

Standartlar ve Referans Maddeler, CertiPUR®

Analiz süreci;

1- Kullanılacak alet ve ekipmanların standart çözeltilerle kalibre edilmesi,

2- Titrasyon işleminde kullanılacak kimyasalların sekonder referans maddelerle standartlaştırılması (derişiminin ayarlanması) ile başlar. Analiz sonuçlarının doğruluğu, kullanılan standart ve referans maddelerinin güvenilirliği ile doğrudan ilgilidir. MERCK CertiPUR® maddeler uluslararası standartlara (BAM, IRMM, NIST ve PTB) uygundur, ayrıca MERCK ICP laboratuvarları da DIN EN ISO 17025 Deney ve Kalibrasyon Laboratuvarları Akreditasyonu Sertifikasına sahiptir. Tüm standartlar ve referans maddeler için, üretim sonrası spesifik üretim parametrelerini ve önemli kalite kontrol verilerini içeren ayrıntılı Analiz Sertifikası düzenlenmektedir.

ICP Standartları için matriks ve eser element safsızlıkları kompozisyonu ile izlenebilirliği sağlayan parti numarası, üretim tarihi ve minimum raf ömrü bilgilerini içeren Analiz Sertifikası ürünle birlikte verilmektedir. AAS standartları ve konsantre kimyasallar (Titrisol®) ile referans maddeler için ise bu bilgiler www.merckmillipore.com sitesinden indirilebilir.

ICP Tek Element Standartları CertiPUR® (100 mL)

Katalog No (ICP 1000 mg/L)	Katalog No (ICP 10000 mg/L)	Ürün Adı	Element	Kompozisyon
M170301	M170371	Aluminium	Al	Al(NO ₃) ₃ in HNO ₃ 2–3%
M170302		Antimony	Sb	Sb ₂ O ₃ in HCl 7%
M170303		Arsenic	As	H ₃ AsO ₄ in HNO ₃ 2–3%
M170304		Barium	Ba	Ba(NO ₃) ₂ in HNO ₃ 2–3%
M170305		Beryllium	Be	Be ₄ O(C ₂ H ₃ O ₂) ₆ in HNO ₃ 2–3%
M170306		Bismuth	Bi	Bi(NO ₃) ₃ in HNO ₃ 2–3%
M170307		Boron	B	H ₃ BO ₃ in water
M170309		Cadmium	Cd	Cd(NO ₃) ₂ in HNO ₃ 2–3%
M170308	M170373	Calcium	Ca	Ca(NO ₃) ₂ in HNO ₃ 2–3%
M170311		Cerium	Ce	Ce(NO ₃) ₃ in HNO ₃ 2–3%
M170310		Cesium	Cs	CsNO ₃ in HNO ₃ 2–3%
M170312	M170374	Chromium	Cr	Cr(NO ₃) ₃ in HNO ₃ 2–3%
M170313	M170375	Cobalt	Co	Co(NO ₃) ₂ in HNO ₃ 2–3%
M170314	M170378	Copper	Cu	Cu(NO ₃) ₂ in HNO ₃ 2–3%
M170315		Dysprosium	Dy	Dy ₂ O ₃ in HNO ₃ 2–3%
M170316		Erbium	Er	Er ₂ O ₃ in HNO ₃ 2–3%
M170317		Europium	Eu	Eu ₂ O ₃ in HNO ₃ 2–3%
M170318		Gadolinium	Gd	Gd ₂ O ₃ in HNO ₃ 2–3%
M170319		Gallium	Ga	Ga(NO ₃) ₃ in HNO ₃ 2–3%
M170320		Germanium	Ge	(NH ₄) ₂ GeF ₆ in water
M170321		Gold	Au	H(AuCl ₄) in HCl 7%
M170322		Hafnium	Hf	HfOCl ₂ in HCl 7%
M170323		Holmium	Ho	Ho ₂ O ₃ in HNO ₃ 2–3%
M170324		Indium	In	In(NO ₃) ₃ in HNO ₃ 2–3%
M170325		Iridium	Ir	IrCl ₃ in HCl 7%
M170326	M170376	Iron	Fe	Fe(NO ₃) ₃ in HNO ₃
M170327		Lanthanum	La	La(NO ₃) ₃ in HNO ₃ 2–3%
M170328	M170372	Lead	Pb	Pb(NO ₃) ₂ in HNO ₃ 2–3%
M170329		Lithium	Li	LiNO ₃ in HNO ₃ 2–3%
M170330		Lutetium	Lu	Lu ₂ O ₃ in HNO ₃ 2–3%
M170331	M170379	Magnesium	Mg	Mg(NO ₃) ₂ in HNO ₃ 2–3%
M170332	M170380	Manganese	Mn	Mn(NO ₃) ₂ in HNO ₃ 2–3%
M170333	M170384	Mercury	Hg	Hg(NO ₃) ₂ in HNO ₃ 10%
M170334		Molybdenum	Mo	(NH ₄) ₆ Mo ₇ O ₂₄ in water
M170335		Neodymium	Nd	Nd ₂ O ₃ in HNO ₃ 2–3%
M170336	M170382	Nickel	Ni	Ni(NO ₃) ₂ in HNO ₃ 2–3%
M170337		Niobium	Nb	NH ₄ NbF ₆ in water

