqueous phase system and is widely used in the field of environment and food safety.

Features

- High carbon loading and strong hydrophobicity
- Strong retention to non-polar compounds
- Resistant to extreme pH
- Endcapped to reduce interference from alkali and polar compounds
- Effectively remove salts in aqueous matrices

Applications

Mainly used to enrich organic compounds of environmental water samples; drugs and their metabolites in blood, plasma, urine; desalinate of macromolecular samples, such as proteins and DNA

- Pesticide residues in water
- Odor substances in water

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-16001	100mg/1mL	100/PK
RC-204-16002	200mg/3mL	50/PK
RC-204-16003	500mg/3mL	50/PK
RC-204-16004	500mg/6mL	30/PK
RC-204-16005	1000mg/6mL	30/PK
RC-204-16006	2000mg/12mL	20/PK
RC-204-16007	5mg/20mL	20/PK

Notes: Equivalent to Waters Sep-Pak tC18/C18, Agilent Bond Elut C18, Supelco Supelclean ENVI-18.

RayCure Silica normal-phase cartridge

Particle size: 60µm
Pore size: 60
Surface area: 450 m²/g
Pore volume: 0.7mL/g



RayCure Silica is based on unbonded silica as sorbent, suitable for enrichment of polar compounds or removal of polar impurities from non-polar matrix, due to high polarity of silanol group. It is mainly applied to drugs and toxins from biological matrices, environmental pollutants and their metabolites, and cosmetics.

Features

- Extract polar compounds
- Weakly acidic, strong polar retention.
- Able to separate polar compounds with similar structures

Applications

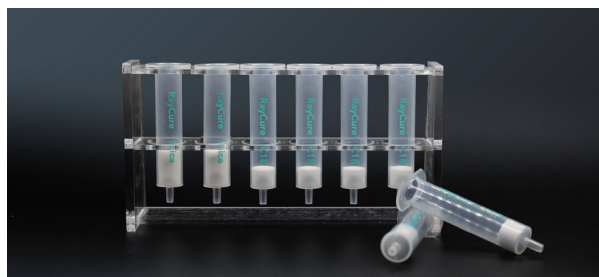
Mainly used for drugs and toxins from biological matrices; environmental pollutants and their metabolites; cosmetics.

- Pioglitazone, aconitine and PCB
- Separate bioactive molecules such as antibiotics, bile acids and oligosaccharides
- Mycotoxins in food, such as fumonisin

Product information

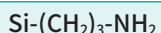
Part No.	Bed mass/cartridge volume	Unit size
RC-204-16841	100mg/1mL	100/PK
RC-204-16842	200mg/3mL	50/PK
RC-204-16843	500mg/3mL	50/PK
RC-204-16844	500mg/6mL	30/PK
RC-204-16845	1000mg/6mL	30/PK

Note: Equivalent to Agilent Bond Elut Silica and Waters Sep-Pak Silica.



RayCure NH₂ ion-exchange/normal-phase cartridge

Particle size: 60µm
 Pore size: 60 Å
 Surface area: 450 m²/g
 Pore volume: 0.7 mL/g
 Ion exchange capacity: 0.9 meq/g



RayCure NH₂ is based on aminopropyl-bonded silica as sorbent. Primary forces are anion exchange and polar interaction force, secondary force is non-polar force. It has strong polar adsorption in non-polar organic solution and weak anion exchange retention in aqueous solution. It can be used in sample preparation of analysis of pesticide residues in the field of food, environment, pharmaceuticals, to remove anionic compounds such as fatty acids, organic acids and sugars from pesticide residues.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-16101	100mg/1mL	100/PK
RC-204-16102	200mg/3mL	50/PK
RC-204-16103	500mg/3mL	50/PK
RC-204-16104	500mg/6mL	30/PK
RC-204-16105	1000mg/6mL	30/PK

RayCure SCX ion-exchange cartridge

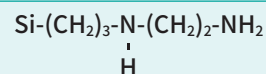
RayCure SCX is a strong cation exchange SPE cartridge based on high-purity spherical silica as sorbent, bonded with benzene sulfonic acid functional group. It is mainly used to extract alkali organic compounds or desalinate biological macromolecules, such as bacteriophage, drugs, organic alkaline, amino acids, catecholamines, herbicides, nucleic acid bases, nucleosides, surfactants.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-E1202	100mg/1mL	100/PK
RC-204-E1203	200mg/3mL	50/PK
RC-204-E1204	500mg/3mL	50/PK
RC-204-E1201	500mg/6mL	30/PK
RC-204-E1205	1000mg/6mL	30/PK

RayCure PSA ion-exchange cartridge

Particle size: 60µm
 Pore size: 60 Å
 Surface area: 450 m²/g
 Pore volume: 0.7 mL/g
 Ion exchange capacity: 1.5 meq/g



RayCure PSA is based on ethylenediamine-N-propyl bonded silica as sorbent. It has anion exchange and polar interaction force like NH₂, but with stronger ion exchange, form chelation with metal ions. It is mainly used for sample pre-treatment in pesticide residue analysis.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-16121	100mg/1mL	100/PK
RC-204-16122	200mg/3mL	50/PK
RC-204-16123	500mg/3mL	50/PK
RC-204-16124	500mg/6mL	30/PK
RC-204-16125	1000mg/6mL	30/PK

