what if each drop was compliant?

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Together.

Complete solutions for
wastewater analysis

The life science business of Merck operates as MilliporeSigma in the U.S. and Canada.

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Merck has brought together the world's leading Life Science brands, so whatever your life science problem, you can benefit from our expert products and services.

Supelco®

Analytical Products

The Supelco® portfolio of analytical solutions of Merck is developed by analytical chemists for analytical chemists to ensure your results are accurate, precise and reproducible. Every product is meticulously quality-controlled to maintain the integrity of your testing protocols and, with our dedicated scientists, the expertise you need is always on hand.

Sigma-Aldrich®

Lab & Production Materials

The Sigma-Aldrich® portfolio of Merck offers a strong and ever-expanding offering of lab and production materials. Through our technical support and scientific partnerships, we help connect our customers with a whole world of progress.

Millipore®

Preparation, Separation, Filtration & Monitoring Products

The Millipore® portfolio of Merck offers an ecosystem of industry-leading products and services, spanning preparation, separation, filtration and monitoring – all of which are deeply rooted in quality, reliability and timetested processes. Our proven products, regulatory and application expertise are a strong foundation you can rely on to consistently perform at the highest level.

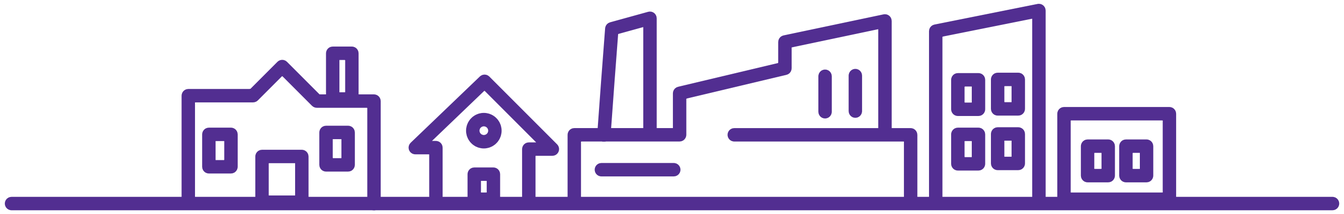
Milli-Q®

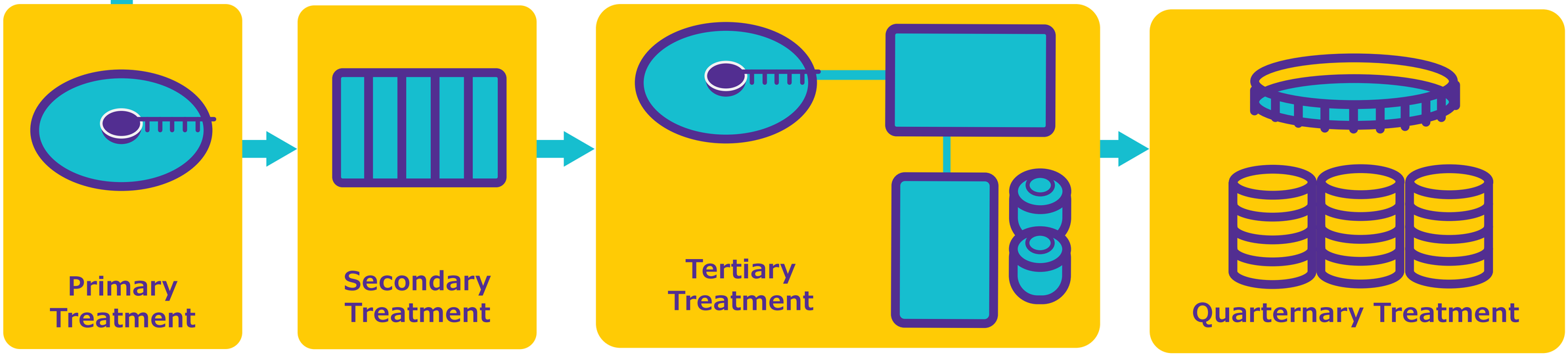
Lab Water Solutions

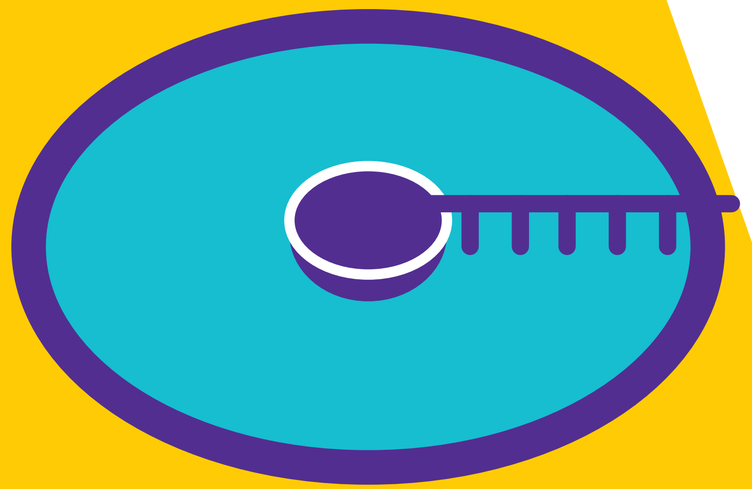
The Milli-Q® portfolio of lab water solutions of Merck takes care of all your water quality and purity needs. Our solutions are backed by consistent quality and full compliance and work seamlessly together to let you focus on your vital work.

