

Buffer Solutions 20°C

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| Buffer pH 13.00 | 1 l | CL03.0208.1000 |
| pH 13.00 ($\pm 0.02/20^\circ\text{C}$) Glycin-NaCl-NaOH | 10 l | CL03.0208.9010 |
| Buffer pH 12.00 | 1 l | CL03.0207.1000 |
| pH 12.00 ($\pm 0.02/20^\circ\text{C}$) Phosphate-NaOH | 10 l | CL03.0207.9010 |
| Buffer pH 11.00 | 1 l | CL03.0206.1000 |
| pH 11.00 ($\pm 0.02/20^\circ\text{C}$) H ₃ BO ₃ -KCl-NaOH | 10 l | CL03.0206.9010 |
| Buffer pH 10.00 | 100 ml | CL03.0204.0100 |
| pH 10.00 ($\pm 0.02/20^\circ\text{C}$) H ₃ BO ₃ -KCl-NaOH | 1 l | CL03.0204.1000 |
| | 5 l | CL03.0204.5500 |
| | 10 l | CL03.0204.9010 |
| | 25 l | CL03.0204.9025 |
| | 20 l | CL03.0204.9520 |
| Buffer pH 9.60 | 1 l | CL03.0220.1000 |
| pH 9.60 ($\pm 0.02/20^\circ\text{C}$) Borate-NaOH | | |
| Buffer pH 9.00 | 1 l | CL03.0218.1000 |
| pH 9.00 ($\pm 0.02/20^\circ\text{C}$) H ₃ BO ₃ -KCl-NaOH | 5 l | CL03.0218.5500 |
| | 10 l | CL03.0218.9010 |
| | 20 l | CL03.0218.9520 |
| Buffer pH 8.50 | 1 l | CL03.0229.1000 |
| pH 8.50 ($\pm 0.02/20^\circ\text{C}$) H ₃ BO ₃ -KCl-NaOH | 5 l | CL03.0229.5000 |
| Buffer pH 8.00 | 1 l | CL03.0217.1000 |
| pH 8.00 ($\pm 0.02/20^\circ\text{C}$) H ₃ BO ₃ -KCl-NaOH | 5 l | CL03.0217.5500 |
| | 10 l | CL03.0217.9010 |
| Buffer pH 7.50 | 1 l | CL03.0228.1000 |
| pH 7.50 ($\pm 0.02/20^\circ\text{C}$) Phosphate | 5 l | CL03.0228.5000 |
| Buffer pH 7.00 | 100 ml | CL03.0216.0100 |
| pH 7.00 ($\pm 0.02/20^\circ\text{C}$) Phosphate | 1 l | CL03.0216.1000 |
| | 5 l | CL03.0216.5500 |
| | 10 l | CL03.0216.9010 |
| | 25 l | CL03.0216.9025 |
| | 20 l | CL03.0216.9520 |
| Buffer pH 6.50 | 1 l | CL03.0227.1000 |
| pH 6.50 ($\pm 0.02/20^\circ\text{C}$) Phosphate | 5 l | CL03.0227.5000 |
| Buffer pH 6.00 | 1 l | CL03.0215.1000 |
| pH 6.00 ($\pm 0.02/20^\circ\text{C}$) Citrate-NaOH | 5 l | CL03.0215.5500 |
| | 10 l | CL03.0215.9010 |
| Buffer pH 5.00 | 1 l | CL03.0214.1000 |
| pH 5.00 ($\pm 0.02/20^\circ\text{C}$) Citrate-NaOH | 10 l | CL03.0214.9010 |

Buffer Solutions 20°C

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| Buffer pH 4.00 pH 4.00 ($\pm 0.02/20^\circ\text{C}$) Citrate-NaCl-NaOH | 1 l | CL03.0213.1000 |
| | 5 l | CL03.0213.5500 |
| | 10 l | CL03.0213.9010 |
| | 25 l | CL03.0213.9025 |
| | 20 l | CL03.0213.9520 |
| Buffer pH 3.60 pH 3.60 ($\pm 0.02/20^\circ\text{C}$) Phthalate-HCl | 1 l | CL03.0212.1000 |
| | 10 l | CL03.0212.9010 |
| Buffer pH 3.50 pH 3.50 ($\pm 0.02/20^\circ\text{C}$) Phthalate-HCl | 1 l | CL03.0211.1000 |
| | 10 l | CL03.0211.9010 |
| Buffer pH 3.00 pH 3.00 ($\pm 0.02/20^\circ\text{C}$) Citrate-NaCl-NaOH | 1 l | CL03.0210.1000 |
| | 10 l | CL03.0210.9010 |
| Buffer pH 2.00 pH 2.00 ($\pm 0.02/20^\circ\text{C}$) Citrate-NaCl-HCl | 1 l | CL03.0209.1000 |
| | 5 l | CL03.0209.5500 |
| | 10 l | CL03.0209.9010 |
| Buffer pH 1.00 pH 1.00 ($\pm 0.02/20^\circ\text{C}$) KCl-HCl | 1 l | CL03.0203.1000 |
| | 5 l | CL03.0203.5500 |
| | 10 l | CL03.0203.9010 |
| | 20 l | CL03.0203.9520 |

Buffer Solutions 20°C (Colored)

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| Buffer pH 10.00 (colored) pH 10.00 ($\pm 0.02/20^\circ\text{C}$) H ₃ BO ₃ -KCl-NaOH (blue) | 100 ml | CL03.0710.0100 |
| | 500 ml | CL03.0710.0500 |
| | 1 l | CL03.0710.1000 |
| | 5 l | CL03.0710.5500 |
| | 10 l | CL03.0710.9010 |
| | 25 l | CL03.0710.9025 |
| | 20 l | CL03.0710.9520 |
| Buffer pH 9.00 (colored) pH 9.00 ($\pm 0.02/20^\circ\text{C}$) H ₃ BO ₃ -KCl-NaOH (green) | 1 l | CL03.0711.1000 |
| | 5 l | CL03.0711.5500 |
| | 20 l | CL03.0711.9520 |
| Buffer pH 7.00 (colored) pH 7.00 ($\pm 0.02/20^\circ\text{C}$) Phosphate (green) | 100 ml | CL03.0704.0100 |
| | 1 l | CL03.0704.1000 |
| | 5 l | CL03.0704.5500 |
| | 10 l | CL03.0704.9010 |
| | 20 l | CL03.0704.9520 |
| Buffer pH 4.00 (colored) pH 4.00 ($\pm 0.02/20^\circ\text{C}$) Citrate-NaCl-NaOH (red) | 100 ml | CL03.0702.0100 |
| | 1 l | CL03.0702.1000 |
| | 5 l | CL03.0702.5500 |
| | 10 l | CL03.0702.9010 |
| | 20 l | CL03.0702.9520 |
| Buffer pH 2.00 (colored) pH 2.00 ($\pm 0.02/20^\circ\text{C}$) KCl-HCl (red) | 1 l | CL03.0706.1000 |
| | 10 l | CL03.0706.9010 |

Buffer Solutions 25°C

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| Buffer pH 10.000 (25°C) pH 10.000 ($\pm 0.005/25^\circ\text{C}$) H ₃ BO ₃ -KCl-NaOH | 500 ml | CL03.0238.0500 |
| Buffer pH 7.000 (25°C) pH 7.000 ($\pm 0.005/25^\circ\text{C}$) Phosphate | 500 ml | CL03.0237.0500 |
| Buffer pH 4.000 (25°C) pH 4.00 ($\pm 0.005/25^\circ\text{C}$) Citrate-NaCl-NaOH | 500 ml | CL03.0236.0500 |