RayCure SAX ion-exchange cartridge

RayCure SAX is a strong anion exchange SPE cartridge based on high-purity spherical silica as sorbent, bonded with quaternary ammonium salt functional group. It is mainly used to extract weak anion compounds, such as carboxylic acids; remove strong anions from samples, such as organic acids, nucleic acids, nucleotides, sulfonic acids radical, inorganic ions; desalinate biological macromolecules.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-E1103	100mg/1mL	100/PK
RC-204-E1104	200mg/3mL	50/PK
RC-204-E1105	500mg/3mL	50/PK
RC-204-E1106	500mg/6mL	30/PK
RC-204-E1101	1000mg/6mL	30/PK

RayCure HLB reversed-phase cartridge

Particle size: 30 µm
Pore size: 70 Å
Surface area: 720 m²/g
Pore volume: 1.3 mL/g

N-vinylpyrrolidone-divinylbenzene copolymer

RayCure HLB is a reversed-phase SPE cartridge based on hydrophilic and lipophilic polymers as sorbent, with functional polystyrene/divinylbenzene. Hydrophobic divinylbenzene retains non-polar compounds, and hydrophilic N-vinylpyrrolidone retains polar compounds. It is developed to extract, enrich and purify a wide range of acidic, neutral and basic compounds in sample pre-treatment of veterinary drug residues in food.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-36471	30mg/1mL	100/PK
RC-204-36473	60mg/3mL	50/PK
RC-204-36474	150mg/3mL	50/PK
RC-204-36475	150mg/6mL	30/PK
RC-204-36476	200mg/6mL	30/PK
RC-204-36477	500mg/6mL	30/PK

Note: Equivalent to Waters Oasis HLB.

Features

- Universal reversed-phase adsorbents
- Water wettable, no concerns for drying
- Contains hydrophilic and hydrophobic groups on surface
- Tolerable pH range: 1-14, compatible with most of solvents
- Balanced retention to various polar and non-polar compounds

Application

Mainly used in the sample preparation of residual veterinary drugs in food; enrichment and purification of small molecular drugs in biological samples such as blood, urine; pre-treatment of environmental samples.

- Antibiotics, such as cephalosporins, chloramphenicol, sulfanilamide, tetracycline, marcolide
- Desalination to high-throughput biological macromolecule
- Organic traces, environmental priority pollutants, endocrine disruptors

Product information



RayCure MAX ion-exchange/re-versed-phase cartridge

Particle size: 70 µm
Pore size: 130 Å
Surface area: 210 m²/g
Pore volume: 0.7 mL/g
Ion exchange capacity: 0.5 meq/g

**N-vinylpyrrolidone-divinylbenzene
copolymer base**
CH2N(CH3)2C4H9

RayCure MAX is a reversed-phase water wettable SPE cartridge based on styrene-divinylbenzene polymer containing hydrophilic group and introducing strong anion exchange group (quaternary amine group) as adsorbent, perfect for enrichment of weak anion compounds. It is mainly for drugs and their metabolites in biological matrices; pesticide and veterinary drug residues in food and dairy products; and active ingredients in cosmetics.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-72804	100/PK	30mg/1mL
RC-204-72805	50/PK	60mg/3mL
RC-204-72803	30/PK	150mg/6mL
RC-204-72806	30/PK	200mg/6mL
RC-204-72802	30/PK	500mg/6mL

Note: Equivalent to other MAX, PAX cartridges.

RayCure MCX ion-exchange/re-versed-phase cartridge

Particle size: 70 µm
Pore size: 200 Å
Surface area: 80 m²/g
Pore volume: 0.4 mL/g
Ion exchange capacity: 0.5 meq/g

**N-vinylpyrrolidone-divinylbenzene
copolymer base - SO₃H**

RayCure MCX is a water-wettable SPE cartridge based on styrene-divinylbenzene polymer containing hydrophilic group and introducing strong cation exchange groups (sulfonic acid groups) as sorbent, perfect for enrichment of weak cation compounds. It is mainly used for pesticide and veterinary drug residues in food, and drugs and their metabolites in biological matrices.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-72854	30mg/1mL	100/PK
RC-204-72855	60mg/3mL	50/PK
RC-204-72860	60mg/6mL	30/PK
RC-204-72856	150mg/6mL	30/PK
RC-204-72857	200mg/6mL	30/PK
RC-204-72852	500mg/6mL	30/PK

Note: Equivalent to other MCX, PCX cartridges.

RayCure WAX ion-exchange/re-versed-phase cartridge

Particle size: 70 µm
Pore size: 120 Å
Surface area: 270 m²/g
Pore volume: 0.8 mL/g
Ion exchange capacity: 0.5 meq/g

**N-vinylpyrrolidone-divinylbenzene
copolymer base**
CH2-piperazine ring

RayCure WAX is a water-wettable SPE cartridge based on styrene-divinylbenzene polymer containing hydrophilic group and introducing weak anion exchange group (piperazine group) as sorbent, perfect for enrichment of strong anion compounds. It is mainly for drugs and their metabolites in biological matrices; environmental pollutants and development of new drug.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-72824	30mg/1mL	100/PK
RC-204-72825	60mg/3mL	50/PK
RC-204-72823	150mg/6mL	30/PK
RC-204-72826	200mg/6mL	30/PK
RC-204-72822	500mg/6mL	30/PK

Note: Equivalent to other MAX, PAX cartridges.

