

Application Data Sheets

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Parameter	Matrix		Range	Method	Analyzer	nbr	Date:
						130	
Acetic, Nitric & Phosphoric Acid	<i>Blended acid in etching bath</i>	H3PO4	70 - 75 % w/w	Titration - Acid/base	2040	1212	03-Dec-03
		CH3COOH	7 - 11 % w/w	Titration - Acid/base			
		HNO3	1.5 - 2.5 % w/w	Titration - Acid/base			
Acid Free & Total, Nitrite & Zinc	<i>Phosphatizing bath.</i>	Acid, Free	0.01 - 0.1 mol/l	Titration - Acid/base	2040	1671	06-Sep-05
		Acid, Total	0.01 - 0.1 mol/l	Titration - Acid/base			
		NO2-	20 - 200 mg/l	Titration - Redox			
		Zn2+	0.3 - 6 g/l	Titration - Complexometric			
Acidity, Carbonate & hydroxide	<i>NaCl or KCl Brine.</i>	HCl	15 - 140 mg/l	Titration - Acid/base	2040	1665	18-Jan-05
		(CO3)2-	24 - 240 mg/l	Titration - Acid/base			
		OH-	5 - 60 mg/l	Titration - Acid/base			
Alkali, Carbonate, Hydroxide & Sulfide	<i>White, green and black liquors</i>	Alkali (active, eff	0.1 - 8 mol/l	Titration - Acid/base	2040	1300	18-Feb-04
		(CO3)2-	0.1 - 3 mol/l	Titration - Acid/base			
		OH-	0.1 - 6 mol/l	Titration - Acid/base			
		S2-	0.1 - 3 mol/l	Titration - Acid/base			
Aluminium	<i>Drinking water, Industrial waste water and Surface water.</i>	Al3+	0 - 1 mg/l	Colorimetry - VIS	2019 HD 2040	1265	21-Apr-06
Aluminium	<i>Drinking water, Industrial waste water and Surface water.</i>	Al3+	0 - 100 ug/l	Colorimetry - VIS	2040	1270	06-Sep-05
Aluminium	<i>Drinking water, Industrial waste water and Surface water.</i>	Al3+	0 - 200 ug/l	Colorimetry - VIS	2019 HD 2040	1271	27-Jun-05
Aluminium	<i>Drinking water, Industrial waste water and Surface water.</i>	Al3+	0 - 1 mg/l	Colorimetry - VIS	2004 Alert	1255	20-Apr-06
Ammonia	<i>Boiler feed, Cooling water, Drinking water and Surface water.</i>	NH3	0 - 3 mg/l	Colorimetry - VIS	2019 HD 2040	1296	27-Jun-05
Ammonia	<i>Boiler feed, Cooling water, Drinking water and Surface water.</i>	NH3	0 - 3 mg/l	Colorimetry - VIS	2004 Alert	1314	27-Jun-05
Ammonia	<i>Boiler feed, Cooling water, Drinking water and Surface water.</i>	NH3	0 - 1 mg/l	Colorimetry - VIS	2004 Alert	1312	27-Jun-05
Ammonia	<i>Boiler feed, Cooling water, Drinking water and Surface water.</i>	NH3	0 - 1 mg/l	Colorimetry - VIS	2019 HD 2040	878	27-Jun-05
Ammonia	<i>Drinking water, Industrial waste water, Municipal waste water and Surface water.</i>	NH3	0 - 100 mg/l	Standard addition ISE	2018 HD 2040	558	03-Jul-07
Ammonia	<i>Drinking water, Industrial waste water, Municipal waste water and Surface water.</i>	NH3	0 - 100 mg/l	Standard addition ISE	2003 Alert	1308	27-Jun-05

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Boric acid	Cooling water and Industrial waste water.	H3BO3	10 - 300 mg/l	Titration - Acid/base	2016 2040	886	14-Apr-04
Boric acid, Chloride & Nickel	Galvanic nickel bath.	H3BO3	0.5 - 50 g/l	Titration - Acid/base	2040	549	18-Jan-05
		Cl-	0.14 - 14 g/l	Titration - Argentometric			
		Ni2+	1 - 100 g/l	Titration - Complexometric			
Bromine Index	Hydrocarbons	Bromine Index	000 mg bromine	Bivoltametric titration	2040	1470	21-Aug-06
Calcium	Boiler feed, Cooling water, Drinking water, Industrial waste water and Surface water.	Ca2+	0 - 150 mg/l	Standard addition ISE	2003 Alert	1307	27-Jun-05
Calcium	Boiler feed, Cooling water, Drinking water, Industrial waste water and Surface water.	Ca2+	0 - 150 mg/l	Standard addition ISE	2018 HD 2040	914	23-Aug-05
