

Applications for Post-Column Derivatization with the Pickering-System ONYX PCX



Please Note: Every System can be also used for different applications; it's done with a simple and uncomplicated change of the reactorcoil and configuration changes in the software. (e.g. shut off one syringe pump, change the flow rate); Usually also column and eluants should be exchanged. So you can use the system for many different applications.

Amino Acids and Biogenic Amines

Application	Gradient / Column / Eluents / Detector	Product No., Reactor Size	Pickering-Kit	Derivatization Reagent(s)
Amino Acid Analysis of Protein Hydrolysates in 30 min.	quaternary gradient Na ⁺ -Ion Exchange Column 3 Na ⁺ -Buffer, 1 Regenerant UV-Detector (Trione) or Fluorescence-Detector (OPA)	1153-1022, 0.5 mL Trione or 1153-1012, 0.15 mL OPA	0352-0058, (T200)* 0352-0057 (T100C) * 0352-0059 (OPA)	Single-Step Reaction: Trione (ninhydrin) or o-phthaldialdehyde (OPA) / mercaptoethanol-derivative
Amino Acid Analysis of Collagen Hydrolysates in 30 min.	quaternary gradient Na ⁺ -Ion Exchange Column 3 Na ⁺ -Buffer, 1 Regenerant UV-Detector (Trione) or Fluorescence-Detector (OPA)	1153-1022, 0.5 mL Trione or 13153-1012, 0.15 mL OPA	0352-0062, (T200) 0352-0061 (T100C) 0352-0063 (OPA)	Single-Step Reaction: Trione (ninhydrin) or o-phthaldialdehyde (OPA) / mercaptoethanol-derivative
Amino Acid Analysis of Oxidized Feed Hydrolysates in 33 min.	quaternary gradient Na ⁺ -Ion Exchange Column 3 Na ⁺ -Buffer, 1 Regenerant UV-Detector (Trione) or Fluorescence-Detector (OPA)	1153-1022, 0.5 mL Trione or 13153-1012, 0.15 mL OPA	0352-0021, (T200) * 0352-0020, (T100C) * 0352-0022, (OPA)	Single-Step Reaction: Trione (ninhydrin) or o-phthaldialdehyde (OPA) / mercaptoethanol-derivative
Amino Acid Analysis of Native Samples in 70 min.	quaternary gradient Li ⁺ -Ion Exchange Column 2 / 3 Li ⁺ -Buffer, 1 Regenerant UV-Detector (Trione) or Fluorescence-Detector (OPA)	1153-1022, 0.5 mL Trione or 1153-1012, 0.15 mL OPA	0352-0007, (T200) * 0352-0006, (T100C) * 0352-0008, (OPA)	Single-step Reaction: Trione (ninhydrin) or o-phthaldialdehyde (OPA) / mercaptoethanol-derivative
Biogenic Amines	ternary gradient K ⁺ -Ion Exchange Column 1 K ⁺ -Buffer, 1 Regenerant Fluorescence-Detector	1153-1012, 0.15 mL	0352-0040	Single-Step Reaction: o-Phthaldialdehyd (OPA) / Mercaptoethanol-Derivat

* T200 Trione (Ninhydrin) with a shelf life of 3 month, T100C Trione (Ninhydrin) with a shelf life of 12 month.

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Mycotoxins

Application	Gradient / Column / Eluents / Detector	Product No., Reactor Size	Pickering-Kit	Derivatization Reagent(s)
Aflatoxins	isocratic, RP-C18-Column Methanol, Acetonitrile/Water Fluorescence-Detector	1153-1032, 1.4 mL	0352-0050	Single-Step Reaction: aqueous iodine solution
Fumonisin	binary gradient, RP-C18-Column Methanol/Phosphatbuffer Fluorescence-Detector	1153-1012, 0.15 mL		Single-Step Reaction: o-phthalaldehyde (OPA) / mercaptoethanol- derivative
Ochratoxin A	isocratic, RP-C18-Column Acetonitrile/Methanol/Water/ Acetic Acid Fluorescence-Detector	1153-1022, 0.5 mL		Single-Step Reaction: aqueous ammonia solution
Trichothecenes (DON/NIV)	isocratic, RP-C18-Column Acetic Acid/Acetonitrile Fluorescence-Detector	1153-1072, 1.2/1.6 mL		Two-Step Reaction: 1) NaOH 2) 2,4-pentadion in buffer