RayCure WCX ion-exchange/re-versed-phase cartridge

Particle size: 70 µm
Pore size: 180 Å
Surface area: 80 m²/g
Pore volume: 0.4 mL/g
Ion exchange capacity: 0.5 meq/g

**N-vinylpyrrolidone-divinylbenzene
copolymer base - COOH**

RayCureWCX is a water-wettable SPE cartridge based on styrene-divinylbenzene polymer containing hydrophilic groups and introducing weak cation exchange groups (carboxyl groups) as sorbent, perfect for enrichment of strong cation compounds. It is mainly used for drugs and their metabolites in biological matrices and the development of new drugs.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-72874	100/PK	30mg/1mL
RC-204-72875	50/PK	60mg/3mL
RC-204-72873	30/PK	150mg/6mL
RC-204-72876	30/PK	200mg/6mL
RC-204-72872	30/PK	500mg/6mL

Note: Equivalent to other WCX, PWCX cartridges.

RayCure AL-A normal-phase cartridge

Particle size: 100 μm
Pore size: 80 Å
Surface area: 130 m^2/g
Pore volume: 0.3 mL/g

Al_2O_3

RayCure AL-A cartridge is based on acidic alumina as sorbent, used to retain or remove polar and acidic compounds. It is a medium cation exchanger and strong polar adsorbent at pH 4.5.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-16861	100mg/1mL	100/PK
RC-204-16862	200mg/3mL	50/PK
RC-204-16863	500mg/3mL	50/PK
RC-204-16864	500mg/6mL	30/PK
RC-204-16865	1000mg/6mL	30/PK
RC-204-16866	2000mg/6mL	30/PK

Note: Equivalent to Waters Sep-Pak Alumina-A

RayCure AL-B normal-phase cartridge

Particle size: 100 μm
Pore size: 80 Å
Surface area: 130 m^2/g
Pore volume: 0.3 mL/g

Al_2O_3

RayCure AL-B cartridge is based on alkali alumina as sorbent, used to retain or remove polar and acidic compounds. It is a strong polar adsorbent at pH 8.5, suitable for Sudan red in pepper.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-16881	100mg/1mL	100/PK
RC-204-16882	200mg/3mL	50/PK
RC-204-16883	500mg/3mL	50/PK
RC-204-16884	500mg/6mL	30/PK
RC-204-16885	1000mg/6mL	30/PK
RC-204-16886	2000mg/6mL	30/PK

Note: Equivalent to Waters Sep-Pak Alumina-B

RayCure AL-N normal-phase cartridge

Particle size: 100 μm
Pore size: 80 Å
Surface area: 130 m^2/g
Pore volume: 0.3 mL/g

Al_2O_3

RayCure AL-N cartridge is based on neutral alumina as sorbent, used to retain or remove polar compounds. It is a strong polar adsorbent at pH 7.5.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-16901	100mg/1mL	100/PK
RC-204-16902	200mg/3mL	50/PK
RC-204-16903	500mg/3mL	50/PK
RC-204-16904	500mg/6mL	30/PK
RC-204-16905	1000mg/6mL	30/PK
RC-204-16906	2000mg/6mL	30/PK

Note: Equivalent to Waters Sep-Pak Alumina-N.

Features

- Strong polar adsorbent at pH 7.5, neutral surface
- Deactivation treatment, no interactions to process
- More stable than silica-bonded phase in high pH solution

Application

- Malachite green and crystal violet in aquatic products
- Vitamins, antibiotics, aromatic oils, enzymes, glycosides
- Sample pre-treatment of hormones
- Pigments such as Sudan red
- Electron-rich compounds such as heterocycles, aromatic hydrocarbons and organic amines



RayCure Florisil normal-phase cartridge

Particle size: 60 μm
 Pore size: 60 Å
 Surface area: 450 m^2/g
 Pore volume: 0.7 mL/g

MgO • SiO₂

RayCure Florisil cartridge utilizes natural Florisil as adsorbent. With strong adsorption, it's used to retain highly polar compounds from non-polar solutions, suitable for purification of pesticide residues in crops. It is mainly used to separate and purify pesticide residues.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-16941	100mg/1mL	100/PK
RC-204-16942	200mg/3mL	50/PK
RC-204-16943	500mg/3mL	50/PK
RC-204-16944	500mg/6mL	30/PK
RC-204-16945	1000mg/6mL	30/PK

Note: Equivalent to Waters Sep-Pak Alumina-N.