Calcium & Magnesium	Brine solution.	Calcium	0 - 100 ug/l	Colorimetry - VIS	2019 Special 2040	1319	27-Jun-05
Chemical Oxygen Demand	Industrial waste water, Municipal waste water and Surface water.	COD	50 - 1000 mg/l	Titration - Redox	2040	966	06-Sep-05
Chemical Oxygen Demand	Industrial waste water, Municipal waste water and Surface water.	COD	0 - 20000 mg/l	Colorimetry - VIS	2019 Special 2040	1767	16-Jun-06
Chemical Oxygen Demand	Industrial waste water, Municipal waste water and Surface water.	COD	0 - 5000 mg/l	Colorimetry - VIS	2019 Special 2040	1766	16-Jun-06
Chloride	Sodiumhydroxide (50%)	Cl-	10 - 500 mg/l	Titration - Argentometric	2040	1170	06-Sep-05
Chloride	Boiler feed, Cooling water, Drinking water, Industrial waste water and Surface water.	Cl-	0 - 60 mg/l	Standard addition ISE	2018 HD 2040	1169	23-Aug-05
Chloride	Boiler feed, Cooling water, Drinking water, Industrial waste water and Surface water.	Cl-	0 - 1500 mg/l	Standard addition ISE	2003 Alert	1309	27-Jun-05
Chloride & Iron(II)	Etching bath.	Cl- Fe(II)	0.1 - 3.5 g/l 1 - 60 g/l	Titration - Argentometric Titration - Redox	2040	969	18-Jan-05
Chlorine	Boiler feed, Cooling water, Drinking water, Industrial waste water, Municipal waste water and Surface water.	Cl2	20 - 600 mg/l	Titration - Iodometric	2016 2040	1199	29-Sep-04
Chlorine, Free	Boiler feed, Cooling water, Drinking water, Industrial waste water, Municipal waste water and Surface water.	Cl2	0 - 3 mg/l	Colorimetry - VIS	2004 Alert	1687	21-Apr-06
Chlorine, Free	Boiler feed, Cooling water, Drinking water, Industrial waste water, Municipal waste water and Surface water.	Cl2	0 - 3 mg/l	Colorimetry - VIS	2019 HD 2040	1686	27-Jun-05

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Chlorine, Total	Boiler feed, Cooling water, Drinking water, Industrial waste water, Municipal waste water and Surface water.	Cl ₂ 0 - 2.5 mg/l	Colorimetry - VIS	2019 HD 2040	1252	27-Jun-05
Chlorine, Total	Boiler feed, Cooling water, Drinking water, Industrial waste water, Municipal waste water and Surface water.	Cl ₂ 0 - 2.5 mg/l	Colorimetry - VIS	2004 Alert	1264	27-Jun-05
Chromium(VI)	Industrial waste water and Surface water.	Cr ₆₊ 0 - 1 mg/l	Colorimetry - VIS	2019 HD 2040	1260	21-Apr-06
Chromium(VI)	Industrial waste water and Surface water.	Cr ₆₊ 0 - 1 mg/l	Colorimetry - VIS	2004 Alert	1266	21-Apr-06
Cobalt	Zinc production + waste water	Co 0 - 10 mg/l	Colorimetry - VIS	2040	416	14-Dec-07
Copper(I) & Copper(II)	Boiler feed, Cooling water, Drinking water and Industrial waste water.	Cu ⁺ & Cu ²⁺ 0 - 5 mg/l	Colorimetry - VIS	2004 Alert	1500	27-Jun-05
Copper(I) & Copper(II)	Boiler feed, Cooling water, Drinking water and Industrial waste water.	Cu ⁺ & Cu ²⁺ 0 - 5 mg/l	Colorimetry - VIS	2019 HD 2040	1657	27-Jun-05
Copper, free EDTA, Formaldehyde & OH-	Electroless copper bath.	Cu ²⁺ 0.3 - 6 g/l EDTA 2 - 25 g/l Formaldehyde 2 - 20 g/l	Titration - Iodometric Titration - Complexometric Titration - Acid/base	2040	1569	18-Jan-05
Cyanide	Industrial waste water and Surface water.	CN ⁻ 2 - 50 mg/l	Titration - Argentometric	2016 2040	1178	24-Aug-06
Cyanide	Industrial waste water and Surface water.	CN ⁻ 0 - 3 mg/l CN	Standard addition ISE	2018 HD 2040	1174	23-Aug-05