Standard Buffer Solutions

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| Standard Buffer Calciumhydroxide pH 12.627 pH 12.627 ($\pm 0.02/20^\circ\text{C}$) Ca(OH) ₂ sat. H ₂ O sol. | 1 l 10 l | CL03.0302.1000 CL03.0302.9010 |
| Standard Buffer Carbonate pH 10.060 pH 10.060 ($\pm 0.02/20^\circ\text{C}$) - 5.3 g Na ₂ CO ₃ + 4.2 g NaHCO ₃ / l H ₂ O | 500 ml 1 l 10 l | CL03.0301.0500 CL03.0301.1000 CL03.0301.9010 |
| Standard Buffer Borate pH 9.225 pH 9.225 ($\pm 0.02/20^\circ\text{C}$) - 3.81 g Na ₂ B ₄ O ₇ ·10H ₂ O / l H ₂ O | 500 ml 1 l 10 l | CL03.0202.0500 CL03.0202.1000 CL03.0202.9010 |
| Standard Buffer Phosphate pH 6.881 pH 6.881 ($\pm 0.02/20^\circ\text{C}$) - 3.4 g KH ₂ PO ₄ + 3.55 g Na ₂ HPO ₄ / l H ₂ O | 500 ml 1 l 10 l | CL03.0601.0500 CL03.0601.1000 CL03.0601.9010 |
| Standard Buffer Acetate pH 4.62 pH 4.62 ($\pm 0.02/20^\circ\text{C}$) acetate | 1 l 10 l | CL03.0101.1000 CL03.0101.9010 |
| Standard Buffer Phthalate pH 4.002 pH 4.002 ($\pm 0.02/20^\circ\text{C}$) - 10.13 g C ₈ H ₅ KO ₄ / l H ₂ O | 500 ml 1 l 10 l | CL03.0602.0500 CL03.0602.1000 CL03.0602.9010 |
| Standard Buffer Potassium tetraoxalate pH 1.675 pH 1.675 ($\pm 0.02/20^\circ\text{C}$) - 12.7 g C ₄ H ₃ KO ₈ / l H ₂ O | 1 l 10 l | CL03.1107.1000 CL03.1107.9010 |

Standard Buffer Solutions (Colored)

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| Standard Buffer Calciumhydroxide pH 12.627 (colored) pH 12.627 ($\pm 0.02/20^\circ\text{C}$) Ca(OH) ₂ sat. H ₂ O sol. (blue) | 1 l 10 l | CL03.0707.1000 CL03.0707.9010 |
| Standard Buffer Carbonate pH 10.060 (colored) pH 10.060 ($\pm 0.02/20^\circ\text{C}$) - 5.3 g Na ₂ CO ₃ + 4.2 g NaHCO ₃ / l H ₂ O (blue) | 1 l 10 l | CL03.0701.1000 CL03.0701.9010 |
| Standard Buffer Borate pH 9.225 (colored) pH 9.225 ($\pm 0.02/20^\circ\text{C}$) - 3.81 g Na ₂ B ₄ O ₇ ·10H ₂ O / l H ₂ O (green) | 1 l 10 l | CL03.0705.1000 CL03.0705.9010 |

Standard Buffer Solutions (Colored)

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| Standard Buffer Phosphate pH 6.881 (colored) | 1 l | CL03.0703.1000 |
| pH 6.881 ($\pm 0.02/20^{\circ}\text{C}$) - 3.4 g KH_2PO_4 + 3.55 g Na_2HPO_4 / l H_2O (green) | 10 l | CL03.0703.9010 |
| | 20 l | CL03.0703.9520 |
| Standard Buffer Phthalate pH 4.002 (colored) | 1 l | CL03.0709.1000 |
| pH 4.002 ($\pm 0.02/20^{\circ}\text{C}$) - 10.13 g $\text{C}_8\text{H}_5\text{KO}_4$ / l H_2O (red) | 10 l | CL03.0709.9010 |
| | 20 l | CL03.0709.9520 |
| Standard Buffer Potassium tetraoxalate pH 1.675 (colored) | 1 l | CL03.0708.1000 |
| pH 1.675 ($\pm 0.02/20^{\circ}\text{C}$) - 12.7 g $\text{C}_4\text{H}_3\text{KO}_8$ / l H_2O (red) | 10 l | CL03.0708.9010 |



Conductivity Standards

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| Hydrogen chloride solution (Conductivity standard) LF Standard 500000 μ S/25°C (\pm 1%) | 500 ml | CL03.1149.0500 |
| Hydrogen chloride solution (Conductivity standard) LF Standard 450000 μ S/25°C (\pm 1%) | 500 ml | CL03.1148.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 300000 μ S/25°C (\pm 1%) | 500 ml | CL03.1146.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 200000 μ S/25°C (\pm 1%) | 500 ml | CL03.1145.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 150000 μ S/25°C (\pm 1%) | 500 ml | CL03.1144.0500 |
| Potassium chloride 1 mol/l (Conductivity standard) LF Standard 102.1mS/20°C - 111.8mS/25°C (\pm 1%) | 1 l 10 l | CL03.1104.1000 CL03.1104.9010 |
| Potassium chloride solution (Conductivity standard) LF Standard 100000 μ S/25°C (\pm 1%) | 500 ml | CL03.1143.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 50000 μ S/25°C (\pm 1%) | 500 ml | CL03.1142.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 46mS/20°C - 50mS/25°C (\pm 1%) | 250 ml 500 ml | CL03.1126.0250 CL03.1126.0500 |
| Potassium chloride 0.2 mol/l (Conductivity standard) LF Standard 22.4mS/20°C - 24.7mS/25°C (\pm 1%) | 500 ml 1 l | CL03.1124.0500 CL03.1124.1000 |
| Potassium chloride solution (Conductivity standard) LF Standard 20000 μ S/25°C (\pm 1%) | 500 ml | CL03.1141.0500 |
| Potassium chloride 0.1 mol/l (Conductivity standard) LF Standard 11.67mS/20°C - 12.88mS/25°C (\pm 1%) | 500 ml 1 l 10 l | CL03.1108.0500 CL03.1108.1000 CL03.1108.9010 |
| Potassium chloride solution (Conductivity standard) LF Standard 10000 μ S/25°C (\pm 1%) | 500 ml | CL03.1140.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 5000 μ S/25°C (\pm 1%) | 500 ml | CL03.1139.0500 |
| Potassium chloride 0.03 mol/l (Conductivity standard) LF Standard 3660 μ S/20°C - 4098 μ S/25°C (\pm 1%) | 1 l 10 l | CL03.1103.1000 CL03.1103.9010 |
| Potassium chloride 0.02 mol/l (Conductivity standard) LF Standard 2542 μ S/20°C - 2765 μ S/25°C (\pm 1%) | 1 l 10 l | CL03.1102.1000 CL03.1102.9010 |
| Potassium chloride 0.01 mol/l (Conductivity standard) LF Standard 1278 μ S/20°C - 1413 μ S/25°C (\pm 1%) | 500 ml 1 l 10 l | CL03.1101.0500 CL03.1101.1000 CL03.1101.9010 |

Conductivity Standards

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| Potassium chloride solution (Conductivity standard) LF Standard 1100µS/25°C (± 1%) | 500 ml | CL03.1120.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 1000µS/25°C (± 1%) | 500 ml | CL03.1138.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 452µS/20°C - 500µS/25°C (± 1%) | 500 ml | CL03.1121.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 445µS/25°C (± 1%) | 1 l | CL03.1153.1000 |
| Potassium chloride solution (Conductivity standard) LF Standard 200µS/25°C (± 1%) | 500 ml | CL03.1137.0500 |
| Potassium chloride 0.001 mol/l (Conductivity standard) LF Standard 133µS/20°C - 147µS/25°C (± 1%) | 500 ml | CL03.1133.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 100µS/25°C (± 1%) | 500 ml | CL03.1119.0500 |
| Potassium chloride solution (Conductivity standard) LF Standard 84µS/25°C (± 1%) | 500 ml | CL03.1150.0500 |
| Potassium chloride solution (Low Cond. standard) LF Standard 50µS/25°C (± 1%) (Keep Cool !) | 500 ml | CL03.1134.0500 |
| Potassium chloride solution (Low Cond. standard) LF Standard 25µS/20°C (± 1%) (Keep Cool !) | 1 l | CL03.1132.1000 |
| Potassium chloride solution (Low Cond. standard) LF Standard 25µS/25°C (± 1%) (Keep Cool !) | 500 ml 1 l | CL03.1128.0500 CL03.1128.1000 |
| Potassium chloride solution (Ultralow Cond. standard) LF Standard 20µS/25°C (± 1%) (Keep Cool !) | 500 ml | CL03.1136.0500 |
| Potassium chloride solution (Ultralow Cond. standard) LF Standard 10µS/25°C (± 1%) (Keep Cool !) | 500 ml | CL03.1135.0500 |
| Potassium chloride solution (Ultralow Cond. standard) LF Standard 5µS/25°C (± 1%) (Keep Cool !) | 500 ml | CL03.1127.0500 |
| Hydrogen chloride solution (Conductivity standard) LF Standard 350000µS/25°C (± 1%) | 500 ml | CL03.1147.0500 |