Wastewater Treatment Process

Collection Systems







Parameters:

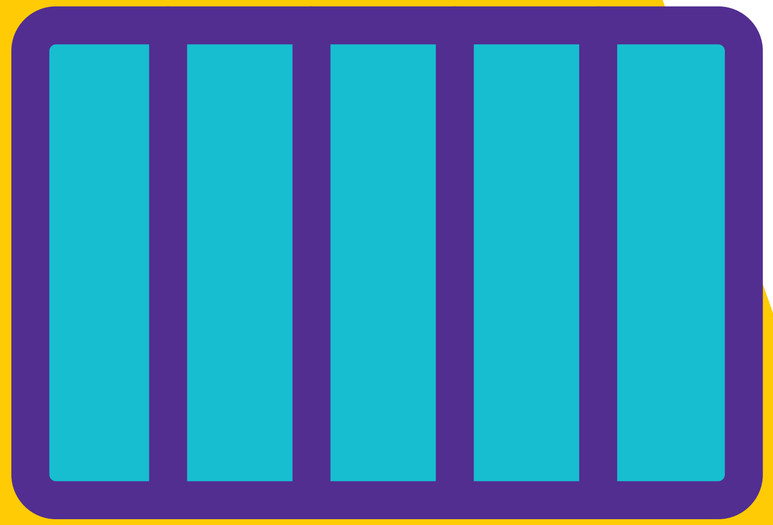
- Ammonium
- BOD
- COD
- Nitrate
- Phosphate
- TOC
- Total Nitrogen

1. PRIMARY TREATMENT

Preliminary and Primary Treatment removes all of the large and settleable solids from the wastewater

The first step in a treatment process is commonly referred to as Pre-Treatment, used to remove large objects such as plastic bags, cell phones, wallets, construction debris, cigarette butts and any other items that would otherwise interfere with the more delicate processing that occur in later phases. Pre-treatment involves the use of large screens and tanks where gravel, grit and sand are given time to settle out of the water stream. These solids are collected and sent to the dump for disposal.

The next phase of wastewater treatment is called Primary Treatment or Primary Clarification. The purpose of this step is to allow as much of the suspended solids / particulates that weren't removed in pre-treatment to settle out of the wastewater for collection. Additionally; fats, oils and grease are allowed to float to the surface where they can be skimmed off. By the time the wastewater leaves this stage, as much as 50% of the contaminants are removed from the water



Parameters:

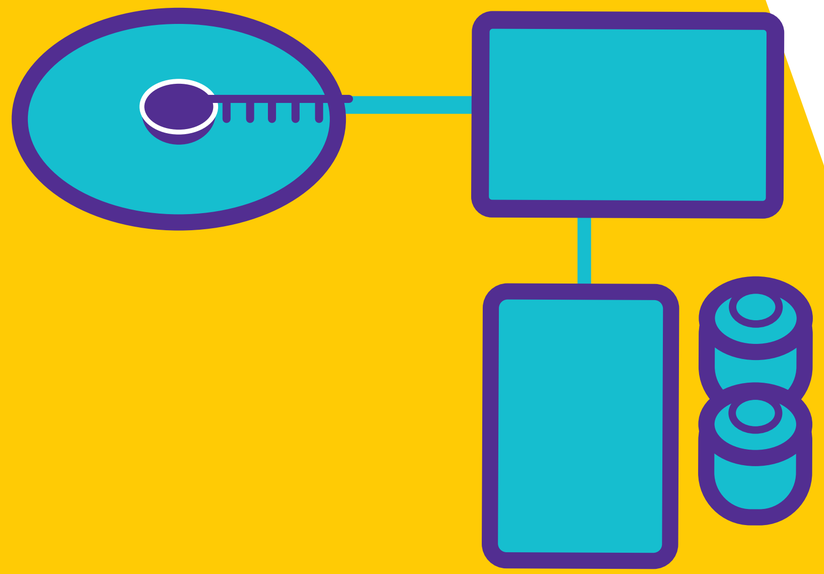
- Acid Capacity
- Ammonium
- BOD
- Chlorine
- COD
- Nitrate
- Nitrite
- Total Nitrogen
- TOC
- Phosphate

2. SECONDARY TREATMENT

Secondary Treatment uses accelerated microbiological growth to remove organic pollutants from the wastewater.

During Secondary Treatment, biological processes are used to accelerate the natural breakdown of contaminants that would occur naturally if the water were directly discharged. These biological processes are accelerated using various methods but typically utilize extensive aeration, some means of growing bacteria more rapidly, and thorough mixing of the wastewater. Because of the accelerated bacterial growth, an additional step is required after the growth phase to remove all the dead bacteria that form. This dead growth can be encouraged to form clumps, or floc, by adding specific chemicals to the water. The floc is then removed and sent to a digestion tank, where it can be broken down further. Depending on the process used, the digestion phase can be used to create natural gas, or a fertilizer that is safe for use in agricultural applications.

Secondary Treatment is monitored by checking such contaminants as: Ammonia, Nitrogen, BOD, COD, Dissolved Oxygen, Nitrate, Phosphate, Metals, and organics. The solids that leave the digester are always tested to ensure they are safe for disposal or land application, and these test results are shared with the appropriate regulatory agency.



Parameters:

- Ammonium
- BOD
- Chlorine
- COD
- Nitrate
- Nitrite
- Phosphate

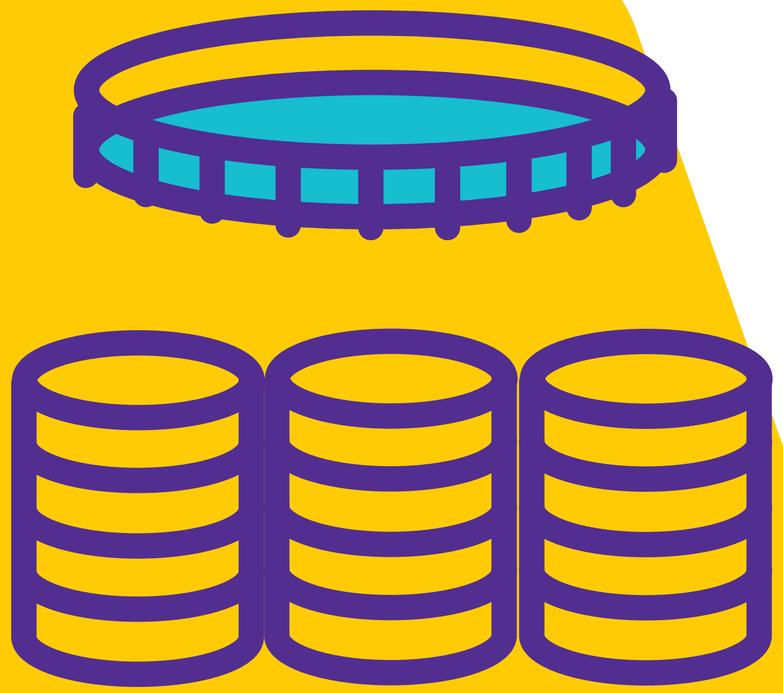
3. TERTIARY TREATMENT

Tertiary Treatment utilizes a combination of chemical and biological processes to reduce the nutrient loading in the wastewater.