RayCure GCB ion-exchange/reversed-phase cartridge

Particle size: 100-200 mesh
 Pore size: 500 Å
 Surface area: 100-200 m^2/g
 Pore volume: 1.1 mL/g

RayCure GCB cartridge is based on graphitized carbon with planar structure as sorbent, mainly used to remove pigments and polar substances from crops. It utilizes the dual action of polarity and ion exchange solid phase to effectively purify all kinds of sample matrices.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-13802	250mg/6mL	30/PK
RC-204-13804	500mg/6mL	30/PK
RC-204-68305	1000mg/6mL	30/PK

A wide range of adsorbents for selection
Effective purification



RayCure GCB/NH₂ mixed-mode cartridge

RayCure GCB/NH₂ cartridge is based on graphitized carbon and amino as sorbents, able to remove pigments by GCB as well as anions by NH₂. It is mainly used for pre-treatment of pesticide residues in agricultural products.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-13822	500mg/500mg/6mL	30/PK

RayCure GCB/PSA mixed-mode cartridge

RayCure GCB/PSA cartridge is based on graphitized carbon and PSA as sorbents, able to remove pigments by GCB as well as anions by PSA, mainly used in sample preparation of pesticide residues in agricultural products. Similar to effect of RayCure GCB/NH₂, the ion exchange capacity of PSA is twice that of NH₂ as it has stronger ability of anion removal. Select GCB/PSA when GCB/NH₂ cannot remove impurities well. It is mainly used in sample preparation of pesticide residue analysis, to remove fatty acids in residual pesticides of foods.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-13812	500mg/500mg/6mL	30/PK

Product information



RayCure PA

RayCure PA cartridge specialized for polyamide decolorization contains no bonded functional groups in sorbent, purify through surface adsorption, often used to remove or separate pigments from food and textiles.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-E3004	500mg/3mL	50/PK
RC-204-E3003	500mg/6mL	30/PK
RC-204-E3001	1000mg/6mL	30/PK
RC-204-E3002	1000mg/12mL	20/PK

RayCure IC

IC mycotoxin-specific column, namely the immunoaffinity column, is based on the specific immune reaction between antigen and antibody. The column is filled with antibodies that can specifically recognize and bind to the target mycotoxins. When the sample solution containing mycotoxins passes through the column, the toxins bind to the antibodies and are retained, while other impurities are eluted. Finally, the target mycotoxins are eluted with a specific eluent, achieving efficient separation and enrichment of mycotoxins.

Product information

Part No.	Solid Phase Extraction Column	Unit size
RC-204-L0701	IC Mycotoxin-Specific Column 1mL	50/PK

RayCure BAP

RayCure BAP cartridge specialized for benzo(a)pyrene has better oil removal effect, more stable recovery rate also lower background noise and less solvent consumption, and relatively simple method.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-91401	500mg/6mL	30/PK

RayCure TPH

RayCure TPH cartridge specialized for pesticide residues in Chinese herbal medicines can be used in sample preparation in Determination of 488 pesticides and related chemicals residues in mulberry twig, honeysuckle, barbary wolfberry fruit and lotus leaf - GC-MS, and Determination of 413 pesticides and related chemicals residues in mulberry twig, honeysuckle, barbary wolfberry fruit and lotus leaf - LC-MS.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-E3201	2000mg/12mL	20/PK

RayCure SD

RayCure SD Sudan red special cartridge overcomes the shortcoming of using deactivated neutral alumina cartridges in determination of Sudan dyes in foods by HPLC. Adsorption of Sudan Red by molecular imprinting is time-saving and has less solvent consumption, good oil removal effect and high recovery rate and reproducibility, perfect for the detection of Sudan Red in various food matrices.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-E3301	500mg/6mL	30/PK

RayCure TPT

RayCure TPT cartridge specialized for tea leaves contains specific sorbents in optimal ratio, to adsorb impurities from multiple interactions, to achieve simultaneous detection of multiple pesticide residues in complex matrix of tea leaves.

Product information

Part No.	Bed mass/cartridge volume	Unit size
RC-204-91402	1000mg/6mL	30/PK
RC-204-E2401	2000mg/12mL	20/PK

RayCure C8/SCX

Chemical Phase = C8 + SCX
Organic Loading = 12.4%
Average Pore Size = 60Å
Cation Exchange = 0.077 meq/g

Surface Area = 500 m²/g
Pore Volume = 0.77 cm³/g
Warranty: 1 year

RayCure C8/SCX is a copolymerized sorbent, utilizing both a reverse (C8) phase and an ion exchange (benzene-sulfonic acid) phase bonded to the same particle. The mixed mode nature allows for maximum selectivity for the extraction of acids, neutrals and bases. This flexibility and versatility is ideal for both screening and confirmation analyses of virtually all drug categories.

Product information

Commodity code	Specification	Pack
RC-204-E9203	200mg/3mL	50pcs/BOX
RC-204-E9204	200mg/6mL	30pcs/BOX
RC-204-E9205	500mg/3mL	50pcs/BOX
RC-204-E9206	500mg/6mL	30pcs/BOX
RC-204-E9207	1000mg/6mL	30pcs/BOX

RayCure C8/SAX

Chemical Phase = SAX + C8
Organic Loading = 12.1%
Average Pore Size = 60Å
Anion Exchange = 0.144 meq/g

Surface Area = 500 m²/g
Pore Volume = 0.77 cm³/g
Warranty: 1 year

RayCure C8/SAX sorbent is copolymerized on a rigid, purified silica gel support. The two functional groups include a reverse phase and a primary amine ion exchanger. This sorbent is useful for analyzing tetrahydrocannabinol(THC) and its metabolites. Additionally, its dual functionality is useful for acids and hydrophobic compounds.