Redox Standards

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| Redox standard solution +500 mV - 25°C Fe(NH ₄) ₂ (SO ₄) ₂ ·6H ₂ O/Fe(NH ₄)(SO ₄) ₂ ·12H ₂ O/H ₂ SO ₄ | 500 ml | CL03.1805.0500 |
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Redox Standards

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| Redox standard solution +430 mV | 500 ml | CL03.1801.0500 |
| Fe(NH ₄) ₂ (SO ₄) ₂ .6H ₂ O/Fe(NH ₄)(SO ₄) ₂ .12H ₂ O/H ₂ SO ₄ | 1 l | CL03.1801.1000 |
| Redox standard solution +358 mV - 25°C | 500 ml | CL03.1804.0500 |
| K ₃ (Fe(CN) ₆)/K ₄ (Fe(CN) ₆).3H ₂ O/H ₂ O (Store dark) | 1 l | CL03.1804.1000 |
| Redox standard solution +183 mV | 500 ml | CL03.1802.0500 |
| K ₄ (Fe(CN) ₆).3H ₂ O/K ₃ (Fe(CN) ₆)/KCl (Store dark) | 1 l | CL03.1802.1000 |
| Redox standard solution +124 mV - 25°C | 500 ml | CL03.1803.0500 |
| K ₃ (Fe(CN) ₆)/K ₄ (Fe(CN) ₆).3H ₂ O/H ₂ O (Store dark) | 1 l | CL03.1803.1000 |

Ion Selective Electrode Standards & Ionic Strength Adjuster Solutions

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| Ammonium chloride-Ammonia buffer pH 10 - ISE buffer | 1 l | CL03.0122.1000 |
| 54 g NH ₄ Cl + 350 ml NH ₄ OH 25% / l H ₂ O | | |
| Ammonium sulfate 4 mol/l - ISE buffer | 500 ml | CL03.0905.0500 |
| 528 g (NH ₄) ₂ SO ₄ / l H ₂ O | | |
| Ammonium sulfate 2 mol/l electrode filling solution - ISE buffer | 100 ml | CL03.0912.0100 |
| 264 g (NH ₄) ₂ SO ₄ / l H ₂ O | | |
| Copper(II)-di-Ammonium EGTA 0.05 mol/l - ISE buffer | 1 l | CL02.1197.1000 |
| 27.21 g CuK ₂ (NH ₄) ₂ C ₁₄ H ₂₀ N ₂ O ₁₀ / l H ₂ O | | |
| Copper(II)-di-Ammonium EDTA 0.1 mol/l - ISE buffer | 500 ml | CL02.1159.0500 |
| 38.784 g Cu(NH ₄) ₂ C ₁₀ H ₁₂ N ₂ O ₈ / l H ₂ O | | |
| Lithium chloride 4 mol/l - ISE buffer | 500 ml | CL03.0908.0500 |
| 170 g LiCl / l H ₂ O | | |
| Nitrate standard solution for ISE measurements | 1 pc | CL01.1444.0001 |
| 0 - 1 - 10 - 100 & 1000 mg/l NO ₃ in 1% KAl(SO ₄) ₂ .12H ₂ O sol. | | |
| Nitrate ISE interference buffer solution - ISE buffer | 500 ml | CL03.1123.0500 |
| 17.32g Al ₂ (SO ₄) ₃ .18H ₂ O+3.43g Ag ₂ SO ₄ +1.28g H ₃ BO ₃ +2.52g H ₃ NO ₃ S / l H ₂ O | | |
| Potassium chloride 4 mol/l - ISE buffer | 500 ml | CL03.0902.0500 |
| 305 g KCl / l H ₂ O | | |
| Potassium chloride 3.5 mol/l+Aluminium(III) sulfate 50 g/l solution - ISA buffer - ISE buffer | 500 ml | CL03.1117.0500 |
| 250 g KCl + 50 g AlK(SO ₄) ₂ .18H ₂ O / l H ₂ O | 1 l | CL03.1117.1000 |
| Potassium nitrate 2.5 mol/l - ISE buffer | 500 ml | CL03.0906.0500 |
| 253 g KNO ₃ / l H ₂ O | | |

Ion Selective Electrode Standards & Ionic Strength Adjuster Solutions

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| Sodium acetate buffer pH 4.7 - ISE buffer 132 g CH ₃ COONa.3H ₂ O + 86 ml CH ₃ COOH / l H ₂ O | 1 l | CL03.1407.1000 |
| Sodium chloride 5 mol/l - ISE buffer 292 g NaCl / l H ₂ O | 500 ml | CL03.0904.0500 |
| Sodium hydroxide 10 mol/l - ISE buffer 400 g NaOH / l H ₂ O | 500 ml | CL03.0901.0500 |
| Sodium nitrate 5 mol/l - ISE buffer 425 g NaNO ₃ / l H ₂ O | 500 ml | CL03.0903.0500 |
| Sulfuric acid 2 mol/l - ISE buffer 196 g H ₂ SO ₄ / l H ₂ O | 500 ml | CL03.0907.0500 |
| TISAB-ENOL Buffer - ISE buffer 10 g CDTA + 58 g NaCl + 57 ml HAc + 29.4 g NaCitr. / l H ₂ O to pH 5.5 with NaOH | 250 ml 1 l | CL12.2001.0250 CL12.2001.1000 |
| TISAB I Buffer - ISE buffer NaCl 58 g + HAc 57 ml + NaCitr. 300 mg / l H ₂ O (pH 5.25 with NaOH) | 1 l 5 l 10 l | CL03.2001.1000 CL03.2001.5000 CL03.2001.9010 |
| TISAB II Buffer - ISE buffer 58 g NaCl + 57 ml CH ₃ COOH + 4 g CDTA / l H ₂ O (pH 5.3 with NaOH) | 500 ml 1 l | CL03.2002.0500 CL03.2002.1000 |
| TISAB III Buffer - ISE buffer 265 g NH ₄ Cl + 53 g NH ₄ Ac + 19 g CDTA / l H ₂ O (pH 6 with NaOH) Do not store cold ! | 500 ml 1 l 10 l | CL03.2007.0500 CL03.2007.1000 CL03.2007.9010 |
| TISAB IV Buffer - ISE buffer 84 ml HCl 37% + 242 g TRIS + 230 g C ₄ H ₄ Na ₂ O ₆ .2aq / l H ₂ O (pH 8.5 ± 0.1) | 500 ml | CL03.2009.0500 |
| TISAB TRIS Buffer - ISE buffer 121.14 g C ₄ H ₁₁ NO ₃ (pH 9 with HNO ₃) | 1 l | CL03.2010.1000 |

Salinity Standards

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| Sodium chloride 30 g/l solution 30 g NaCl / l H ₂ O | 250 ml | CL03.1414.0250 |
| Sodium chloride 125 g/l solution 125 g NaCl / l H ₂ O | 250 ml | CL03.1416.0250 |
| Sodium chloride 58.4 g/l solution 58.4 g NaCl / l H ₂ O | 250 ml | CL03.1415.0250 |
| Sodium chloride 23 g/l solution 23 g NaCl / l H ₂ O | 250 ml | CL03.1413.0250 |

Salinity Standards

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| Sodium chloride 5.84 g/l solution 5.84 g NaCl / l H ₂ O | 250 ml | CL03.1412.0250 |
| Sodium chloride 3 g/l solution 3 g NaCl / l H ₂ O | 250 ml | CL03.1411.0250 |

Electrode Care & Maintenance Solutions

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| Cleaning and storage sol. for electrodes 10 g Pepsine 350 U/ml / l H ₂ O (Stabilised) | 250 ml 1 l | CL02.1801.0250 CL02.1801.1000 |
| Cleaning solution for electrodes 22.5 ml HNO ₃ 65% + 5 ml HF 40% / l H ₂ O | 500 ml 1 l 10 l 25 l | CL02.1803.0500 CL02.1803.1000 CL02.1803.9010 CL02.1803.9025 |
| Potassium chloride 3.5 mol/l (AgCl sat.) 261g KCl - AgCl saturated / l H ₂ O (Store dark and at 20°C) | 250 ml 1 l | CL03.1106.0250 CL03.1106.1000 |
| Potassium chloride 3 mol/l (AgCl sat.) 224 g KCl / AgCl saturated / l H ₂ O (Store dark and at 20°C) | 250 ml 1 l | CL03.1105.0250 CL03.1105.1000 |
| Potassium chloride 3 mol/l 224 g KCl / l H ₂ O | 30 ml 250 ml 1 l 2,5 l 10 l | CL03.1109.0030 CL03.1109.0250 CL03.1109.1000 CL03.1109.2500 CL03.1109.9010 |
| Potassium nitrate 10% solution 100 g KNO ₃ / l H ₂ O | 100 ml 500 ml | CL03.1112.0100 CL03.1112.0500 |
| Regeneration solution for electrodes 25 g NH ₄ HF ₂ / l H ₂ O | 100 ml | CL02.1837.0100 |