Tertiary Treatment is one of the most variable treatment stages that utilizes a combination of mechanical filtration, chemical treatment, and further biological processing. The purpose of Tertiary treatment is to remove nutrients from the water that could potentially upset the ecological balance of the receiving waters.

Most commonly, this stage is monitored for all nitrogen or phosphorous compounds.

The disinfection stage is the last step in the treatment process. Disinfection is intended to kill any remaining pathogens in the water so that the water is safe for human contact once it enters the waterways. Disinfection can be accomplished using chemicals such as Chlorine, Sodium Hypochlorite, Ozone, or Peracetic Acid (PAA), or through exposure to ultraviolet light. In plants where chemical disinfection is used, testing is required to ensure the chemicals used have broken down enough that they will not harm wildlife in the waterways.



Parameters:

- Antibiotic
- Anti-cancer
- Hormones
- Pesticides
- Phosphate

4. QUARTERNARY TREATMENT

Quarternary Treatment is used for the removal of particularly difficult emergent pollutants such as pharmaceutical compounds or other complicated molecules.

The public’s increasing use of hormones, pharmaceuticals, and industrial chemicals is being reflected in increased pollution loads.

Depending on the regulations, some countries are already adding one more step after the disinfection step. In those cases, the waste water will be filtered also by activated charcoal to eliminate antibiotics, pesticides, hormones, and anti-cancer medicines remaining in the water.

Ammonium

					Ordering #			
Range (mg/L)	Citation Form	No. of Tests	Method	Reference	Test Kit	Standard/NIST	Standard/CRM	CombiCheck
0.010 – 2.000	NH_4-N/NH_3-N	25	Indophenol blue	analogous EPA 350.1, APHA 4500-NH_3 F, ISO 7150-1, DIN 38406-5	114739	132227		114695
0.013 – 2.571	NH_4					125022		
0.012 – 2.432	NH_3					125023		
0.010 – 3.00	NH_4-N/NH_3-N	250 500			114752 114752	125022	119812	114695
0.013 – 3.86	NH_4					125023		
0.016 – 3.65	NH_3					125024		
0.20 – 8.00	NH_4-N/NH_3-N	25			114558	125023		114676
0.26 – 10.30	NH_4					125024		
0.24 – 9.73	NH_3					125025		
0.5 – 16.0	NH_4-N/NH_3-N	25			114544	125024		114675
0.6 – 20.6	NH_4					125025		
0.6 – 19.5	NH_3					125026		
2.0 – 150	NH_4-N/NH_3-N	100			100683	125025	59755	114689
2.6 – 193	NH_4					125026		
2.4 – 182	NH_3					125027		
4.0 – 80.0	NH_4-N/NH_3-N	25			114559	125025		114689
5.2 – 103.0	NH_4					125026		
4.9 – 97.3	NH_3					125027		

Applications

Ammonium in effluents with high COD value | Ammonium in sewage sludge | Ammonium in effluents

BOD

						Ordering #		
Parameter	**Range (mg/L)**	**Citation Form**	**No. of Tests**	**Method**	**Reference**	**Test Kit**	**Standard/NIST**	**Standard/CRM**
BOD	0.5 – 3000	BOD	50	mod. Winkler method		100687		
BOD Nutrient Salt Mixture (with allyl thiourea)	-	-	12 L	-	-	100688	100718	BOD1000
BOD (Oxygen) Reaction bottle	-	-	1	-	-	114663		

COD

					Ordering #			
Range (mg/L)	Citation Form	No. of Tests	Method	Reference	Test Kit	Standard/NIST	Standard/CRM	CombiCheck
4.0 – 40.0	COD	25	Oxidation with chromosulfuric acid,determination as chromate	analogous EPA 410.4, APHA 5220 D, ASTM D1252-06B, ISO 15705	114560	125028	COD500	114695
5.0 – 80.0	COD	25			101796	125028		114695
10 – 150	COD	25			114540	125029		114676
15 – 300	COD	25			114895	125030		114696
25 – 1,500	COD	25	Oxidation with chromosulfuric acid, determination as chromium(III)		114541	125031		114675
						125032		114675
50 – 500	COD	25	Oxidation with chromosulfuric acid, determination as chromate		114690	125029		114696
						125030		114696
300 – 3,500	COD	25	Oxidation with chromosulfuric acid, determination as chromium(III)		114691	125033		114738
500 – 10,000	COD	25			114555	125034		114689
5,000 – 90,000	COD	25			101797	125035		
5.0 – 60.0	COD	25	Oxidation with chromosulfuric acid, determination as chromate	chloride depletion method corresponds to DIN 38409-41-2, method corresponds to DIN ISO 15705, analogous EPA 410.4, APHA 5220 D and ASTM D1252-06 B	117058*	125028		-
50 – 3,000	COD	25	Oxidation with chromosulfuric acid,determination as chromium(III)		117059*	125029		
						125032		

* For seawater

Applications

COD in landfill seepage water | COD measurement in waste water (rapid-digestion method)