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ICP Tek Element Standartları CertiPUR® (100 mL)				
M170338		Osmium	Os	(NH ₄) ₂ O ₈ OsCl ₆ in HCl 7%
M170339		Palladium	Pd	Pd(NO ₃) ₂ in HNO ₃ 2–3%
M170340	M170383	Phosphorous	P	H ₃ PO ₄ in water
M170341		Platinum	Pt	H ₂ PtCl ₆ in HCl 7%
M170342	M170377	Potassium	K	KNO ₃ in HNO ₃ 2–3%
M170343		Praseodymium	Pr	Pr ₂ O ₃ in HNO ₃ 2–3%
M170344		Rhenium	Re	NH ₄ ReO ₄ in water
M170345		Rhodium	Rh	Rh(NO ₃) ₃ in HNO ₃ 2–3%
M170346		Rubidium	Rb	RbNO ₃ in HNO ₃ 2–3%
M170347		Ruthenium	Ru	RuCl ₃ in HCl 7%
M170348		Samarium	Sm	Sm ₂ O ₃ in HNO ₃ 2–3%
M170349		Scandium	Sc	Sc ₂ O ₃ in HNO ₃ 7%
M170350		Selenium	Se	SeO ₂ in HNO ₃ 2–3%
M170365	M170386	Silicon	Si	SiO ₂ in NaOH
M170352		Silver	Ag	AgNO ₃ in HNO ₃ 2–3%
M170353	M170381	Sodium	Na	NaNO ₃ in HNO ₃ 2–3%
M170355	M170385	Sulfur	S	H ₂ SO ₄ in water
M170354		Strontium	Sr	Sr(NO ₃) ₂ in HNO ₃ 2–3%
M170356		Tantalum	Ta	(NH ₄) ₂ TaF ₇ in water
M170357		Tellurium	Te	H ₆ TeO ₆ in HNO ₃ 2–3%
M170358		Terbium	Tb	Tb(NO ₃) ₃ in HNO ₃ 2–3%
M170359		Thallium	Tl	TlNO ₃ in HNO ₃ 2–3%
M170361		Thulium	Tm	Tm(NO ₃) ₃ in HNO ₃ 2–3%
M170362		Tin	Sn	SnCl ₄ in HCl 7%
M170363		Titanium	Ti	(NH ₄) ₂ TiF ₆ in water (trace HF)
M170364		Tungsten	W	(NH ₄) ₂ WO ₄ in water
M170366	M170388	Vanadium	V	NH ₄ VO ₃ in HNO ₃
M170367		Ytterbium	Yb	Yb ₂ O ₃ in HNO ₃ 2–3%
M170368		Yttrium	Y	Y(NO ₃) ₃ in HNO ₃ 2–3%
M170369	M170389	Zinc	Zn	Zn(NO ₃) ₂ in HNO ₃ 2–3%
M170370	M170390	Zirconium	Zr	ZrOCl ₂ in HCl

ICP Tek Element Standartları CertiPUR® (100 mL)

M108623	Mercury	Hg	10 mg/L Hg(NO ₃) ₂ in HNO ₃ 2–3%
M108525	Rhodium, internal standard for ICP	Rh	10 mg/L Rh(NO ₃) ₃ in HNO ₃ 2–3%



Katalog No	Ürün Adı	Kompozisyon (mg/L)
ICP Çoklu Element Kalibrasyon Standartları CertiPUR® (100 mL)		
M115474	Multielement standard I (19 elements in 1 mol/L nitric acid)	Be, Sr 1 mg/L Ag, Ni 50 mg/L Ba, Mn 5 mg/L AL 100 mg/L B, Fe 15 mg/L Ga 150 mg/L Cd, Co, Cu, Zn 20 mg/L Bi, Pb, In 200mg/L Cr 25 mg/L TI 400 mg/L
M111355	Multielement standard Solution IV (23 elements in 1 mol/L nitric acid)	Ag, Al, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, In, K, Li, Mg, Mn, Na, Ni, Pb, Sr, TI, Zn 1000 mg/L
M109492	Multielement standard Solution VIII (24 elements in 1 mol/L nitric acid)	Al, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, Li, Mg, Mn, Na, Ni, Pb, Se, Sr, Te, TI, Zn 100 mg/L
M109494	Multielement standard Solution IX (9 elements in 1 mol/L nitric acid)	As, Be, Cd, Cr (VI), Hg, Ni, Pb, Se, TL 100 mg/L
M109493	Multielement standard solution X for surface water testing (23 elements in 1 mol/L nitric acid)	Bi, Se, TL 10 µg/L B, Fe, Mo, Sr 100 µg/L Be, Cd, Cr, Cu 20 µg/L K 3000 µg/L Co, Pb 25 µg/L Na 8000 µg/L Mn 30 µg/L Mg 15000 µg/L As, Ba, Ni, V, Zn 50 µg/L Ca 35000 µg/L
M109480	Multielement standard solution XIII (15 elements in % 5 nitric acid)	Hg 5 mg/L V 250 mg/L Cd, Se 25 mg/L Al 500 mg/L As, Be, Co, Cr, Cu, Fe, Mn, Ni, Pb, Zn 100 mg/L
M109487	Multielement standard solution XVI (21 elements in % 5 nitric acid)	As, Be, Ca, Cd, Co, Cr, Cu, Fe, Li, Mg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Ti, TL, V, Zn 100 mg/L
M109495	Multielement standard solution XVII (7 elements in % 15 hydrochloric acid)	Hf, Ir, Sb, Sn, Ta, Ti, Zr 100 mg/L
ICP/MS Kalibrasyon Standartları CertiPUR® (100 mL)		
M110580	Multielement standard solution VI for ICP-MS (30 elements in 1 mol/L nitric acid)	Ag, Al, Ba, Bi, Cd, Co, Cr, Cu, Ga, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Rb, Sr, Te, TI, U, V 10 mg/L As, B, Be, Fe, Se, Zn 100 mg/L Ca 1000 mg/L
M109498	Multielement standard solution XXI for MS (30 elements in % 5 nitric acid, Hg separately)	Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, Hg, In, K, Li, Mg, Mn, Na, Ni, Pb, Rb, Se, Sr, TI, U, V, Zn 10 mg/L

NIST
PTB