Cyanide, Free	Drinking water, Industrial waste water, Municipal waste water and Surface water.	CN ⁻ 0 - 200 ug/l	Colorimetry - VIS	2019 HD 2040	1724	27-Jun-05
Cyanide, Free	Drinking water, Industrial waste water, Municipal waste water and Surface water.	CN ⁻ 0 - 200 ug/l	Colorimetry - VIS	2004 Alert	1504	27-Jun-05
Fluoride	Drinking water, Industrial waste water and Surface water.	F ⁻ 0 - 10 mg/l	Standard addition ISE	2003 Alert	1297	27-Jun-05
Fluoride	Drinking water, Industrial waste water and Surface water.	F ⁻ 0 - 10 mg/l	Standard addition ISE	2018 HD 2040	751	23-Aug-05
Glucose	Sugar water	Glucose 0.006 - 3 g/l	Colorimetry - VIS	2019 HD 2040	1318	27-Jun-05
Glycerol	Glycerin production, Hydrolysis of Fats	Glycerol 0 - 4 % (w/w)	Titration - Redox	2040	972	06-Sep-05
Hardness, Calcium & Magnesium	Drinking water, Industrial waste water and Surface water.	Ca ²⁺ 8 - 200 mg/l	Titration - Complexometric	2016 2040	1275	03-Apr-07
Hydrazine	Boiler feed, Cooling water and Power Utility	N ₂ H ₄ 0 - 500 ug/l	Colorimetry - VIS	2004 Alert	1501	27-Jun-05

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Hydrochloric acid	Etching bath, Pickling bath, Waste water	HCl	0.2 - 7 g/l	Titration - Acid/base	2016 2040	1050	03-Feb-04
Hydrochloric acid, Iron(II) & Iron(III)	Etching bath.	Fe2+	10 - 200 g/l	Titration - Redox	2040	739	26-May-04
		Fe3+	1 - 20 g/l	Titration - Complexometric			
		HCl	15 - 250 g/l	Titration - Acid/base			
Hydrofluoric acid	Semicon etching bath.	HF	0 - 15 g/l	Titration - Acid/base	2040	1674	16-Feb-05
Hydrofluoric acid, Iron(III) & Nitric acid	Pickling bath.	HF	5 - 100 g/l	Standard addition ISE	2040	1670	03-Feb-05
		Fe(III)	5 - 130 g/l	Titration - Complexometric			
		HNO3	10 - 250 g/l	Titration - Acid/base			
Hydrogenperoxide & Sulfuric acid	Pickling bath.	H2O2	0.1 - 2.5 mol/l	Titration - Redox	2040	400	16-Feb-05
		H2SO4	0.1 - 2.5 mol/l	Titration - Acid/base			
Hydroxide	Calcium "milk" (Ca(OH)2)	OH-	0.9 - 17 g/l	Titration - Acid/base	2016 2040	426	18-Jan-05
Hydroxide & Hypochlorite	Process solution.	OH-	5 - 150 g/l	Titration - Acid/base	2040	1667	03-Feb-05
		OCl-	5 - 100 g/l	Titration - Acid/base			
Hypophosphite & Nickel	Electroless Nickel Bath	Ni2+	0.5 - 10 g/l	Titration - Complexometric	2040	421	03-Feb-05
		H2PO-	5 - 50 g/l	Titration - Redox			
Iodide	Brine	I-	0.025 - 1.25 g/l	Titration - Redox	2016 2040	1779	17-Aug-06
Iron(II)	Boiler feed, Cooling water, Drinking water, Industrial waste water and Surface water	Fe2+	0 - 1 mg/l	Colorimetry - VIS	2019 HD 2040	1795	12-Dec-07
Iron(II)	Etching bath	Fe2+	0.02 - 1.0 g/l	Titration - Redox	2016 2040	1781	21-Aug-06
Iron(II)	Boiler feed, Cooling water, Drinking water, Industrial waste water and Surface water	Fe2+	0 - 1 mg/l	Colorimetry - VIS	2004 Alert	1794	12-Dec-07
Iron(II) & Iron(III)	Boiler feed, Cooling water, Drinking water, Industrial waste water and Surface water.	Fe2+ & Fe3+	0 - 5 mg/l	Colorimetry - VIS	2004 Alert	1705	27-Jun-05
Iron(II) & Iron(III)	Boiler feed, Cooling water, Drinking water, Industrial waste water and Surface water.	Fe2+ & Fe3+	0 - 1 mg/l	Colorimetry - VIS	2019 HD 2040	1278	27-Jun-05
Iron(II) & Iron(III)	Boiler feed, Cooling water, Drinking water, Industrial waste water and Surface water.	Fe2+ & Fe3+	0 - 1 mg/l	Colorimetry - VIS	2004 Alert	1279	12-Dec-07