Nitrate

					Ordering #			
Range (mg/L)	Citation Form	No. of Tests	Method	Reference	Test Kit	Standard/NIST	Standard/CRM	CombiCheck
0.3 – 30.0	NO_3-N	100	Cadmium Reduction	-	101842	125037	119811	-
1.3 – 132.8	NO_3					125038		
0.5 – 18.0	NO_3-N	100	Nitrospectral (with Spectroquant® Move 100 colorimeter)	analogous DIN 38405-9	114773	125037		114675
2.2 – 79.7	NO_3					132241		
0.5 – 25.0	NO_3-N	25	2,6-Dimethylphenol		114563	125037	74246	114675
2.2 – 110.7	NO_3					125038		
1.0 – 50.0	NO_3-N	25			114764	132241		114738
4 – 221	NO_3					125039		
23 – 225	NO_3-N	25			100614	125039		-
102 – 996	NO_3					125040		
0.10 – 3.00	NO_3-N	25	Resorcinol	High content of Chloride levels	114556*	125036		114676
0.4 – 13.3	NO_3					132240		
0.2 – 17.0	NO_3-N	50			114942*	125036		114675
0.9 – 75.3	NO_3					132242		

* High content of chloride level

Applications

Nitrate in effluents

Phosphate

(Ortho-phosphate and total phosphorus)

					Ordering #			
Range (mg/L)	Citation Form	No. of Tests	Method	Reference	Test Kit	Standard/NIST	Standard/CRM	CombiCheck
0.0025 - 5.00	PO_4-P	220/420	Phosphomolybdenum blue	analogous EPA 365.2+3, APHA 4500-P E, DIN EN ISO 6878	114848	125046	119898	-
0.0077 - 15.30	PO_4					125047		114676
0.0057 - 11.46	P_2O_5							-
0.05 – 5.00	PO_4-P	25			114543	125046		114676
0.2 – 15.3	PO_4					125047		
0.11 – 11.46	P_2O_5							
0.5 – 25.0	PO_4-P	25			114729	125047	38364	114675
1.5 – 76.7	PO_4					125048		114738
1.1 – 57.3	P_2O_5							
3.0 – 100.0	PO_4-P	25			100673	125048		-
9 – 307	PO_4					125049		
7 – 229	P_2O_5							

Applications

Phosphate in effluents | Phosphorus (total) in effluents

TOC

					Ordering #	
Range (mg/L)	Citation Form	No. of Tests	Method	Reference	Test Kit	Standard/NIST
5.0 – 80.0	TOC	25	Indicator	Oxidation analogous APHA 5310 D	114878	132248
50 – 800	TOC	25			114879	132253

Total Nitrogen

					Ordering #		
Range (mg/L)	Citation Form	No. of Tests	Method	Reference	Test Kit	Standard/NIST	CombiCheck
0.5 – 15.0	N	25	Koroleff digestion, 2,6-dimethylphenol	digestion analogous DIN EN ISO 11905-1, determination analogous DIN 38405-9	100613	125043	114695
0.5 – 15.0	N	25	Koroleff digestion, nitrospectral with MOVE 100 colorimeters	digestion analogous to DIN EN ISO 11905-1	114537	125044	114695
10 – 150	N	25	Koroleff digestion, 2,6-dimethylphenol	digestion analogous DIN EN ISO 11905-1, determination analogous DIN 38405-9	114763	125045	114689

Applications

Nitrogen (total) in effluents

Acid capacity

Acid capacity to pH 4.3

					Ordering #	
Range	Citation Form	No. of Tests	Method	Reference	Test Kit	Standard/NIST
0.40 - 8.00 mmol/L 20 - 400 mg/L $CaCO_3$	mmol/L $CaCO_3$	120	Indicator	-	101758	Application

Chlorine

					Ordering #
Range (mg/L)	Citation Form	No. of Tests	Method	Reference	Test Kit
0.010 – 6.00	Cl_2	200	DPD	analogous EPA 330.5, APHA 4500-Cl_2 G, DIN EN ISO 7393-2	100598
		1200			100598
0.03 – 6.00	Cl_2	200			100595
0.03 – 6.00	Cl_2	200			100086
0.03 – 6.00	Cl_2	400			100087

Nitrite

					Ordering #		
Range (mg/L)	Citation Form	No. of Tests	Method	Reference	Test Kit	Standard/NIST	Standard/CRM
0.002 – 1.00	NO_2-N	335	Griess' reaction	analogous EPA 354.1, APHA 4500-NO_2 - B, DIN EN 26777	114776	133021	119899
0.007 – 3.28	NO_2	1000			114776	125041	
0.010 – 0.700	NO_2-N	25			114547	133021	
0.03 – 2.30	NO_2					125041	67276

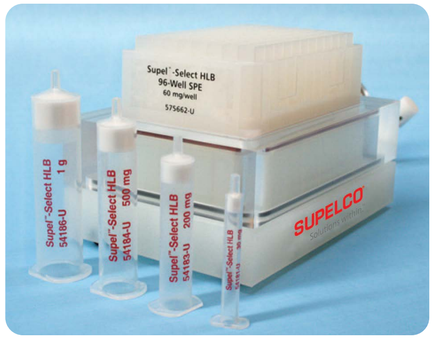
Applications

Nitrite in effluents

Antibiotics

Products for Sample Preparation

Description	Product #
Supel™-Select HLB SPE Tube, bed wt. 30 mg, volume 1 mL, pk of 100,	54181-U
Supel™-Select HLB SPE Tube, bed wt. 60 mg, volume 3 mL, pk of 50,	54182-U
Supel™-Select HLB SPE Tube, bed wt. 200 mg, volume 6 mL, pk of 30,	54183-U
Supel™-Select HLB SPE Tube, bed wt. 500 mg, volume 12 mL, pk of 20,	54184-U
Supel™-Select HLB SPE Tube, bed wt. 1 g, volume 20 mL, pk of 20,	54186-U