TOC Standards

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| TOC 10.000 mg/l standard solution (organic) 21.255 g C ₈ H ₅ O ₄ K / l H ₂ O | 1 l | CL01.2081.1000 |
| TOC 1.000 mg/l standard solution (organic) 2.1255 g C ₈ H ₅ O ₄ K / l H ₂ O (Keep Cool !) | 1 l | CL01.2086.1000 |
| TOC 500 mg/l standard solution (organic) 1.063 g C ₈ H ₅ O ₄ K / l H ₂ O (Keep Cool !) | 1 l | CL01.2086.500.1000 |
| TOC 100 mg/l standard solution (organic) 212.6 mg C ₈ H ₅ O ₄ K / l H ₂ O (Keep Cool !) | 1 l | CL01.2086.100.1000 |

TOC Standards

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| TOC 50 mg/l standard solution (organic) | 1 l | CL01.2086.050.1000 |
| 106.3 mg C ₈ H ₅ O ₄ K / l H ₂ O (Keep Cool !) | | |

TIC Standards

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| TIC 10.000 mg/l standard solution (inorganic) | 1 l | CL01.2083.1000 |
| 44.122 g Na ₂ CO ₃ + 34.972 g NaHCO ₃ / l H ₂ O | | |
| TIC 1.000 mg/l standard solution (inorganic) | 1 l | CL01.2087.1000 |
| 4.4122 g Na ₂ CO ₃ + 3.4972 g NaHCO ₃ / l H ₂ O (Keep Cool !) | | |
| TIC 500 mg/l standard solution (inorganic) | 1 l | CL01.2087.500.1000 |
| 2.2061 g Na ₂ CO ₃ + 1.7486 g NaHCO ₃ / l H ₂ O (Keep Cool !) | | |
| TIC 100 mg/l standard solution (inorganic) | 1 l | CL01.2087.100.1000 |
| 441.2 mg Na ₂ CO ₃ + 349.8 mg NaHCO ₃ / l H ₂ O (Keep Cool !) | | |
| TIC 50 mg/l standard solution (inorganic) | 1 l | CL01.2087.050.1000 |
| 0.2206 g Na ₂ CO ₃ + 174.9 mg NaHCO ₃ / l H ₂ O (Keep Cool !) | | |

COD Standards

| | | |
|---|--------|----------------|
| COD Standard solution (5.000 COD units) | 1 l | CL01.0383.1000 |
| 4.265 g C ₈ H ₅ O ₄ K / l H ₂ O | | |
| COD Standard solution (1000 COD units) | 1 l | CL01.0386.1000 |
| 666 mg C ₃₂ H ₁₂ CuN ₈ Na ₄ O ₁₂ S ₄ / l H ₂ O | | |
| COD Standard solution (1000 COD units) | 1 l | CL01.0387.1000 |
| 853 mg C ₈ H ₅ O ₄ K / H ₂ O (Keep Cool !) | | |
| COD Standard solution (500 COD units) | 1 l | CL01.0382.1000 |
| 426.5 mg C ₈ H ₅ O ₄ K / l H ₂ O (Keep Cool !) | | |
| COD Standard solution (200 COD units) | 100 ml | CL01.0384.0100 |
| 170.6 mg C ₈ H ₅ O ₄ K / l H ₂ O | 500 ml | CL01.0384.0500 |
| COD Standard solution (50 COD units) | 1 l | CL01.0381.1000 |
| 42.7 mg C ₈ H ₅ O ₄ K / l H ₂ O (Keep Cool !) | | |

APHA Colour Standards

| | | |
|---|--------|----------------|
| Colour stock standard solution 500 A.P.H.A. units | 100 ml | CL01.0860.0100 |
| 1.246 g K ₂ PtCl ₆ + 1 g CoCl ₂ .6H ₂ O + 100 ml HCl 37% / l H ₂ O | 500 ml | CL01.0860.0500 |
| | 1 l | CL01.0860.1000 |

Turbidity Standards

| | | | |
|--|--|--------|----------------|
| Formazine turbidity standard 40 NTU | | 500 ml | CL01.0661.0500 |
| 50 mg H4N2.H2SO4 + 500 mg C6H12N4 / l H2O | | 1 l | CL01.0661.1000 |

UV/VIS Spectrophotometer Calibration Standards

| | | | |
|--|------------|--------|----------------|
| Chromate calibration solution | | 250 ml | CL02.0328.0250 |
| 100 mg K2Cr2O7 / l H2SO4 0.005 mol/l | | | |
| Chromate calibration solution (UV-VIS Standard 1A) | NEW | 1 ml | CL02.0377.0001 |
| 600.6 mg K2Cr2O7 / l H2SO4 0.01 N | | | |
| Chromate calibration solution (UV-VIS Standard 1) | NEW | 10 ml | CL02.0374.0010 |
| 60 mg K2Cr2O7 / l H2SO4 0.01 N | | | |
| Potassium chloride solution (UV-VIS Standard 4) | NEW | 10 ml | CL02.1198.0010 |
| 12 g KCl / l in H2O | | | |
| Toluene standard solution (UV-VIS Standard 5) | NEW | 10 ml | CL41.2065.0010 |
| Solution contains 0,02% (v/v) in n-Hexane | | | |
| Holmium(III) oxide calibration solution (UV-VIS Standard 6) | NEW | 100 ml | CL02.0804.0100 |
| 5% Ho2O3 / 1.4 mol/l HClO4 | | | |

Volumetric Standards, Secondary Reference Materials Traceable to NIST

| | | | |
|--|------------|------|----------------|
| Benzoic acid, reference material for NIST | NEW | 50 g | CL00.0252.0050 |
| 99.5-100.5% C6H5COOH | | | |
| Calcium carbonate, reference material for NIST | NEW | 50 g | CL00.2947.0050 |
| 99.95+% CaCO3 | | | |
| Iron(II) ethylene di-ammoniumsulfate, reference material for NIST | NEW | 50 g | CL00.0943.0050 |
| 99.7+% C2H10N2O4S.FeSO4.4H2O | | | |
| Potassium dichromate, reference material for NIST | NEW | 50 g | CL00.3720.0050 |
| 99.95+% K2Cr2O7 | | | |
| Potassium hydrogen phthalate, reference material for NIST | NEW | 50 g | CL00.3732.0050 |
| 99.5+% C8H5O4K | | | |
| Potassium iodate, reference material for NIST | | 50 g | CL00.1677.0050 |
| 99.95+% KIO3 | | | |
| Sodium carbonate, reference material for NIST | NEW | 50 g | CL00.4040.0050 |
| 99.95+% Na2CO3 | | | |

Volumetric Standards, Secondary Reference Materials Traceable to NIST

| | | | |
|---|------------|------|----------------|
| Sodium chloride, reference material for NIST 99.95+% NaCl | NEW | 50 g | CL00.4038.0050 |
| di-Sodium oxalate, reference material for NIST 99.7+% C ₂ Na ₂ O ₄ | NEW | 50 g | CL00.4052.0050 |
| Tris(hydroxymethyl) aminomethane, reference material for NIST 99.9+% C ₄ H ₁₁ NO ₃ | NEW | 50 g | CL00.2083.0050 |
| Zinc, reference material for NIST 99.95+% Zn | NEW | 50 g | CL00.2647.0050 |