Product information

Commodity code	Specification	Pack
RC-204-EB303	200mg/3mL	50pcs/BOX
RC-204-EB304	200mg/6mL	30pcs/BOX
RC-204-EB305	500mg/3mL	50pcs/BOX
RC-204-EB306	500mg/6mL	30pcs/BOX
RC-204-EB307	1000mg/6mL	30pcs/BOX



RayCure SPE Cartridge Selection Guide

Pre-treatment for food safety industry

Detection of veterinary drug residues

	Method	Sample matrix	Target compound	SPE Cartridge	Bed mass/ volume	Unit size	Part No.
1	Determination of macrolides residues in fishery products by LC-MS	Aquatic products	Macrolide	RayCure AL-N	2g/6mL	30/PK	RC-204-16906
2	Determination of octylphenol, nonylphenol, bisphenol A, diethylstilbestrol, estrone, 17 α -ethinylestradiol, 17 β -estradiol and estriol residues in fishery products by GC-MS	Aquatic products	Octylphenol, nonylphenol, bisphenol A, diethylstilbestrol, estrone, 17 α -ethylestradiol, 17 β -estradiol, estriol	RayCure HLB	60mg/3ml	50/PK	RC-204-36473
3	Determination of trifluralin residues in aquatic products by GC	Aquatic products	Trifluralin	RayCure Florisil	1g/6mL	30/PK	RC-204-16945
4	Determination of megestrol acetate and medroxyprogesterone acetate by LC-MS	Meat, fats, livers, kidneys and milk of pigs, cattle and sheep	Megestrol acetate Medroxyprogesterone acetate	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
5	Determination of five kinds of alpha-agonists residues in animal	Pork, pig livers and kidneys; chicken meat and livers	Five kinds of α 2-receptor agonists	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
6	Determination of cyproheptadine and clonidine residues in pig tissues	Meat, livers, kidneys and urine of pigs	Cyproheptadine Clonidine	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
7	Determination of ethopabate residues in edible tissue of poultry by HPLC	Edible tissue of poultry	Ethopabate	RayCure Florisil	100mg/1mL	100/PK	RC-204-16941
8	Determination of Livamisole residues in milk by HPLC	Milk	Levamisole	RayCure C18	500mg/3mL	50/PK	RC-204-16003
9	Determination of penicillins residues in aquatic products by HPLC	Aquatic products	Penicillin	RayCure HLB	60mg/3ml	50/PK	RC-204-36473
10	Determination of paracetamol residues in animal food - HPLC	Meat, livers and kidneys of pigs, cattle and sheep	Acetaminophen	RayCure HLB	60mg/3ml	50/PK	RC-204-36473
11	Determination of erythromycin residues in aquatic products - LC-MS-MS	Aquatic products	Erythromycin	RayCure HLB	200mg/6mL	30/PK	RC-204-36476
12	Determination of Lincomycin, Clindamycin and Spectinomycin residues in animal derived food – GC-MS	Meat, livers and kidneys of pigs, cattle and chickens, milk and eggs	Lincomycin Clindamycin Spectinomycin	RayCure HLB	60mg/3mL	50/PK	RC-204-36473
13	Determination of Avilamycin Residues in the Edible Tissues of Pig - LC-MS-MS	Meat, skins, livers, kidneys and fats of pigs	Avilamycin	RayCure AL-N	1000mg/6mL	30/PK	RC-204-16905
14	Determination of chloramphenicol residues in Milk by LC-MS/MS	Milk	Chloramphenicol	RayCure C18	500mg/3mL	50/PK	RC-204-16003
15	Determination of thiamphenicol residues in milk by HPLC	Milk	Thiamphenicol	RayCure C18	200mg/3mL	50/PK	RC-204-16002
16	Determination of Nicarbazine Residues in Edible Tissues of Chicken - HPLC	Chicken meat, livers and kidneys	Nicarbazin	RayCure C18	500mg/3mL	50/PK	RC-204-16003
17	Determination of residual halofuginone amount in animal food - HPLC	Chicken meat, livers and kidneys	Halofuginone	RayCure HLB	500mg/6mL	30/PK	RC-204-36477
18	Determination of residual 13 types of sulfonamides in animal food - HPLC	Meat and livers of pigs and chickens	13 kinds of sulfonamides	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
19	Determination of avermectin and ivermectin residues in aquatic products - HPLC	Aquatic products	Avermectin Ivermectin	RayCure AL-B	1000mg/6mL	30/PK	RC-204-16885
20	Determination of residual abamectins in Milk - HPLC	Milk	Avermectin	RayCure C18	500mg/6mL	30/PK	RC-204-16004