Pesticide

Application	Gradient / Column / Eluents / Detector	Product No., Reactor Size	Pickering-Kit	Derivatization Reagent(s)
N-Methyl Carbamates (Insecticides)	binary gradient RP-C18-Column Water/Methanol or Water/Acetonitrile Fluorescence-Detector (OPA)	1153-1052, 0.5 mL	0352-0002 (23+ Components) 0352-0003, (EPA Methode 531.1) 0352-0009 (EPA Methode 531.2) 0352-0004, (AOAC-Methode 985.23)	Two-Step Reaction 1) NaOH 2) o-phthalaldehyde (OPA) / mercaptoethanol- derivative
Glyphosate / AMPA (Herbicide)	binary gradient K ⁺ -Ion-Exchange-Column 1 K ⁺ -Buffer, 1 Regenerant Fluorescence-Detector (OPA)	1153-1052, 0.5 mL	0352-0010	Two-Step Reaction 1) NaOCl 2) o-phthalaldehyde (OPA) / mercaptoethanol- derivative
Paraquat / Diquat	ternary gradient K ⁺ -Ion-Exchange-Column 2 K ⁺ -Buffer, 1 Regenerant UV-Detector	1153-1012, 0.15 mL	0352-0042 (only for water analysis)	Single-Step Reaction sodium hydrosulfite solution

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Antibiotics

Application	Gradient / Column / Eluents / Detector	Product No., Reactor Size	Pickering-Kit	Derivatization Reagent(s)
Streptomycin	isocratic, RP-C18-Column Ion-Pair Reagent, Buffer Fluorescence-Detector	1153-1052, 0.5 mL	0532-0041	Two-Step Reaction fluorescamine or naphthoquinone-sulfonic acid / NaOH
Aminoglycoside Antibiotics	ternary gradient K ⁺ -Ion-Exchange-Column 2 K ⁺ -Buffer, 1 Regenerant Fluorescence-Detector	1153-1012, 0.15 mL	0352-0041	Single-Step Reaction o-phthaldialdehyde (OPA) / mercaptoethanol-derivative
Polyether Antibiotics, Sulfonamides	isocratic, RP-C18-Column UV-Detector	1153-1082, 1.4 mL	0352-0051	Two-Step Reaction vanillin or dimethylaminobenzaldehyde in methanolic sulfuric acid
Sulfonamides	isocratic, RP-C18-Column Fluorescence-Detector	1153-1032, 1.4 mL		Single-Step Reaction: Fluorescamine

Other Applications

Application	Gradient / Column / Eluents / Detector	Product No., Reactor Size	Pickering-Kit	Derivatization Reagent(s)
Chrom (III)/(VI)	isocratic, Ion-Exchange-Column UV-Detector	1153-1022, 0.5 mL		Single-Step Reaction 1,5-diphenylcarbazine in methanolic sulfuric acid
Formaldehyde	isocratic, RP-C18-Column Buffer Fluorescence-Detector	1153-1022, 0.5 mL		Single-Step Reaction: 2,4-pentadion in acidic buffer
Paralytic Shellfish Toxins	Binary gradient, RP-C18-Column Ion-Pair-Reagent, ACN, Buffer Fluorescence-Detector	1153-1062, 1.0 mL	0352-0052	Two-step reaction: 1) periodic acid in alkaline buffer 2) diluted nitric acid
Polyphosphates / Phosphonates	isocratic, binary gradient Ion-Exchange-Column, Buffer UV-Detector (Trione)	on request, 2.0 - 2.5 mL		Two-step reaction: 1) HNO ₃ resp. ammonium peroxodisulfate 2) molybdenum-vanado reagent
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	Detector			
Heavymetals and Earth Alkaline Elements	isocratic, Ion-Exchange-Column UV-Detector (Trione)	on request, 0.7 mL		4-(2-pyridylazo)resorcinol (PAR) / zinc-EDTA-solution
Vitamin B1 (Thiamine)	isocratic, RP-C18-Column Ion-Pair Reagent, Buffer Fluorescence-Detector (OPA)	1153-1022, 0.5 mL		Single-step reaction: alkaline potassium ferricyanide solution
Vitamin B6 (Pyridoxin / Pyridoxal)	isocratic, RP-C18-Column Buffer Fluorescence-Detector (OPA)	1153-1022, 0.5 mL		Single-step reaction: semicarbazide
D-Biotin (Vitamin B7)	isocratic, RP-C18-Column Phosphatbuffer, Methanol Fluorescence-Detector	on request, 2.0 mL		Single-step-reaction: Avidin-FITC
Bromate	isocratic, Ion-Exchange-Column UV-Detector (Trione)	1153-1022, 0.5 mL	0785150, (Anion Exchange column)	Single-step reaction: o-Dianisidine dihydrochloride solution, HNO ₃ / KBr
Vogliobose	isocratic, Amino Column Fluorescence-Detector (OPA)	1153-1102, 3.5 mL	1446250, (Amino column)	Single-step reaction: taurine, natriumperidodat in water
NDELA	isocratic, RP-C18-Column UV-Detector (Trione)	1153-1098, 1.0 mL		Single-step reaction: 1 (Naphthyl) ethylenediamin-dihydrochloride, water, Sulfanilamide, o-phosphosacid