Brix Standards

| | | | |
|---|------------|-------|----------------|
| Saccharose 60 weight % solution 600 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 60°Bx at 20°C) | NEW | 25 ml | CL12.1924.0025 |
| Saccharose 55 weight % solution 550 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 55°Bx at 20°C) | NEW | 25 ml | CL12.1923.0025 |
| Saccharose 50 weight % solution 500 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 50°Bx at 20°C) | | 25 ml | CL12.1907.0025 |
| Saccharose 45 weight % solution 450 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 45°Bx at 20°C) | NEW | 25 ml | CL12.1922.0025 |
| Saccharose 40 weight % solution 400 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 40°Bx at 20°C) | NEW | 25 ml | CL12.1921.0025 |
| Saccharose 35 weight % solution 350 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 35°Bx at 20°C) | NEW | 25 ml | CL12.1920.0025 |
| Saccharose 30 weight % solution 300 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 30°Bx at 20°C) | NEW | 25 ml | CL12.1919.0025 |
| Saccharose 25 weight % solution 250 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 25°Bx at 20°C) | NEW | 25 ml | CL12.1918.0025 |
| Saccharose 20 weight % solution 200 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 20°Bx at 20°C) | NEW | 25 ml | CL12.1917.0025 |
| Saccharose 15 weight % solution 150 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 15°Bx at 20°C) | NEW | 25 ml | CL12.1916.0025 |
| Saccharose 12.5 weight % solution 125 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 12.5°Bx at 20°C) | NEW | 25 ml | CL12.1915.0025 |

Brix Standards

| | | | |
|---|------------|-------|----------------|
| Saccharose 12 weight % solution 120 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 12°Bx at 20°C) | NEW | 25 ml | CL12.1914.0025 |
| Saccharose 11.5 weight % solution 115 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 11.5°Bx at 20°C) | NEW | 25 ml | CL12.1913.0025 |
| Saccharose 11.2 weight % solution 112 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 11.2°Bx at 20°C) | NEW | 25 ml | CL12.1912.0025 |
| Saccharose 10 weight % solution 100 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 10°Bx at 20°C) | NEW | 25 ml | CL12.1911.0025 |
| Saccharose 7 weight % solution 70 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 7°Bx at 20°C) | NEW | 25 ml | CL12.1910.0025 |
| Saccharose 5 weight % solution 50 g C ₁₂ H ₂₂ O ₁₁ / kg H ₂ O (= 5°Bx at 20°C) | NEW | 25 ml | CL12.1909.0025 |
| Saccharose 0 weight % solution H ₂ O (= 0°Bx at 20°C) | NEW | 25 ml | CL12.1908.0025 |

Hardness Standards General

| | | | |
|---|--|------------------|----------------------------------|
| Hardness standard solution 100°FH for IC (Ion HIQU) 1 g CaCO ₃ / I 0.4% HCl | | 100 ml 500 ml | CL01.0812.0100 CL01.0812.0500 |
| Hardness standard solution 100 °DH for IC (Ion HIQU) 1.786 g CaCO ₃ / I 0.4% HCl | | 100 ml 500 ml | CL01.0811.0100 CL01.0811.0500 |
| Hardness standard solution 100°FH for IC (Ion ECON) 1 g CaCO ₃ / I 0.4% HCl | | 500 ml | CL01.0817.0500 |
| Hardness standard solution 100 °DH for IC (Ion ECON) 1.786 g CaCO ₃ / I 0.4% HCl | | 500 ml | CL01.0816.0500 |

CIPAC Standard Solutions

| | | | |
|--|------------|-------------|----------------------------------|
| Hardness standard solution A 20 ppm hardness - pH 6.0-7.0 - Ca/Mg = 50/50 | NEW | 5 l 10 l | CL01.0851.5000 CL01.0851.9010 |
| Hardness standard solution B 20 ppm hardness - pH 8.0-9.0 - Ca/Mg = 80/20 | NEW | 5 l 10 l | CL01.0852.5000 CL01.0852.9010 |
| Hardness standard solution C 500 ppm hardness - pH 7.0-8.0 - Ca/Mg = 80/20 | NEW | 5 l 10 l | CL01.0853.5000 CL01.0853.9010 |

CIPAC Standard Solutions

| | | | |
|--|------------|------|----------------|
| Hardness standard solution D | NEW | 5 l | CL01.0854.5000 |
| 342 ppm hardness - pH 6.0-7.0 - Ca/Mg = 80/20 | | 10 l | CL01.0854.9010 |
| Hardness standard solution E | NEW | 5 l | CL01.0855.5000 |
| 1500 ppm hardness - pH 7.0-8.0 - Ca/Mg = 80/20 | | 10 l | CL01.0855.9010 |
| Hardness standard solution F | NEW | 5 l | CL01.0856.5000 |
| 5000 ppm hardness - pH 6.0-7.0 - Ca only | | 10 l | CL01.0856.9010 |
| Hardness standard solution G | NEW | 5 l | CL01.0857.5000 |
| 8000 ppm hardness - pH 6.0-7.0 - Mg only | | 10 l | CL01.0857.9010 |

Osmolality Standards

| | | | |
|--|------------|------|----------------|
| Osmolality standard 700 mOsm/kg H2O solution (5 x 5 ml) | NEW | 5 ml | CL03.1507.0005 |
| 22.380 g NaCl / kg H2O = 700 mOsm/kg | | | |
| Osmolality standard 600 mOsm/kg H2O solution (5 x 5 ml) | NEW | 5 ml | CL03.1506.0005 |
| 19.147 g NaCl / kg H2O = 600 mOsm/kg | | | |
| Osmolality standard 500 mOsm/kg H2O solution (5 x 5 ml) | NEW | 5 ml | CL03.1505.0005 |
| 15.916 g NaCl / kg H2O = 500 mOsm/kg | | | |
| Osmolality standard 400 mOsm/kg H2O solution (5 x 5 ml) | NEW | 5 ml | CL03.1504.0005 |
| 12.684 g NaCl / kg H2O = 400 mOsm/kg | | | |
| Osmolality standard 300 mOsm/kg H2O solution (5 x 5 ml) | NEW | 5 ml | CL03.1503.0005 |
| 9.463 g NaCl / kg H2O = 300 mOsm/kg | | | |
| Osmolality standard 200 mOsm/kg H2O solution (5 x 5 ml) | NEW | 5 ml | CL03.1502.0005 |
| 6.260 g NaCl / kg H2O = 200 mOsm/kg | | | |
| Osmolality standard 100 mOsm/kg H2O solution (5 x 5 ml) | NEW | 5 ml | CL03.1501.0005 |
| 3.087 g NaCl / kg H2O = 100 mOsm/kg | | | |





Bijlage bij accreditatie-certificaat
Annexe au certificat d'accréditation
Annex to the accreditation certificate
Beilage zur Akkreditierungszertifikat

531-RM

ISO GUIDE 34:2009

| | |
|--|------------|
| Versie/Version/Fassung | 1 |
| Uitgifte datum / Date of emission / Issue date / Ausgabedatum: | 2017-05-11 |
| Geldigheidsdatum / Date limite de validité / Validity date / Gültigkeitsdatum: | 2018-03-05 |

Nicole Meurée-Vanlaethem
Voorzitter van het Accreditatiebureau
La Présidente du Bureau d'Accréditation
Chair of the Accreditation Board
Vorsitzende des Akkreditierungsbüro

De accreditatie werd uitgereikt aan/ L'accréditation est délivrée à/
The accreditation is granted to/ Die akkreditierung wurde erteilt für:

Chem-Lab nv
Industriezone "De Arend", 2
8210 ZEDELGEM

Secrétariat: **Accréditation BELAC Accreditate** **Secretariat**
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531-CAL

NBN EN ISO/IEC 17025:2005

| | |
|--|------------|
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Numéro d'urgence: 0214 585 348 **E-Mail: Belac@economie.fgov.be** **Overheidsnummer: 0214 585 348**