Lactic acid (C3H6O3)	Dairy products	Lactic acid	0.2 - 9 g/l	Titration - Acid/base	2016 2040	953	03-Feb-04

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<i>Parameter</i>	<i>Matrix</i>		<i>Range</i>	<i>Method</i>	<i>Analyzer</i>	<i>nbr</i>	<i>Date:</i>
Manganese	<i>Drinking water</i>	Mn2+	0 - 100 ug/l	Colorimetry - VIS	2004 Alert	1800	25-Feb-08
Manganese	<i>Drinking water</i>	Mn2+	10-100 ug/l	Colorimetry - VIS	2019 Special 2040	1762	25-Jan-06
Nickel	<i>Waste water</i>	Ni2+	0.5 - 12.5 g/l	Titration - Complexometric	2016 2040	1780	17-Aug-06
Nickel	<i>Boiler feed, Cooling water and Industrial waste water.</i>	Ni2+	0 - 3 mg/l	Colorimetry - VIS	2019 Special 2040	1305	06-Sep-05
Nickel	<i>Boiler feed, Cooling water and Industrial waste water.</i>	Ni2+	0 - 3 mg/l	Colorimetry - VIS	2004 Alert	1503	27-Jun-05
Nitrate	<i>Drinking water, Industrial waste water, Municipal waste water and Surface water.</i>	N-NO3	0 - 200 ug/l	Colorimetry - VIS	2019 HD 2040	931	27-Jun-05
Nitrate	<i>Drinking water, Industrial waste water, Municipal waste water and Surface water.</i>	NO3-	0 - 1500 mg/l	Standard addition ISE	2003 Alert	1310	27-Jun-05
Nitrate	<i>Drinking water, Industrial waste water, Municipal waste water and Surface water.</i>	N-NO3	0 - 200 ug/l	Colorimetry - VIS	2004 Alert	1313	27-Jun-05
Nitrate	<i>Drinking water, Industrial waste water, Municipal waste water and Surface water.</i>	NO3-	0 - 120 mg/l	Standard addition ISE	2018 HD 2040	1214	23-Aug-05
Nitrite	<i>Drinking water, Industrial waste water, Municipal waste water and Surface water.</i>	N-NO2	0 - 150 ug/l	Colorimetry - VIS	2019 HD 2040	1251	27-Jun-05
Nitrite	<i>Drinking water, Industrial waste water, Municipal waste water and Surface water.</i>	N-NO2	0 - 150 ug/l	Colorimetry - VIS	2004 Alert	1263	27-Jun-05
Nitrogen, total	<i>Industrial waste water, Municipal waste water and Surface water.</i>	Total N	0 - 100 mg/l	Colorimetry - VIS	2040	1289	06-Sep-05
Nitrogen, total	<i>Industrial waste water, Municipal waste water and Surface water.</i>	Total N	0 - 100 mg/l	Colorimetry - VIS	2040	1280	06-Sep-05
P & M number	<i>Drinking water, Industrial waste water, Municipal waste water, Process water and Surface water.</i>	P-number M-number	0 - 20 mmol/l 0 - 40 mmol/l	Titration - Acid/base Titration - Acid/base	2016 2040	1384	19-Jul-04
Phenol	<i>Industrial waste water.</i>	Phenol	0 - 5 mg/l	Colorimetry - VIS	2019 HD 2040	1261	21-Apr-06
Phenol	<i>Industrial waste water.</i>	Phenol	0 - 5 mg/l	Colorimetry - VIS	2004 Alert	1267	27-Jun-05
Phosphate	<i>Boiler feed, Cooling water, Industrial waste water, Municipal waste water, Power Utility and Surface water.</i>	P-PO4	0 - 1 mg/l	Colorimetry - VIS	2019 HD 2040	1299	27-Jun-05
Phosphate	<i>Boiler feed, Cooling water, Industrial waste water, Municipal waste water, Power Utility and Surface water.</i>	P-PO4	0 - 1 mg/l	Colorimetry - VIS	2004 Alert	1298	27-Jun-05

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Phosphate	Boiler feed, Cooling water, Industrial waste water, Municipal waste water, Power Utility and Surface water.	P-PO4	0 - 7 mg/l	Colorimetry - VIS	2019 HD 2040	1269	21-Apr-06
Phosphate	Boiler feed, Cooling water, Industrial waste water, Municipal waste water, Power Utility and Surface water.	P-PO4	0 - 7 mg/l	Colorimetry - VIS	2004 Alert	1268	21-Apr-06