Detection of veterinary drug residues

	Method	Sample matrix	Target compound	SPE Cartridge	Bed mass/ volume	Unit size	Part No.
21	Determination of diazepam and methaqualone residues in animal derived food – GC-MS	Pork	Diazepam Methaqualone	RayCure C18	500mg/3mL	50/PK	RC-204-16003
22	Determination of 17 β -estradiol, estriol and ethinylestradiol residues in milk and milk products - GC-MS	Milk and dairy products	17 β -estradiol Estriol Ethinylestradiol	RayCure C18	500mg/3mL	50/PK 50/PK	RC-204-16003
				RayCure Silica	500mg/3mL		RC-204-16843
23	Determination of trimethoprim residues in aquatic products - HPLC	Aquatic products	Trimethoprim	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
24	Determination of sodium nifurstyrenate residues in animal food - LC-MS-MS	Meat and livers of pigs and chickens	Sodium nifurstyrenate	RayCure HLB	60mg/3ml	50/PK	RC-204-36473
25	Determination of cyromazine and metabolite melamine residues in animal food - UPLC-MS	Meat, livers of pigs and chickens; eggs	Cyromazine and its metabolite melamine	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
26	Determination of cypermethrin, fenvalerate and deltamethrin residues in aquatic products - GC	Aquatic products	Cypermethrin fenvalerate deltamethrin	RayCure C18	200mg/3mL	50/PK	RC-204-16002
27	Determination of dapsone residues in animal food - LC-MS/MS	Meat and livers of pigs and cattle	Dapsone	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
28	Determination of azaperone and its metabolite in animal Food - HPLC	Meat, skins with fats, livers and kidneys of pigs	Azapirone	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
29	Determination of multi-residues of chloramphenicols in animal-original food	Aquatic products, livestock products and livestock by-products	Chloramphenicol drugs	RayCure Florisil	1000mg/6mL	30/PK	RC-204-16945
30	Determination of melamine in raw milk and dairy products	Raw milk and dairy products	Melamine	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
31	Determination of β -agonists residues in foodstuff of animal origin – LC-MS/MS	Pig livers and pork	β -receptor agonist	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
32	Analysis of fourteen quinolones in food of animal origin by HPLC-MS/MS	Meat, livers and kidneys of pigs; milk, eggs	14 kinds of quinolones drugs	RayCure HLB	200mg/6mL	30/PK	RC-204-36476
33	Analysis of β -agonists in foods of animal origin by HPLC-MS/MS	Meat, liver and kidney and urine of pig	β -receptor agonist	RayCure HLB	500mg/6mL	30/PK	RC-204-36477
				RayCure MCX	60mg/3mL	50/PK	RC-204-72855
34	Determination of cephalixin and ceftiofur residues in food of animal origin - LC-MS/MS	Animal muscle, liver, kidney, eggs, milk	Cephalexin and ceftiofur	RayCure C18	500mg/6mL	30/PK	RC-204-16004
35	Determination of penicillins residues in food of animal origin - LC-MS/MS	Meat, livers, kidneys of pigs; milk, eggs	Penicillin antibiotics	RayCure HLB	500mg/6mL	30/PK	RC-204-36477
36	Determination of tetracyclines residues in food of animal origin - LC-MS/MS and HPLC	Animal meat and visceral tissues; aquatic products; milk	Tetracycline veterinary drugs	RayCure HLB	60mg/3ml	50/PK	RC-204-36473
37	Determination of aminoglycosides residues in animal tissues - HPLC-MS/MS	Animal viscera and meat; aquatic products	Aminoglycoside drugs	InertSep C18	200mg/3mL	50/PK	RC-204-16002
38	Determination of sulfonamide residues in aquatic products – HPLC	Aquatic products	Sulfonamides	RayCure HLB	60mg/3ml	50/PK	RC-204-36473
39	Method for the determination residues of the metabolites of nitrofurantoin in pork, beef, chicken, porcine liver and aquatic products - LC-MS-MS	Pork, beef, chicken, pork livers and aquatic products	Nitrofurantoin metabolites	RayCure HLB	60mg/3mL	50/PK	RC-204-36473
40	Determination of malachite green and crystal violet residues in aquatic product	Aquatic products	Malachite green crystal violet	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
				RayCure AL-N	1000mg/6mL	30/PK	RC-204-16905

