

ISE Specifications

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Ion Name	ION Species	Sensing Element	Range @ 25°C	pH Range	Temp Range (°C)	Known Interferences
Ammonia/Ammonium	NH ₃ /NH ₄ ⁺	Gas Sensing	5 X 10 ⁻⁷ to 1 M (0.01 to 17,000 ppm)	Above 11	0 to 50	Volatile Amines
Ammonium	NH ₄ ⁺	PVC Membrane	5 X 10 ⁻⁷ to 1M (0.01 to 18,000 ppm)	4 to 10	0 to 50	K ⁺ , Na ⁺
Bromide	Br ⁻	Solid State	5 X 10 ⁻⁶ to 1M (0.01 to 79,900 ppm)	1 to 12	0 to 80	I ⁻ , Cl ⁻ , S ²⁻ , CN ⁻ and NH ₃
Cadmium	Cd ⁺⁺	Solid State	1 x 10 ⁻⁷ to 1 x 10 ⁻¹ M (0.01 to 11,200 ppm)	2 to 8	0 to 80	Hg ²⁺ , Ag ⁺ & Cu ²⁺ must be absent, high levels of Pb ²⁺ & Fe ²⁺
Calcium	Ca ⁺⁺	PVC Membrane	5 X 10 ⁻⁷ to 1 M (0.02 to 40,000 ppm)	2.5 to 11	0 to 50	pB ²⁺ , Hg ²⁺ , Si ²⁺ , Fe ²⁺ , Cu ²⁺ , Ni ²⁺ , NH ₃ , Na ⁺ , Li ⁺ , Tris ⁺ , K ⁺ , Ba ⁺ , Zn ²⁺ , Mg ²⁺
Carbon Dioxide (carbonate)	CO ₂	Gas Sensing	10 ⁻⁴ to 10 ⁻² M (4.4 to 400ppm)	4.8 to 5.2	0 to 50	Volatile Weak Acids
Chloride	Cl ⁻	Solid State	5 X 10 ⁻⁵ to 1M (1.8 to 35,500 ppm)	2 to 12	0 to 80	CN ⁻ , Br ⁻ , I ⁻ , OH ⁻ & S ²⁻ must be absent
Cupric	Cu ⁺⁺	Solid State	8 X 10 ⁻⁶ to 10 ⁻¹ M (6.4 X 10 ⁻⁴ to 6,000 ppm)	2 to 12	0 to 80	Hg ²⁺ & Ag ⁺ must be absent; high levels Fe ²⁺ , Br ⁻ and Cl ⁻
Cyanide	CN ⁻	Solid State	8 X 10 ⁻⁶ to 1 X 10 ⁻² M (0.2 to 260ppm)	10 to 14	0 to 80	I ⁻ , Br ⁻ , Cl ⁻ , S ²⁻ must be absent
Fluoride	F ⁻	Solid State	1 X 10 ⁻⁶ to saturation (0.02ppm to saturation)	5 to 7 @ 10 ⁻⁶ M 11 @ 10 ⁻¹ M	0 to 80	OH ⁻
Iodide	I ⁻	Solid State	5 X 10 ⁻⁸ to 1M (5 X 10 ⁻³ to 127,000ppm)	0 to 14	0 to 80	CN ⁻ , S ₂ O ₃ ²⁻ , Cl ⁻ , S ²⁻ , NH ₃
Lead	Pb ⁺⁺	Solid State	1 X 10 ⁻⁶ to 1 X 10 ⁻¹ M (0.2 to 20,700ppm)	4 to 7	0 to 80	Hg ²⁺ , Ag ⁺ , Cu ²⁺ must be absent; high levels of Fe ²⁺ & Cd ²⁺
Nitrate	NO ₃ ⁻	PVC Membrane	7 X 10 ⁻⁶ to 1M (0.1 to 14,000ppm)	2.5 to 11	0 to 50	ClO ₄ ⁻ , I ⁻ , ClO ₃ ⁻ , F ⁻
Potassium	K ⁺	PVC Membrane	1 X 10 ⁻⁶ to 1M (0.04 to 39,000ppm)	2 to 12	0 to 50	Cs ⁺ , NH ₄ ⁺ , TI ⁺ , H ⁺ , Ag ⁺ , tris ⁺ , Li ⁺ , Na ⁺
Silver/Sulfide	Ag ⁺	Solid State	Ag ⁺ : 10 ⁻⁷ to 1M (0.01 to 107,900ppm)	2 to 12	0 to 80	Hg ²⁺
	S ₂ ⁻		S ⁻ : 10 ⁻⁷ to 1M (0.003 to 32,100ppm)	10 +		
Thiocyanate	SCN ⁻	Solid State	5 X 10 ⁻⁶ to 1M (0.29 to 58,100ppm)	2 to 10	0 to 80	I ⁻ , Br ⁻ , CN ⁻ , NH ₃ , S ₂ O ₃ ²⁻ , Cl ⁻ , OH ⁻ , S ²⁻