Products for Result Interpretation

Product	Quality grade	Pck	Class	Standard Ordering #
Enrofloxacin	VETRANAL™, analytical standard	100 mg	Fluoroquinolones	33699
Enrofloxacin-d_5 hydrochloride	VETRANAL™, analytical standard	10 mg	Fluoroquinolones	32983
Oxytetracycline hydrochloride	VETRANAL™, analytical standard	250 mg	Tetracycline	46598
Tylosin tartrate	VETRANAL™, analytical standard	250 mg	Macrolide	33847
Tylosin phosphate	VETRANAL™, analytical standard	100 mg	Macrolide	46981
Ampicillin	analytical standard	100 mg	Penicillins	59349
Ampicillin trihydrate	VETRANAL™, analytical standard	250 mg	Penicillins	31591
Ciprofloxacin	VETRANAL™, analytical standard	100 mg	Fluoroquinolones	33434
Ciprofloxacin-d_8 hydrochloride hydrate	VETRANAL™, analytical standard	10 mg	Fluoroquinolones	32982
Doxycline hyclate	VETRANAL™, analytical standard	100 mg	Tetracycline	33429
Tetracycline hydrochloride	VETRANAL™, analytical standard	250 mg	Tetracycline	31741
Sulfamethoxazole	VETRANAL™, analytical standard	250 mg	Sulfonamides	31737
Sulfamethoxazole	*Trace*CERT®, certified reference material	100 mg	Sulfonamides	76177
Penicillin G potassium salt	VETRANAL™, analytical standard	250 mg	Penicillins	46609
Sulfamethizole	VETRANAL™, analytical standard	250 mg	Sulfonamides	46842
Sulfamethizole-(phenyl-$^{13}C_6$)	VETRANAL™, analytical standard	10 mg	Sulfonamides	35384
Cefuroxime	VETRANAL™, analytical standard	100 mg	Cephalosporins	34218

Anti-Cancer

Product	Quality Grade	Pck	Standard Ordering #
Methotrexate-d_3 solution, 100 mg/mL in MeOH with 0.1 N NaOH	Cerilliant®, certified reference material	ampule of 1 mL	M-153
Methotrexate- solution, 1.0 mg/mL in MeOH with 0.1 N NaOH	Cerilliant®, certified reference material	ampule of 1 mL	M-136
Methotrexate	Pharmaceutical Secondary Standard, certified reference material	1 g	PHR1396
Azathioprine	Pharmaceutical Secondary Standard, certified reference material	1 g	PHR1282
Doxorubicin hydrochloride	Pharmaceutical Secondary Standard, certified reference material	1 g	PHR1789
Vincristine sulfate	European Pharmacopoeia (EP) Reference Standard	4.96 mg	V0400000
Vincristine sulfate	United States Pharmacopoeia (USP) Reference Standard	50 mg	1714007
Ifosfamide	analytical standard	100 mg	53358
Ifosfamide	British Pharmacopoeia (BP) Reference Standard	100 mg	BP759
Ifosfamide	European Pharmacopoeia (EP) Reference Standard	50 mg	I0060000
Ifosfamide	United States Pharmacopoeia (USP) Reference Standard	500 mg	1336205
Cyclophosphamide	British Pharmacopoeia (BP) Reference Standard	100 mg	BP1094
Cyclophosphamide	European Pharmacopoeia (EP) Reference Standard	50 mg	C32500000
Cyclophosphamide	Pharmaceutical Secondary Standard, certified reference material	1 g	PHR1404
Cyclophosphamide	analytical standard	100 mg	93813
Etoposide	British Pharmacopoeia (BP) Reference Standard	150 mg	BP885
Etoposide	European Pharmacopoeia (EP) Reference Standard	150 mg	E2600000
Etoposide	United States Pharmacopoeia (USP) Reference Standard	300 mg	1268808
Etoposide for system suitability	European Pharmacopoeia (EP) Reference Standard	10 mg	Y0001365
Procarbazine	United States Pharmacopoeia (USP) Reference Standard	200 mg	1565009

Hormones

Products for Sample Preparation: Supelclean™ ENVI Carb SPE products

Description	Product #
Supelclean™ ENVI-Carb™ C SPE Tube bed wt. 1 g, volume 12 mL, pk of 20	57149
Supelclean™ ENVI-Carb™ SPE Bulk Packing pkg of 50 g	57210-U
Supelclean™ ENVI-Carb™ SPE Tube bed wt. 100 mg, volume 1 mL, pk of 108	57109-U
Supelclean™ ENVI-Carb™ SPE Tube bed wt. 250 mg, volume 3 mL, pk of 54	57088
Supelclean™ ENVI-Carb™ SPE Tube bed wt. 250 mg, volume 6 mL, pk of 30	57092
Supelclean™ ENVI-Carb™ SPE Tube bed wt. 500 mg, volume 6 mL, pk of 30	57094
Supelclean™ ENVI-Carb™ SPE Tube bed wt. 1 g, volume 12 mL, pk of 20	57127-U
Supelclean™ ENVI-Carb™ SPE Tube bed wt. 2 g, volume 12 mL, pk of 20	57128
Supelclean™ ENVI-Carb™ SPE Tube bed wt. 10 g, volume 60 mL, pk of 16	57130

Products for Result Interpretation

Product	Quality grade	Pck	EPA Method	Standard Ordering #
16α-Hydroxyestradiol (Estriol)	VETRANAL™, analytical standard	100 mg	539	46565
17β-Estradiol solution	Cerilliant®, certified reference material	1 mg/mL in acetonitrile, ampule of 1mL	539	E-060
17β-Estradiol-2,3,4-$^{13}C_3$ solution	Cerilliant®, certified reference material	100 mg/mL in acetonitrile, ampule of 1mL		E-073
17β-Estradiol-2,3,4-$^{13}C_3$ solution	Cerilliant®, certified reference material	10 mg/mL in acetonitrile, ampule of 1mL		E-117
17α-Ethynylestradiol solution	Cerilliant®, certified reference material	1.0 mg/mL in methanol, ampule of 1mL	539	E-076
Estrone	VETRANAL™, analytical standard	250 mg	539	46573
Estrone solution	Cerilliant®, certified reference material	1.0 mg/mL in methanol, ampule of 1mL	539	E-075
Estrone-2,3,4-$^{13}C_3$ solution	Cerilliant®, certified reference material	100 mg/mL in methanol, ampule of 1mL		E-108
Estrone-2,3,4-$^{13}C_3$ solution	Cerilliant®, certified reference material	10 mg/mL in methanol, ampule of 1mL		E-118
Testosterone	VETRANAL™, analytical standard	250mg	539	46923
Testosterone solution	Cerilliant®, certified reference material	1.0 mg/mL in acetonitrile, ampule of 1mL	539	T-037
Testosterone-2,3,4-$^{13}C_3$ solution	Cerilliant®, certified reference material	100 mg/mL in acetonitrile, ampule of 1mL		T-070
Testosterone-2,3,4-$^{13}C_3$ solution	Cerilliant®, certified reference material	10 mg/mL in acetonitrile, ampule of 1mL		T-095
4-Androstene-3,17-dione	VETRANAL™, analytical standard	250mg		46033
Equilin	VETRANAL™, analytical standard	50 mg		46247