RayCure SPE Cartridge Selection Guide

Pre-treatment for food safety industry

Detection of additives, prohibited substances, pollutants

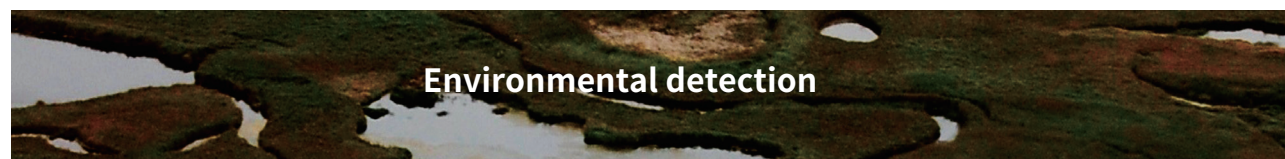
	Method	Sample matrix	Target compound	SPE Cartridge	Bed mass/column	Unit size	Part No.
1	Determination of ochratoxin A in food - HPLC	Food	Ochratoxin	RayCure MAX	250mg/6mL	30/PK	RC-204-72801
2	Determination of deoxynivalenol in food - HPLC	Food	Deoxynivalenol and its acetylated derivatives	RayCure HLB	200mg/6mL	30/PK	RC-204-36476
3	Determination of patulin in apple and hawthorn products	Fruits, fruit and vegetable juices and alcoholic foods	Patulin	RayCure MAX	250mg/6mL	30/PK	RC-204-72801
4	Test method of domoic acid in amnesic shellfish poisoning	Shellfish	Amnesic shellfish toxin	RayCure MAX	500mg/6 mL	30/PK	RC-204-72802
5	Determination of zearalenone in cereals	Food	Zearalenone	RayCure HLB	500mg/6mL	30/PK	RC-204-36477
6	Determination of diarrhetic shellfish poison in shellfish	Shellfish and its products	Diarrhetic shellfish toxin	RayCure HLB	60mg/3ml	50/PK	RC-204-36473
7	Determination of paralytic shellfish poison in shellfish	Oysters, scallops and other shellfish and their products	Paralytic shellfish toxin	RayCure C18	500mg/3mL	50/PK	RC-204-16003
8	Determination of citrinin in monascus products	Rice, barley, oats, wheat, corn, pepper, monascus products	Citrinin	RayCure C18	500mg/3mL	50/PK	RC-204-16003
9	Determination of microcystin in freshwater products for import and export	Fish, shrimp, mussels and other aquatic products	Microcystin	RayCure C18	500mg/6mL	30/PK	RC-204-16004
10	Determination of benzo(a)pyrene in foods	Cereals and their products; meat and its products; aquatic animals and their products	Benzo (a) pyrene	RayCure AL-N	500mg/6mL	30/PK	RC-204-16904
11	Determination of 9 antioxidants in food	Food	9 kinds of antioxidants	RayCure C18	2000mg/12mL	20/PK	RC-204-16006
12	Determination of monascas colours in foods	Flavor fermented milk, jam, fermented bean curd, dried almonds, candy, instant noodle products, cakes, biscuits, cooked meat products, soy sauce, fruit and vegetable juice drinks, solid drinks, blended alcoholic drink, jelly, potato chips	Three kinds of monascus pigments	RayCure HLB	200mg/6mL	30/PK	RC-204-36476
13	Determination of Vitamin K1 in Food	Food	Vitamin K1	RayCure AL-N	1000mg/6 mL	30/PK	RC-204-16905
14	Determination of bongkreic acid in tremella fuciformis berk	Tremella and its products, fermented rice noodles and their products and other foods	Bongkreic acid	RayCure MAX	60mg/3mL	50/PK	RC-204-72805
15	Determination of acrylamide in foods	Thermally processed foods (e.g. fried, roasted, baked)	Acrylamide	RayCure HLB	200mg/6mL	30/PK	RC-204-36476
16	Determination of heterocyclic amine substances in high-temperature cooked foods	Grilled fish, roast meat and their products	Heterocyclic amines	RayCure HLB	200mg/6mL	30/PK	RC-204-36476
17	Determination of neotame in foods	Beverages, preserves, cakes, roasted seeds and nuts, pickles, candies, jams, jellies, compound seasonings and foods	Neotame	RayCure C18	500mg/6mL	30/PK	RC-204-16004
18	Determination of lutein in foods	Infant formula, dairy products, frozen drinks, rice flour products, baked goods, jams, jellies and beverages	Lutein	RayCure AL-N	500mg/6mL	30/PK	RC-204-16904

Detection of additives, prohibited substances, pollutants

	Method	Sample matrix	Target compound	SPE Cartridge	Bed mass/column	Unit size	Part No.
19	Determination of polycyclic aromatic hydrocarbons in foods	Food	Polycyclic aromatic hydrocarbons	RayCure Florisil	500 mg/3 mL	50/PK	RC-204-16943
20	Determination of phosphatidylcholine, phosphatidyl ethanolamine and phosphatidylinositol in food	Soybean lecithin, soybean oil, rapeseed oil, peanut oil, sunflower seed oil	Phosphatidylcholine phosphatidylethanolamine phosphatidylinositol	RayCure NH2	1000mg/6 mL	30/PK	RC-204-16105
21	Determination of ciguatoxin in aquatic products	Edible parts of aquatic products	Ciguatoxin	RayCure C18	200mg/3mL	50/PK	RC-204-16002
22	Determination of tetraacetate in foods	Jam, preserved fruits, canned pickled vegetables, vegetable puree (sauce) except tomato sauce, canned nuts and seeds, canned eight-treasure porridge, compound seasonings, beverages	Ethylenediamine tetraacetate	RayCure MAX	250mg/6 mL	30/PK	RC-204-72801
23	Food contact materials and articles - Determination of migration of maleic acid and its acid anhydride	Food simulant	Maleic acid and its anhydride	RayCure C18	500mg/6mL	30/PK	RC-204-16004
24	Food contact materials and articles - Determination of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA)	Food contact materials and products (e.g., cardboards, rubber, polyethylene, plastics, resins, non-stick pan coatings)	Perfluorooctane sulfonates (PFOS) Perfluorooctanoic acid (PFOA)	RayCure WAX	250mg/6 mL	30/PK	RC-204-72821
25	Determination of melamine in raw milk and dairy products	Raw milk, dairy products	Melamine	RayCure MCX	60mg/3mL	50/PK	RC-204-72855
26	Determination of 4-amino-4,5-dichloro- α [(tert-butylamino) methyl]-benzyl alcohol (clenbuterol) residues in animal foods	Meat, viscera and their products of fresh or frozen livestock; human or animal blood, urine	Clenbuterol	RayCure WCX	60mg/3mL	50/PK	RC-204-72875