LF Values / °C for Conductivity standard solutions

| Type 1: | 0.01 mol/l KCl | 0.1 mol/l KCl | 1 mol/l KCl |
|-------------|----------------|-----------------|-----------------|
| CL Nrs : | CL03.1101 | CL03.1108 | CL03.1104 |
| Temperature | LF values | LF values | LF values |
| 0°C | 776 µS | 7.15 mS | 65.4 mS |
| 1°C | 800 µS | 7.36 mS | 67.1 mS |
| 2°C | 823 µS | 7.57 mS | 68.8 mS |
| 3°C | 847 µS | 7.79 mS | 70.6 mS |
| 4°C | 872 µS | 8.00 mS | 72.3 mS |
| 5°C | 896 µS | 8.22 mS | 74.1 mS |
| 6°C | 920 µS | 8.44 mS | 75.9 mS |
| 7°C | 945 µS | 8.66 mS | 77.7 mS |
| 8°C | 970 µS | 8.88 mS | 79.5 mS |
| 9°C | 995 µS | 9.10 mS | 81.4 mS |
| 10°C | 1020 µS | 9.33 mS | 83.2 mS |
| 11°C | 1045 µS | 9.56 mS | 85.0 mS |
| 12°C | 1070 µS | 9.79 mS | 86.9 mS |
| 13°C | 1096 µS | 10.02 mS | 88.7 mS |
| 14°C | 1121 µS | 10.25 mS | 90.6 mS |
| 15°C | 1147 µS | 10.48 mS | 92.5 mS |
| 16°C | 1173 µS | 10.72 mS | 94.4 mS |
| 17°C | 1199 µS | 10.95 mS | 96.3 mS |
| 18°C | 1225 µS | 11.19 mS | 98.2 mS |
| 19°C | 1251 µS | 11.43 mS | 100.2 mS |
| 20°C | 1278 µS | 11.67 mS | 102.1 mS |
| 21°C | 1305 µS | 11.91 mS | 104.0 mS |
| 22°C | 1332 µS | 12.15 mS | 105.9 mS |
| 23°C | 1359 µS | 12.39 mS | 107.9 mS |
| 24°C | 1386 µS | 12.64 mS | 109.8 mS |
| 25°C | 1413 µS | 12.88 mS | 111.8 mS |
| 26°C | 1441 µS | 13.13 mS | 113.8 mS |
| 27°C | 1468 µS | 13.37 mS | 115.7 mS |
| 28°C | 1496 µS | 13.62 mS | 117.7 mS |
| 29°C | 1524 µS | 13.87 mS | 119.7 mS |
| 30°C | 1552 µS | 14.12 mS | 121.7 mS |

pH Values / °C for NBS – Standard Buffer Solutions

| Type : | PTOxalate | FTALATE | PHOSPHATE | BORATE | CARBONATE | Ca(OH) ₂ |
|---------------|--------------|--------------|--------------|--------------|---------------|---------------------|
| CL Nrs : | CL03.1107 | CL03.0602 | CL03.0601 | CL03.0202 | CL03.0301 | CL03.0302 |
| CL Coloured : | CL03.0708 | CL03.0702 | CL03.0703 | CL03.0705 | CL03.0701 | CL03.0707 |
| Temperature | pH values | pH values | pH values | pH values | pH values | pH values |
| 0°C | 1.666 | 4.003 | 6.984 | 9.464 | 10.32 | 13.433 |
| 5°C | 1.668 | 3.999 | 6.951 | 9.395 | 10.24 | 13.207 |
| 10°C | 1.670 | 3.998 | 6.923 | 9.332 | 10.18 | 13.003 |
| 15°C | 1.672 | 3.999 | 6.900 | 9.276 | 10.12 | 12.810 |
| 20°C | 1.675 | 4.002 | 6.881 | 9.225 | 10.060 | 12.627 |
| 25°C | 1.679 | 4.008 | 6.865 | 9.180 | 10.01 | 12.454 |
| 30°C | 1.683 | 4.015 | 6.853 | 9.139 | 9.97 | 12.289 |
| 40°C | 1.694 | 4.035 | 6.838 | 9.068 | 9.89 | 11.984 |
| 50°C | 1.707 | 4.060 | 6.833 | 9.011 | 9.83 | 11.705 |
| 60°C | 1.723 | 4.091 | 6.836 | 8.962 | - | 11.449 |
| 70°C | 1.743 | 4.126 | 6.845 | 8.921 | - | - |
| 80°C | 1.766 | 4.164 | 6.859 | 8.885 | - | - |

pH Values / °C for buffer solutions

| pH | Art. Nr. | Comp. / l sol. | Buf. cap. β | 0°C | 10°C | 20°C | 25°C | 30°C | 40°C | 50°C | 60°C | 70°C | 80°C | 90°C |
|---------|-----------|---|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| pH 1 | CL03.0203 | 3.73 g KCl + 134 ml HCl* | 0.32 | 0.94 | 0.99 | 1.00 | 1.00 | 1.00 | 1.01 | 1.01 | 1.01 | 1.01 | 1.02 | 1.02 |
| pH 2 | CL03.0209 | 6.43 g HCltr. + 3.58 g NaCl + 8.2 ml HCl* | 0.03 | 1.99 | 1.99 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| pH 2** | CL03.0706 | 6.43 g HCltr. + 3.58 g NaCl + 8.2 ml HCl* | 0.03 | 1.99 | 1.99 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| pH 3 | CL03.0210 | 8.47 g HCltr. + 3.49 g NaCl + 20.6 ml NaOH* | 0.03 | 3.03 | 3.02 | 3.00 | 3.00 | 3.00 | 2.99 | 2.98 | 2.98 | 2.98 | 2.98 | 2.97 |
| pH 4 | CL03.0213 | 11.76 g HCltr. + 2.57 g NaCl + 68 ml NaOH* | 0.04 | 4.03 | 4.02 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| pH 4** | CL03.0702 | 11.76 g HCltr. + 2.57 g NaCl + 68 ml NaOH* | 0.04 | 4.03 | 4.02 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| pH 5 | CL03.0214 | 20.26 g HCltr. + 196.4 ml NaOH* | 0.07 | 5.05 | 5.02 | 5.00 | 5.00 | 5.00 | 5.00 | 5.02 | 5.04 | 5.07 | 5.10 | 5.13 |
| pH 6 | CL03.0215 | 12.53 g HCltr. + 159.6 ml NaOH* | 0.03 | 6.03 | 6.01 | 6.00 | 6.01 | 6.02 | 6.04 | 6.06 | 6.09 | 6.13 | 6.18 | 6.24 |
| pH 7 | CL03.0216 | 3.52 g KH ₂ PO ₄ + 7.26 g Na ₂ HPO ₄ ·2aq | 0.03 | 7.13 | 7.05 | 7.00 | 6.99 | 6.98 | 6.97 | 6.96 | 6.96 | 6.97 | 6.98 | 7.00 |
| pH 7** | CL03.0704 | 3.52 g KH ₂ PO ₄ + 7.26 g Na ₂ HPO ₄ ·2aq | 0.03 | 7.13 | 7.05 | 7.00 | 6.99 | 6.98 | 6.97 | 6.96 | 6.96 | 6.97 | 6.98 | 7.00 |
| pH 8 | CL03.0217 | 4.77 g Na ₂ B ₄ O ₇ ·10aq + 20.5 ml HCl* | 0.014 | 8.18 | 8.09 | 8.00 | 7.97 | 7.94 | 7.90 | 7.86 | 7.82 | 7.80 | 7.77 | 7.75 |
| pH 9 | CL03.0218 | 4.77 g Na ₂ B ₄ O ₇ ·10aq + 4.6 ml HCl* | 0.02 | 9.24 | 9.11 | 9.00 | 8.97 | 8.93 | 8.86 | 8.80 | 8.75 | 8.71 | 8.67 | 8.64 |
| pH 10 | CL03.0204 | 4.77 g Na ₂ B ₄ O ₇ ·10aq + 18.3 ml NaOH* | 0.013 | 10.24 | 10.10 | 10.00 | 9.95 | 9.90 | 9.82 | 9.75 | 9.68 | 9.62 | 9.55 | 9.49 |
| pH 10** | CL03.0710 | 4.77 g Na ₂ B ₄ O ₇ ·10aq + 18.3 ml NaOH* | 0.013 | 10.24 | 10.10 | 10.00 | 9.95 | 9.90 | 9.82 | 9.75 | 9.68 | 9.62 | 9.55 | 9.49 |
| pH 11 | CL03.0206 | 6.209 g H ₃ BO ₃ + 4.0 g NaOH + 3.7 g KCl | 0.013 | 11.45 | 11.20 | 11.00 | 10.90 | 10.81 | 10.64 | 10.48 | 10.33 | 10.19 | 10.06 | 9.93 |
| pH 12 | CL03.0207 | 4.45 g Na ₂ HPO ₄ ·2aq + 0.892 g NaOH | 0.02 | 12.58 | 12.26 | 12.00 | 11.88 | 11.75 | 11.53 | 11.31 | 11.09 | 10.88 | 10.68 | 10.48 |
| pH 13 | CL03.0208 | 0.375 g Glycin + 0.222 g NaCl + 95 ml NaOH* | | | | | | | | | | | | 13.00 |

(*) = 1 mol/l sol.