Pesticides

Products for Sample Preparation: Supelclean™ ENVI-18 & ENVI-8 SPE Disks

Description	Product #
ENVI™-8 DSK SPE Disk diam. 47 mm, pk of 24	57172
ENVI™-18 DSK SPE Disk diam. 90 mm, pk of 12	57170-U
ENVI™-18 DSK SPE Disk diam. 47 mm, pk of 24	57171

Products for Result Interpretation

Product	Standard/ CRM	Quality Grade	Pck	Ordering #
MCPA	herbicide	PESTANAL®, analytical standard	250 mg	45555
MCPA sodium salt monohydrate	herbicide		250 mg	45746
MCPA solution	herbicide		100 ng/mL in acetonitrile, 2 mL	45873
MCPA-2-ethylhexyl ester	metabolite		100 mg	33394
MCPA methyl ester	metabolite		100 mg	36144
MCPA-(*methyl*-d_3)	herbicide	analytical standard	10 mg	68405
2,4-D	herbicide	PESTANAL®, analytical standard	250 mg	31518
2,4-D	herbicide	*Trace*CERT®, certified reference material	100 mg	76514
2,4-D solution	herbicide	certified reference material	5000 mg/mL in acetonitrile, ampule of 1 mL	40330
2,4-D 1-butyl ester	metabolite	analytical standard	250 mg	45732
2,4-D methyl ester	metabolite	PESTANAL®, analytical standard	100 mg	45416
2,4-D butylglycol ester	metabolite		250 mg	31057
Mecoprop	herbicide		100 mg	36147
Mecoprop-(4-*chloro*-2-*methylphenoxy*-d_6)	herbicide		10 mg	34505
Mecoprop-P	herbicide, metabolite		250 mg	36773
Mecoprop methyl ester	metabolite		100 mg	36148
Mecoprop-2-octyl ester	metabolite		100 mg	37871
Acid Herbicide Mix	herbicide	analytical standard, 12 acid pesticides in variable concentrations in methanol	ampule of 1 mL	46861-U
Clopyralid	herbicide	PESTANAL®, analytical standard	250 mg	36758
Clopryalid (2-hydroxyethyl) ammonium	herbicide, metabolite		250 mg	36529

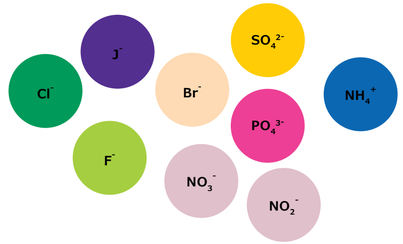
Primary Treatment | Secondary Treatment | Tertiary Treatment | Quarternary Treatment | Key Tools

SPECTROPHOTOMETER

THERMOREACTORS

COLORIMETERS & TURBIDIMETERS

GC COLUMNS & ACCESSORIES

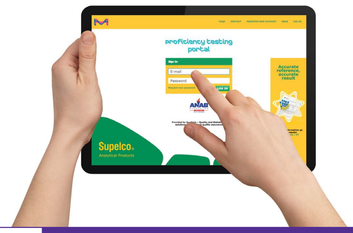


ION CHROMATOGRAPHY

LAB WATER SYSTEMS

FILTRATION SOLUTIONS

LAB BASICS



PROFICIENCY TESTING

PHOTOMETRY PRODUCTS

PHOTOMETRY PRODUCTS

Accurate. Precise. Consistent.

Spectroquant® Prove

As your trusted analytical chemistry partner, our goal was to build the perfect tool for water analysis, one that unites the simplicity you want with the confidence you need, and the durability you expect. Spectroquant® Prove delivers all this and more.

Its intuitive design and our popular Spectroquant® test kits make analysis smoother than ever and support you throughout your workflow.

Spectroquant® Prove 100

173016

For routine applications The Prove 100 is the best choice for those who primarily use our broad range of Spectroquant® test kits, or only perform Vis measurements. High quality and great value for your daily analyses.

Spectroquant® Prove 300

173017

For sensitive measurements Thanks to its long-lasting xenon lamp, the Prove 300 is ideal for more intensive use. What's more, it is capable of both UV and Vis measurements, so you have greater flexibility for more intricate analyses.

Spectroquant® Prove 600

173018

For complex analyses Designed with high-end UV/Vis optics, and cuvettes of up to 100 mm, the Prove 600 packs great power into a compact size. Excellent resolution and sensitivity for complex kinetics or spectral measurements, or for use with test kits.

THERMOREACTORS

THERMOREACTORS

Thermoreactor 171200

12 holes, 7 preinstalled programmes: 148 °C (20, 120 min), 150 °C (120 min), 120 °C (30, 60, 120 min), 100 °C (60 min) TR 320 Spectroquant®

The Spectroquant® Thermoreactor TR 320 is designed for the digestion up to 12 samples simultaneously. Precisely controlled thermal digestion is a key sample preparation step during the determination of COD, TOC, total contents of cadmium, chromium, cyanide, iron, lead, nickel, nitrogen, phosphorus, silver, or zinc using our high quality Spectroquant® Test Kits.