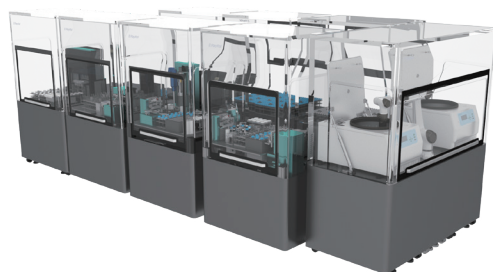
RayCure SPE Cartridge Selection Guide

Pre-treatment for environmental monitoring industry



	Method	Sample matrix	Target compound	SPE cartridge	Bed mass/volume	Unit size	Part No.
1	Determination of benzidine - HPLC	Water quality	Benzidine	RayCure MCX	250 mg/6mL	30/PK	RC-204-72851
2	Examination methods for urban water supply	Urban water supply	Polycyclic aromatic hydrocarbons	RayCure C18	500mg/6mL	30/PK	RC-204-16004
3			Organophosphorus pesticide	RayCure HLB	60mg/3mL	50/PK	RC-204-36473
4	Determination of aniline compounds – GC-MS	Water quality	Aniline compounds	RayCure Florisil	1000mg/6mL	30/PK	RC-204-16945
7	Determination of phenols compounds – GC-MS	Water quality	Phenolic compounds	RayCure HLB	500mg/6mL	30/PK	RC-204-36477
8	Determination of organochlorine pesticides and chlorobenzenes – GC-MS	Water quality	Organochlorine pesticide Chlorobenzene compounds	RayCure C18	500mg/6mL	30/PK	RC-204-16004
9	Determination of polychlorinated biphenyls (PCBs) – GC-MS	Water quality	PCBs	RayCure Florisil	1000mg/6mL	30/PK	RC-204-16945
10	Determination of nitroaromatics – GC-MS	Water quality	Nitrobenzene compounds	RayCure C18	1000mg/6mL	30/PK	RC-204-16005
11	Determination of nitroaromatics by GC	Water quality	Nitrobenzene compounds	RayCure HLB	500mg/6mL	30/PK	RC-204-36477
13	Determination of polycyclic aromatic hydrocarbons by LLC and SPE - HPLC	Water quality	Polycyclic aromatic hydrocarbons	RayCure C18	1000mg/6mL	30/PK	RC-204-16005
15	Determination of microcystins in water	Water quality	Microcystin	RayCure C18	500mg/6mL	30/PK	RC-204-16004
16	Standard examination methods for drinking water - Organic parameters	Water quality	Semi-volatile organic compounds	RayCure C18	500mg/6mL	30/PK	RC-204-16004
17	Determination of petroleum hydrocarbons (C10-C40) - GC	Soil and sediment	Petroleum hydrocarbon	RayCure Florisil	1g/6mL	30/PK	RC-204-16945
18	Determination of semi-volatile organic compounds – GC/MS	Soil and sediment	Semi-volatile organic compounds	RayCure Florisil	1g/6mL	30/PK	RC-204-16945
19	Determination of organochlorine pesticides – GC/MS	Soil and sediment	Organochlorine pesticide	RayCure Florisil	1g/6mL	30/PK	RC-204-16945
20	Determination of polycyclic aromatic hydrocarbon by GC-MS	Soil and sediment	Polycyclic aromatic hydrocarbons	RayCure Silica	1000mg/6mL	30/PK	RC-204-16845
21	Determination of polycyclic aromatic hydrocarbons - HPLC	Soil and sediment	Polycyclic aromatic hydrocarbons	RayCure Silica	1000mg/6mL	30/PK	RC-204-16845
22	Determination of polychlorinated biphenyls (PCBs) – GC-MS	Soil and sediment	PCBs	RayCure Silica	1000mg/6mL	30/PK	RC-204-16845
23	Determination of 13 sulfonyleurea herbicides residues in soil by LC/MS/MS	Soil	13 kinds of sulfonyleureas herbicides	RayCure HLB	200mg/6mL	30/PK	RC-204-36476
24	Determination of 9 sulfonyleurea herbicides residues in soils by LC-MS	Soil	9 kinds of sulfonyleureas herbicides	RayCure C18	500mg/6mL	30/PK	RC-204-16004

Organic Sample Preparation



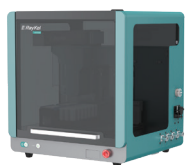
ISP series
Integrated Sample Preparation Workstation



DRQ
Automated QuEChERS Handling Platform



AGV
Lab Robot



AP 300
Automated Liquid
Handling Station



ASPE Ultra
Automated Solid
Phase Extraction



MASS-M01 Pro
Solid Phase
Micro-Extraction



Fotector series
Automated Solid
Phase Extraction



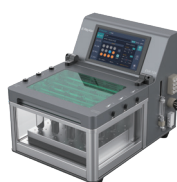
Fotector 02P
Automated Solid
Phase Extraction



SPEVA
Automated SPE &
Evaporation System



Auto EVA 80
Automated Evaporation
System



Auto EVA 12
Automated Evaporation
System



MPE PRO
High-throughput Vacuum
Parallel Evaporator



HPFE series
Pressurized Fluid
Extraction System



V20
Vertical Oscillator



AH series
Automated
Homogenizer

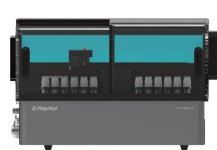
Inorganic Sample Preparation



AP 210
Automated Acid-Adding
System



XTseries
Microwave Digestion
Systems



Auto GDA series
Automated Graphite Digestion
System



HE series
Hot Plate

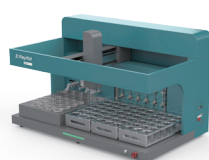


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