(**) = coloured

Conformity attest available on request. All solutions are stabilised, so they keep fresh for over 2 years.

mV Values / °C for Redox Standard Solutions

| CL03.1803 | | CL03.1804 | |
|-------------------------------|--------|-------------------------------|--------|
| Redox Standaard 124 mV – 25°C | | Redox Standaard 358 mV – 25°C | |
| Temperature | mV | Temperature | mV |
| 2°C | 153 mV | 2°C | 385 mV |
| 4°C | 150 mV | 4°C | 382 mV |
| 6°C | 147 mV | 6°C | 380 mV |
| 8°C | 144 mV | 8°C | 378 mV |
| 10°C | 141 mV | 10°C | 376 mV |
| 12°C | 138 mV | 12°C | 373 mV |
| 14°C | 136 mV | 14°C | 371 mV |
| 16°C | 134 mV | 16°C | 368 mV |
| 18°C | 132 mV | 18°C | 366 mV |
| 20°C | 130 mV | 20°C | 364 mV |
| 22°C | 127 mV | 22°C | 361 mV |
| 24°C | 125 mV | 24°C | 359 mV |
| 25°C | 124 mV | 25°C | 358 mV |
| 26°C | 123 mV | 26°C | 357 mV |
| 28°C | 125 mV | 28°C | 355 mV |
| 30°C | 122 mV | 30°C | 352 mV |
| 32°C | 120 mV | 32°C | 350 mV |
| 34°C | 117 mV | 34°C | 347 mV |
| 36°C | 115 mV | 36°C | 345 mV |
| 38°C | 112 mV | 38°C | 343 mV |
| 40°C | 99 mV | 40°C | 340 mV |

Values \pm 1 mV / °C

ICP Single Element Standards 1 000 mg/L

| Element | HNO ₃ | HCl | H ₂ O | NH ₄ OH | HF | HNO ₃ /HF | HNO ₃ /tart. | KOH | NaOH | Others |
|---------|------------------|-----------|------------------|--------------------|-----------|----------------------|-------------------------|-----------|-----------|-----------|
| Al | CL01.0101 | CL01.0102 | | | | | | | | |
| Sb | | CL01.0121 | | | | CL01.0122 | CL01.0162 | | | |
| As | CL01.0133 | CL01.0132 | | | | | | CL01.0131 | | |
| Ba | CL01.0201 | CL01.0202 | | | | | | | | |
| Be | CL01.0212 | CL01.0211 | | | | | | | | |
| Bi | CL01.0221 | | | | | | | | | |
| B | CL01.0232 | | CL01.0231 | | | | | | | |
| Cd | CL01.0301 | | | | | | | | | |
| Ca | CL01.0311 | CL01.0312 | | | | | | | | |
| Ce | CL01.0321 | | | | | | | | | |
| Cs | CL01.0331 | | | | | | | | | |
| Cr | CL01.0362 | CL01.0361 | CL01.0352 | | | | | | | |
| Co | CL01.1121 | CL01.1122 | | | | | | | | |
| Cu | CL01.1131 | CL01.1132 | | | | | | | | |
| Dy | CL01.0431 | | | | | | | | | |
| Er | CL01.0501 | | | | | | | | | |
| Eu | CL01.0511 | | | | | | | | | |
| Gd | CL01.0701 | | | | | | | | | |
| Ga | CL01.0711 | | | | | | | | | |
| Ge | | | | | | CL01.0741 | | CL01.0721 | | |
| Au | | CL01.0731 | | | | | | | | |
| Hf | | CL01.0802 | | | CL01.0801 | | | | | |
| Ho | CL01.0821 | | | | | | | | | |
| In | CL01.0921 | | | | | | | | | |
| Ir | | CL01.0931 | | | | | | | | |
| Fe | CL01.0901 | CL01.0902 | | | | | | | | |
| La | CL01.1201 | CL01.1202 | | | | | | | | |
| Pb | CL01.1221 | | | | | | | | | |
| Li | CL01.1212 | CL01.1211 | | | | | | | | |
| Lu | CL01.1231 | | | | | | | | | |
| Mg | CL01.1301 | CL01.1302 | | | | | | | | |
| Mn | CL01.1311 | CL01.1312 | | | | | | | | |
| Hg | CL01.1151 | | | | | | | | | |
| Mo | | | | CL01.1332 | | CL01.1331 | | | | |
| Nd | CL01.1411 | | | | | | | | | |
| Ni | CL01.1421 | CL01.1422 | | | | | | | | |
| Nb | | | | | CL01.1431 | | | | | |
| Os | | CL01.1501 | | | | | | | | |
| Pd | | CL01.1601 | | | | | | | | |
| P | CL01.0641 | | CL01.0631 | | | | | | | |
| Pt | | CL01.1611 | | | | | | | | |
| K | CL01.1101 | CL01.1102 | | | | | | | | |
| Pr | CL01.1621 | | | | | | | | | |
| Re | CL01.1802 | | CL01.1801 | | | | | | | |
| Rh | | CL01.1811 | | | | | | | | |
| Rb | CL01.1822 | CL01.1821 | | | | | | | | |
| Ru | | CL01.1831 | | | | | | | | |
| Sm | CL01.1901 | | | | | | | | | |
| Sc | CL01.1911 | | | | | | | | | |
| Se | CL01.1922 | CL01.1921 | | | | | | | | |
| Si | | | CL01.1999 | | CL01.1945 | CL01.1932 | | CL01.1931 | CL01.1935 | |
| Ag | CL01.2601 | | | | | | | | | |
| Na | CL01.1401 | CL01.1402 | | | | | | | | |
| Sr | CL01.1962 | CL01.1961 | | | | | | | | |
| S | | | CL01.2641 | | | | | | | CL01.2642 |
| Ta | | | | | CL01.2001 | CL01.2002 | | | | |
| Te | | CL01.2012 | | | | CL01.2013 | | CL01.2011 | | |
| Tb | CL01.2022 | | | | | | | | | |
| Tl | | | | | | | | | | |
| Th | CL01.2041 | | | | | | | | | |
| Tm | CL01.2051 | | | | | | | | | |
| Sn | | CL01.2061 | | | | CL01.2062 | | | | |
| Ti | | CL01.2072 | CL01.4601 | | CL01.2071 | CL01.2075 | | | | |
| W | | | | CL01.2302 | CL01.2301 | CL01.2331 | | | | |
| V | CL01.2201 | | | | | | | | | |
| Yb | CL01.2501 | | | | | | | | | |
| Y | CL01.2511 | | | | | | | | | |
| Zn | CL01.2611 | CL01.2612 | | | | | | | | |
| Zr | | CL01.2632 | | | CL01.2631 | CL01.2672 | | | | |