Thermoreactor 171201

24 holes, 7 preinstalled programmes and 8 freely selectable programmes TR 420 Spectroquant®

The Spectroquant® Thermoreactor TR 420 is designed for the digestion up to 24 samples simultaneously. Precisely controlled thermal digestion is a key sample preparation step during the determination of COD, TOC, total contents of cadmium, chromium, cyanide, iron, lead, nickel, nitrogen, phosphorus, silver, or zinc using our high quality Spectroquant® Test Kits.

Thermoreactor 171202

2 x 12 holes in 2 heating zones, temperature and time separately controllable for each zone, 7 preinstalled programmes and 8 freely selectable programmes TR 620 Spectroquant®

The Spectroquant® Thermoreactor TR 620 is designed for the digestion up to 24 samples simultaneously. Precisely controlled thermal digestion is a key sample preparation step during the determination of COD, TOC, total contents of cadmium, chromium, cyanide, iron, lead, nickel, nitrogen, phosphorus, silver, or zinc using our high quality Spectroquant® Test Kits.

The Spectroquant® Thermoreactor TR 620 features two separate heating blocks, which can be individually controlled. Thereby, the Thermoreactor TR 620 enables users to set up and perform two different digestion programs at the same time – enhancing flexibility and reducing waiting times.

COLORIMETERS & TURBIDIMETERS

COLORIMETERS

Spectroquant® Move 100 colorimeter

173632

Accuracy on the go. Our portable, dust-tight and waterproofed colorimeters are made for reliable on-site analysis. Our Spectroquant® Move 100 instrument performs over 100 pre-programmed methods for water analysis.

TURBIDIMETERS

Turbiquant® 1100 IR

118324

Infrared (IR) measurements at 860nm show no interference in colored solutions, and are required in Europe by ISO 7027 of DIN EN 27027.

Turbiquant® 1100 T

118325

Tungsten (T) lams emitting white light are more sensitive when measuring small particles, and are required by USEPA 180.1, APHA, AWWA and WPCF.

Turbiquant® 1100 IR / 1100 T Calibration Standard Set

118335

Precise, stable, non-toxic and ready to use

3 standards 0.02 – 10.0 – 1,00 NTU

GC COLUMNS & ACCESSORIES

GAS CHROMATOGRAPHY COLUMNS

Capillary Columns for Environmental Testing:

- Volatiles
- Semivolatiles
- Pesticides
- PCBs
- PBDEs
- Herbicides
- PAHs
- Dioxins
- Fuels
- Odor compounds

GC ACCESSORIES

GC Accessories Plus Gas Purification & Management Products

GC Accessories

Liners

- Inlet liners for Agilent®, ATAS, PerkinElmer®, Shimadzu™, Thermo Fisher Scientific, Varian® and more

Septa

- Low bleed, thermally stable, and easy to puncture septa including Molded Thermogreen® LB-2 and Non Thermogreen® Septa

General Accessories

- Vials, syringes, fittings, flow measurement and more

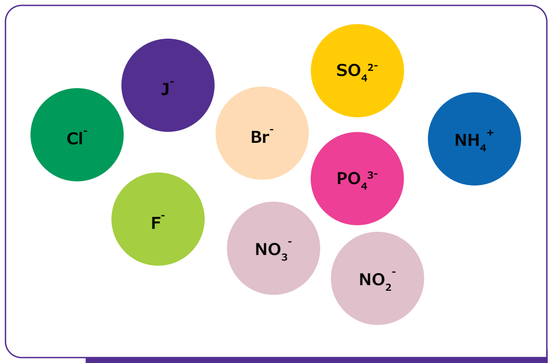
Gas Purification and Management Products

Purifiers

- Contains products used to achieve the required purity level by removing specific contaminants from a gas stream based on its intended use.

Plumbing Regulation

- Contains products used to transport gases from the source (gas cylinder or gas generator) to the point of use. This group includes tubing, fittings, and valves, plus products for pressure regulation and measurement, flow regulation and measurement, and leak detection



ION CHROMATOGRAPHY

ION CHROMATOGRAPHY TESTING

Find our comprehensive portfolio of more than 70 *Trace*CERT® certified reference material solutions and more than 40 different reagents and eluents for ion chromatography. The certified reference material solutions are all manufactured nuder ISO/IEC 17025 and ISO 17034 accreditation.

Some example products are listed below

CRM solutions (examples)

Product	Quality grade	Pck	Ordering #
Bromide Standard for IC	*Trace*CERT®, certified reference material	100 mL	43147
Chloride Standard for IC	*Trace*CERT®, certified reference material	100 mL	39883
Fluoride Standard for IC	*Trace*CERT®, certified reference material	100 mL	77365
Iodide Standard for IC	*Trace*CERT®, certified reference material	100 mL	41271
Nitrate Standard for IC	*Trace*CERT®, certified reference material	100 mL	74246
Nitrite Standard for IC	*Trace*CERT®, certified reference material	100 mL	67276
Phosphate Standard for IC	*Trace*CERT®, certified reference material	100 mL	38364
Sulfate Standard for IC	*Trace*CERT®, certified reference material	100 mL	90071
Ammonium Standard for IC	*Trace*CERT®, certified reference material	100 mL	59755

Reagents and Concentrates (examples)

Product Name	Concentration, Pack Size	Composition	Ordering #
Nitric acid concentrate	100 mM / 1 L	HNO_3 in water	16355
Oxalic acid concentrate	100 mM / 1 L	HOOCCOOH in water	68487
Perchloric acid concentrate	10 mM / 1 L	$HClO_4$ in water	50439
Potassium hydroxide concentrate	100 mM / 1 L	KOH in water	61699
Sodium bicarbonate concentrate	100 mM / 1 L	$NaHCO_3$ in water	36486
Sodium carbonate concentrate1	72 mM / 1 L, 2.5 L	Na_2CO_3 in water, A Supp 7	72784
Sodium carbonate concentrate	100 mM / 1 L	Na_2CO_3 in water	56169
Sodium hydroxide concentrate	100 mM / 1 L	NaOH in water	43617
Sodium hydroxide solution	50-52%, / 500 mL	NaOH in water	72064
Sulfuric acid concentrate	100 mM / 1 L	H_2SO in water	68279
Water for Ion Chromatography	2.5 L, 5 L		00612

MILLI-Q® LAB WATER SYSTEMS

LAB WATER SYSTEMS

Milli-Q® Lab Water Solutions for All Your Water Purity Needs

We appreciate that ensuring accurate and reproducible results is a priority for your success. That's why we design best-in-class water purification systems that deliver the quality you need at the touch of your finger. Our promise is to take care of your lab water, so that you can focus on your critical analyses.