Phosphate, Total inorganic	Industrial wastewater, Municipal wastewater and Surface water.	Total P	0 - 20 mg/l	Colorimetry - VIS	2040	1751	12-Oct-06
Phosphate, Total inorganic	Industrial wastewater, Municipal wastewater and Surface water.	Total P	0 - 20 mg/l	Colorimetry - VIS	2040	1371	12-Oct-06
Phosphate, Total organic and inorganic	Industrial waste water, Municipal waste water and Surface water	Total-P	0 - 20 mg/l	Colorimetry - VIS	2040	1783	12-Oct-06
Phosphate, Total organic and inorganic	Industrial waste water, Municipal waste water and Surface water	Total-P	0 - 20 mg/l	Colorimetry - VIS	2040	1782	12-Oct-06
Phosphoric acid	65% Phosphoric acid.	H3PO4	1 - 12.5 mol/l	Titration - Acid/base	2016 2040	1666	18-Jan-05
Potassium	Drinking water, Industrial waste water, Municipal waste water and Surface water.	K+	0 - 150 mg/l	Standard addition ISE	2018 HD 2040	1259	23-Aug-05
Potassium	Drinking water, Industrial waste water, Municipal waste water and Surface water.	K+	0 - 150 mg/l	Standard addition ISE	2003 Alert	1276	27-Jun-05
Silica	Boiler feed, Cooling water, High Purity water and Power Utility.	Si4+	0 - 50 ug/l	Colorimetry - VIS	2004 Alert	1383	27-Jun-05
Silica	Boiler feed, Cooling water, High Purity water and Power Utility.	Si4+	0 - 1 mg/l	Colorimetry - VIS	2004 Alert	1303	27-Jun-05
Silica	Boiler feed, Cooling water, High Purity water and Power Utility.	Si4+	0 - 1 mg/l	Colorimetry - VIS	2019 HD 2040	1294	27-Jun-05
Sodium	Boiler feed, Cooling water and Industrial waste water.	Na+	0 - 150 mg/l	Standard addition ISE	2018 HD 2040	1157	23-Aug-05
Sodium	High Purity water and Power Utility	Na+	0 - 90 ug/l	Standard addition ISE	2003 Alert	1769	12-Dec-07
Sodium	Boiler feed, Cooling water and Industrial waste water.	Na+	0 - 1500 mg/l	Standard addition ISE	2003 Alert	1311	27-Jun-05
Sulfate	Drinking water, Industrial waste water, Municipal waste water and Surface water.	(SO4)2-	100 - 5000 mg/l	Titration - Colorimetry	2040	1301	22-Jun-04

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Sulfate	<i>Drinking water, Process water and Surface water.</i>	(SO4)2-	0.3 - 30 mg/l	Titration - Colorimetry	2040	1382	19-Jul-04
Sulfate	<i>Drinking water, Industrial waste water, Municipal waste water and Surface water.</i>	(SO4)2-	5 - 250 mg/l	Titration - Colorimetry	2040	1342	22-Jun-04
Sulfide	<i>Industrial waste water, Municipal waste water and Surface water.</i>	S2-	10 - 500 mg/l	Titration - Argentometric	2016 2040	791	14-Apr-04
Sulfide	<i>Waste water</i>	S2-	0 - 2.5 mg/l	Colorimetry - VIS	2019 HD 2040	1231	19-Apr-06
Sulfuric acid & Zinc	<i>Zinc sulfate.</i>	H2SO4 Zn2+	50 - 200 g/l 10 - 90 g/l	Titration - Acid/base Titration - Redox	2040	1518	18-Jan-05
TBC (4-tertiary-Butylcatechol)	<i>Styrene monomer or AMS (alpha-Methylstyrene)</i>	TBC	0 - 25 mg/l	Colorimetry - VIS	2040	1293	06-Sep-05
Water	<i>Iso-heptane, containing water and toluene (10%).</i>	H2O	10 - 200 mg/l	Titration - Karl Fischer	2016 2040	86	20-Apr-06
Zinc	<i>Industrial waste water and Surface water.</i>	Zn2+	10 - 600 mg/l	Titration - Complexometric	2016 2040	557	17-Aug-06
Zinc(II)	<i>Drinking water, Industrial waste water and Surface water.</i>	Zn2+	0 - 2 mg/l	Colorimetry - VIS	2004 Alert	1505	12-Dec-07
Zinc(II)	<i>Drinking water, Industrial waste water and Surface water.</i>	Zn2+	0 - 2 mg/l	Colorimetry - VIS	2019 Special 2040	1682	12-Dec-07