ICP Single Element Standards 10 000 mg/L

| Element | HNO ₃ | HCl | H ₂ O | NH ₄ OH | HF | HNO ₃ /HF | HNO ₃ /tart. | KOH | NaOH | Others |
|---------|------------------|-----------|------------------|--------------------|-----------|----------------------|-------------------------|-----------|------|-----------|
| Al | CL01.0103 | CL01.0104 | | | | | | | | |
| Sb | | CL01.0123 | | | | CL01.0124 | | | | |
| As | CL01.0134 | | | | | | | | | |
| Ba | CL01.0203 | CL01.0204 | | | | | | | | |
| Be | CL01.0214 | | | | | | | | | |
| Bi | CL01.0223 | | | | | | | | | |
| B | | | CL01.0233 | | | | | | | |
| Cd | CL01.0303 | | | | | | | | | |
| Ca | CL01.0314 | | | | | | | | | |
| Ce | CL01.0323 | | | | | | | | | |
| Cs | CL01.0333 | | | | | | | | | |
| Cr | CL01.0364 | CL01.0363 | | | | | | | | |
| Co | CL01.1123 | CL01.1128 | | | | | | | | |
| Cu | CL01.1133 | CL01.1134 | | | | | | | | |
| Dy | CL01.0433 | | | | | | | | | |
| Er | CL01.0503 | | | | | | | | | |
| Eu | CL01.0513 | | | | | | | | | |
| Gd | CL01.0703 | | | | | | | | | |
| Ga | | | | | | | | | | CL01.0713 |
| Ge | | | | | | CL01.0743 | | | | |
| Au | | CL01.0733 | | | | | | | | |
| Hf | | CL01.0804 | | | CL01.0803 | | | | | |
| Ho | CL01.0823 | | | | | | | | | |
| In | CL01.0923 | | | | | | | | | |
| Ir | | CL01.0933 | | | | | | | | |
| Fe | CL01.0903 | CL01.0904 | | | | | | | | |
| La | CL01.1203 | | | | | | | | | |
| Pb | CL01.1223 | | | | | | | | | |
| Li | CL01.1214 | | | | | | | | | |
| Lu | CL01.1233 | | | | | | | | | |
| Mg | CL01.1304 | CL01.1310 | | | | | | | | |
| Mn | CL01.1313 | | | | | | | | | |
| Hg | CL01.1153 | | | | | | | | | |
| Mo | | | | CL01.1334 | | CL01.1333 | | | | |
| Nd | CL01.1413 | | | | | | | | | |
| Ni | CL01.1423 | | | | | | | | | |
| Nb | | | | | CL01.1433 | | | | | |
| Pd | | CL01.1603 | | | | | | | | |
| P | CL01.0643 | | CL01.0633 | | | | | | | CL01.0634 |
| Pt | | CL01.1613 | | | | | | | | |
| K | CL01.1104 | | | | | | | | | |
| Pr | CL01.1623 | | | | | | | | | |
| Re | CL01.1804 | | CL01.1803 | | | | | | | |
| Rh | | CL01.1813 | | | | | | | | |
| Rb | CL01.1824 | | | | | | | | | |
| Ru | | CL01.1834 | | | | | | | | |
| Sm | CL01.1903 | | | | | | | | | |
| Sc | CL01.1913 | | | | | | | | | |
| Se | CL01.1923 | | | | | | | | | |
| Si | | | | | CL01.1943 | CL01.1934 | | CL01.1933 | | |
| Ag | CL01.2603 | | | | | | | | | |
| Na | CL01.1404 | | | | | | | | | |
| Sr | CL01.1963 | | | | | | | | | |
| S | | | CL01.2644 | | | | | | | CL01.2643 |
| Ta | | | | | CL01.2003 | CL01.2004 | | | | |
| Te | | CL01.2015 | | | | CL01.2014 | | | | |
| Tb | CL01.2023 | | | | | | | | | |
| Tl | CL01.2033 | | | | | | | | | |
| Th | CL01.2043 | | | | | | | | | |
| Tm | CL01.2053 | | | | | | | | | |
| Sn | | CL01.2063 | | | | | | | | |
| Ti | | CL01.2073 | | | | CL01.2074 | | | | |
| W | | | | CL01.2303 | CL01.2304 | CL01.2333 | | | | |
| V | CL01.2203 | | | | | | | | | |
| Yb | CL01.2503 | | | | | | | | | |
| Y | CL01.2513 | | | | | | | | | |
| Zn | CL01.2613 | | | | | | | | | |
| Zr | | CL01.2633 | | | | | | | | |

AA Single Element Standards 1 000 mg/L

| Element | HNO ₃ | HCl | H ₂ O | NH ₄ OH | HF | HNO ₃ /HF | HNO ₃ /tart. | KOH | NaOH | Others |
|---------|------------------|-----------|--------------------------|--------------------|-----------|----------------------|-------------------------|-----------|------|-----------|
| Al | CL01.0106 | CL01.0107 | CL01.0105 | | | | | | | |
| Sb | | CL01.0126 | | | | CL01.0127 | | | | |
| As | CL01.0138 | CL01.0137 | CL01.0135 | | | | | CL01.0136 | | |
| Ba | CL01.0206 | CL01.0207 | | | | | | | | |
| Be | CL01.0217 | CL01.0216 | | | | | | | | |
| Bi | CL01.0226 | | | | | | | | | |
| B | CL01.0237 | | CL01.0236 | | | | | | | |
| Cd | CL01.0306 | CL01.0398 | CL01.0305 | | | | | | | |
| Ca | CL01.0316 | CL01.0317 | | | | | | | | |
| Cr | CL01.0367 | CL01.0366 | CL01.0365 / CL01.0356 | | | | | | | |
| Co | CL01.1126 | CL01.1127 | CL01.1125 | | | | | | | |
| Cu | CL01.1136 | CL01.1137 | CL01.1135 | | | | | | | |
| In | CL01.0926 | | | | | | | | | |
| Fe | CL01.0906 | CL01.0907 | CL01.0905 | | | | | | | |
| Pb | CL01.1226 | | CL01.1125 | | | | | | | |
| Li | CL01.1217 | CL01.1216 | | | | | | | | |
| Mg | CL01.1306 | CL01.1307 | | | | | | | | |
| Mn | CL01.1316 | CL01.1317 | CL01.1315 | | | | | | | |
| Hg | CL01.1156 | | CL01.1155 | | | | | | | |
| Mo | | | | | | CL01.1336 | | | | |
| Ni | CL01.1426 | CL01.1427 | CL01.1425 | | | | | | | |
| Nb | | | | | CL01.1436 | | | | | |
| P | | | CL01.0635 | | | | | | | |
| K | CL01.1106 | CL01.1107 | | | | | | | | |
| Se | CL01.1927 | CL01.1926 | CL01.1925 | | | | | | | |
| Si | | | | | | | | CL01.1936 | | |
| Ag | CL01.2606 | | CL01.2605 | | | | | | | |
| Na | CL01.1406 | CL01.1407 | | | | | | | | |
| Sr | CL01.1967 | CL01.1966 | | | | | | | | |
| S | | | CL01.2646 | | | | | | | CL01.2645 |
| Te | | CL01.2017 | | | | CL01.2018 | | CL01.2016 | | |
| Tl | CL01.2036 | | | | | | | | | |
| Sn | | CL01.2066 | | | | | | | | |
| Ti | | CL01.2077 | | | CL01.2076 | | | | | |
| W | | | | CL01.2308 | CL01.2306 | | | | | |
| V | CL01.2206 | | | CL01.2205 | | | | | | CL01.2208 |
| Y | CL01.2516 | | | | | | | | | |
| Zn | CL01.2616 | CL01.2617 | CL01.2615 | | | | | | | |
| Zr | | CL01.2637 | | | CL01.2636 | | | | | |

Please photocopy this form for your use.

Tailor-Made AAS/ICP Multi Element Standard

Company: Phone:
 Address: Fax:
 E-mail:
 Position:
 Contact:

Standard Info : (mg/L – µg/L)

Elements

| | | |
|-----------------|-------------------|----------------|
| (Al) Aluminium | (In) Indium | (Sm) Samarium |
| (Sb) Antimony | (Ir) Iridium | (Sc) Scandium |
| (As) Arsenic | (Fe) Iron | (Se) Selenium |
| (Ba) Barium | (La) Lanthanum | (Si) Silicium |
| (Be) Beryllium | (Pb) Lead | (Ag) Silver |
| (Bi) Bismuth | (Li) Lithium | (Na) Sodium |
| (B) Boron | (Lu) Lutetium | (Sr) Strontium |
| (Cd) Cadmium | (Mg) Magnesium | (S) Sulfur |
| (Ca) Calcium | (Mn) Mangan | (Ta) Tantalum |
| (C) Carbon | (Hg) Mercury | (Te) Tellurium |
| (Ce) Cerium | (Mo) Molybdenum | (Tb) Terbium |
| (Cs) Cesium | (Nd) Neodymium | (Tl) Thallium |
| (Cr) Chromium | (Ni) Nickel | (Th) Thorium |
| (Co) Cobalt | (Nb) Niobium | (Tm) Thulium |
| (Cu) Copper | (Os) Osmium | (Sn) Tin |
| (Dy) Dysprosium | (Pd) Palladium | (Ti) Titanium |
| (Er) Erbium | (P) Phosphorus | (W) Tungsten |
| (Eu) Europium | (Pt) Platinum | (U) Uranium |
| (Gd) Gadolinium | (K) Potassium | (V) Vanadium |
| (Ga) Gallium | (Pr) Praseodymium | (Yb) Ytterbium |
| (Ge) Germanium | (Re) Rhenium | (Y) Yttrium |
| (Au) Gold | (Rh) Rhodium | (Zn) Zinc |
| (Hf) Hafnium | (Rb) Rubidium | (Zr) Zirconium |
| (Ho) Holmium | (Ru) Ruthenium | |

Matrix : Matrix concentration : % Quantity : x mL

Additional info :

MSDS provided with all standards.

Send to:
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Industriezone "De Arend" 2
B-8210 ZEDELGEM
Belgium

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