Because you need…

- Consistently pure water for your **wet chemistry tests** of primary, secondary and tertiary treatment parameters.
- Exceptional-quality ultrapure water for your most sensitive analyses, such as assessing organic contaminants by **HPLC or GC**.
- Ultrapure water tailored to your specific applications, such as water for the analysis of **volatile organic compounds and endocrine disruptors**

… the Milli-Q® IQ 7003/05/10/15 Ultrapure & Pure Water System can cover all your needs

Convenient access to pure and ultrapure water – This compact system delivers both types of water directly from tap water. Easy-to-use dispensers give convenient access to purified water, even on distant benches.

Reliable purification, low running costs and minimal maintenance – The system produces constant-quality pure and ultrapure water with reduced water consumption and maintenance.

Reduced environmental impact – A completely mercury-free tap-to-ultrapure water system thanks to patented ech$_2$o® UV lamps for both photo-oxidation of organic contaminants and bacteria control.

The right water quality for all your experiments – Our range of Application-Paks provide targeted removal of contaminants at the point of dispense. These include the VOC-Pak® Polisher for water free of volatile organics, the EDS-Pak® Polisher for water free of endocrine disruptors, and the LC-Pak® Polisher for LC-MS grade water.

FILTRATION SOLUTIONS

FILTRATION SOLUTIONS

With over 50 years of filtration expertise, Merck sets the industry standard for high-performance membrane technology for sample preparation. Whether you need to collect, separate, or remove contaminants from samples prior to downstream analysis, our broad selection of syringe filters, membranes, filter holders and related filtration devices ensures that we have the right solution for your application.

Filtration Products

Vacuum Filtration Glassware, Membranes & Syringe Tip Filters

Discover our newly rebranded vacuum filtration glassware for use with our high quality membrane filters.

Glassware Features

- White writable surface and catalog numbers
- New alignment guide to aid in setup
- Coated stoppers allow easy removal
- Removable plastic hose port for easy vacuum disconnection

Membrane Box Features

- Easy open and snap closure
- Item number and lot traceability on every box
- Notched openings for enhanced access to membranes
- Sustainable polypropylene construction for improved cleanliness and recyclability

Millex® Syringe Tip Filters

- PTFE hydrophilic filters
- PTFE hydrophobic filters
- Mixed cellulose esters filters
- Durapore® PVDF filters
- PES filters
- Nylon filters

Filter Discs for Water Monitoring

- Glass and Quartz fiber filters
- Mixed cellulose esters filters
- Monitor refills and gravimetric analysis filters

LAB BASICS

LAB BASICS

Solvents

- ACS and reagent grade
- GC
- HPLC/UHPLC
- Spectroscopy

Organic Acids

- Acetic
- Aminomethanesulfonic

Inorganic Reagents

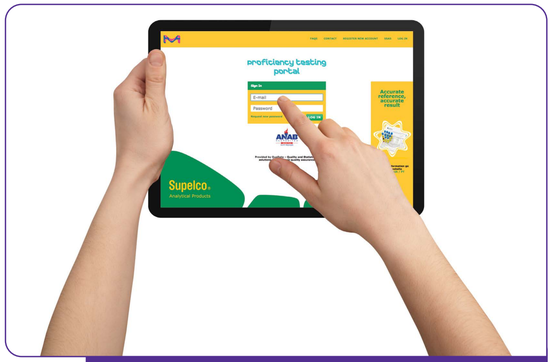
- ACS grade
- Reagent grade
- Redi-Dri™ free flowing salts

Acids/Bases

- ACS grade
- Reagent grade
- Suprapur® acids and bases
- Ultrapur acids

Rapid Testing

- Test strips
- pH indicator tests
- StripScan App
- Colorimetric & titrimetric tests
- RQflex® 20 reflectometer



PROFICIENCY TESTING

PROFICIENCY TESTING

A New Critical Tool for Assessing Performance

A new Proficiency Testing (PT) portal is available. It has been streamlined and will offer superior speed, ease of use, and data handling. We have been committed to updating and providing a user interface that is efficient, simple, and meets the evolving needs of the end user.

Data tracking and analysis using MyTrends and MyStats

All study data that was previously entered into the former PT portal has been transferred over to the new system. If you are a new user to the updated portal, you also have the ability to import your historical data in order to perform data trending regardless of your previous PT provider. The addition of graphs to reports also provides a new enhancement for all data processing needs.

Some of the features of the new PT portal:

- One-click design that is easy to navigate, even for first time users
- All open studies prominently displayed on the home screen
- Easily add new personnel/analysts to your lab
- Add accreditors and enter data all on a single page
- Easily copy down method/analyst/analysis date to all analytes in a sample
- Data is actively saved as you report
- A confirmation screen that shows exactly what you have entered and will be submitted for evaluation
- Methods saved as default along with the option to add in-house methods
- Calendar which will have open and close dates for studies in which customers are enrolled
- Automated email reminders sent to customers 7 days before study closes
- Option to send results to a third party (i.e., Corporate QA Manager)
- Accreditors will be able to log in and download results at any time
- Expand/collapse items on the data entry page for quick loading times
- Import data in one click using an EDD file

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

32374 07/2019

For further information, please contact your local VWR organization or have a look at the VWR webpages:
vwr.com