



Nacionalni centar
za vanjsko vrednovanje
obrazovanja

Identifikacijska
naljepnica

PAŽLJIVO NALIJEPI TI

KEM

KEMIJA

Periodni sustav elemenata
Temeljne prirodne konstante
Standardni redukcijski elektrodni potencijali

KEM T D

KEM.42.HR.R.T1.04



40437



12

Periodni sustav elemenata IUPAC

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 H 1,01		2 He 4,00															
3 Li 6,94	4 Be 9,01											5 B 10,8	6 C 12,0	7 N 14,0	8 O 16,0	9 F 19,0	10 Ne 20,2
11 Na 23,0	12 Mg 24,3											13 Al 27,0	14 Si 28,1	15 P 31,0	16 S 32,1	17 Cl 35,5	18 Ar 39,9
19 K 39,1	20 Ca 40,1	21 Sc 45,0	22 Ti 47,9	23 V 50,9	24 Cr 52,0	25 Mn 54,9	26 Fe 55,8	27 Co 58,9	28 Ni 58,7	29 Cu 63,5	30 Zn 65,4	31 Ga 69,7	32 Ge 72,6	33 As 74,9	34 Se 79,0	35 Br 79,9	36 Kr 83,8
37 Rb 85,5	38 Sr 87,6	39 Y 88,9	40 Zr 91,2	41 Nb 92,9	42 Mo 95,9	43 Tc [98]	44 Ru 101	45 Rh 103	46 Pd 106	47 Ag 108	48 Cd 112	49 In 115	50 Sn 119	51 Sb 122	52 Te 128	53 I 127	54 Xe 131
55 Cs 133	56 Ba 137	57-71 lantanoïdi	72 Hf 178	73 Ta 181	74 W 184	75 Re 186	76 Os 190	77 Ir 192	78 Pt 195	79 Au 197	80 Hg 201	81 Tl 204	82 Pb 207	83 Bi 209	84 Po [209]	85 At [210]	86 Rn [222]
87 Fr [223]	88 Ra [226]	89-103 aktinoidi	104 Rf [261]	105 Db [262]	106 Sg [266]	107 Bh [264]	108 Hs [277]	109 Mt [268]	110 Ds [269]	111 Rg [272]	112 Cn [285]						
57 La 139	58 Ce 140	59 Pr 141	60 Nd 144	61 Pm [145]	62 Sm 150	63 Eu 152	64 Gd 157	65 Tb 159	66 Dy 163	67 Ho 165	68 Er 167	69 Tm 169	70 Yb 173	71 Lu 175			
89 Ac [227]	90 Th 232	91 Pa 231	92 U 238	93 Np [237]	94 Pu [244]	95 Am [243]	96 Cm [247]	97 Bk [247]	98 Cf [251]	99 Es [252]	100 Fm [257]	101 Md [258]	102 No [259]	103 Lr [262]			



TEMELJNE PRIRODNE KONSTANTE

Veličina	Znak	Vrijednost
brzina svjetlosti u vakuumu	c_0	$3,00 \times 10^8 \text{ m s}^{-1}$
Planckova konstanta	h	$6,63 \times 10^{-34} \text{ J s}$
elementarni naboj	e	$1,60 \times 10^{-19} \text{ C}$
masa mirovanja elektrona	m_e	$9,11 \times 10^{-31} \text{ kg}$
masa mirovanja protona	m_p	$1,67 \times 10^{-27} \text{ kg}$
masa mirovanja neutrona	m_n	$1,67 \times 10^{-27} \text{ kg}$
atomska masena konstanta, unificirana atomska jedinica mase, dalton	$m_u = 1 \text{ u} = 1 \text{ Da}$	$1,66 \times 10^{-27} \text{ kg}$
Avogadrova konstanta	L, N_A	$6,02 \times 10^{23} \text{ mol}^{-1}$
Boltzmannova konstanta	k	$1,38 \times 10^{-23} \text{ J K}^{-1}$
Faradayeva konstanta	F	$9,65 \times 10^4 \text{ C mol}^{-1}$
molarna plinska konstanta	R	$8,31 \text{ J K}^{-1} \text{ mol}^{-1}$
nula Celzijeve temperature		273 K
molarni volumen idealnoga plina ($p = 101 \text{ kPa}$, $t = 0 \text{ }^\circ\text{C}$)	V_m	$22,4 \text{ L mol}^{-1}$



**STANDARDNI REDUKCIJSKI ELEKTRODNI POTENCIJALI
ODABRANIH REDOKS SUSTAVA U VODENIM OTOPINAMA PRI 25 °C**

Shematski prikaz	E° / V
$\text{Au}^+ \mid \text{Au}$	1,692
$\text{Cl}^- \mid \text{Cl}_2$	1,358
$\text{Br}^- \mid \text{Br}_2$	1,087
$\text{Hg}^{2+} \mid \text{Hg}$	0,851
$\text{Ag}^+ \mid \text{Ag}$	0,800
$\text{I}^- \mid \text{I}_2$	0,535
$\text{Cu}^+ \mid \text{Cu}$	0,521
$\text{OH}^- \mid \text{O}_2$	0,401
$\text{Cu}^{2+} \mid \text{Cu}$	0,342
$\text{H}^+ \mid \text{H}_2$	0
$\text{Fe}^{3+} \mid \text{Fe}$	-0,037
$\text{Pb}^{2+} \mid \text{Pb}$	-0,126
$\text{Sn}^{2+} \mid \text{Sn}$	-0,137
$\text{Ni}^{2+} \mid \text{Ni}$	-0,257
$\text{Co}^{2+} \mid \text{Co}$	-0,28
$\text{Cd}^{2+} \mid \text{Cd}$	-0,352
$\text{Fe}^{2+} \mid \text{Fe}$	-0,447
$\text{Cr}^{3+} \mid \text{Cr}$	-0,744
$\text{Zn}^{2+} \mid \text{Zn}$	-0,762
$\text{Cr}^{2+} \mid \text{Cr}$	-0,913
$\text{Mn}^{2+} \mid \text{Mn}$	-1,185
$\text{Ti}^{2+} \mid \text{Ti}$	-1,630
$\text{Al}^{3+} \mid \text{Al}$	-1,662
$\text{Mg}^{2+} \mid \text{Mg}$	-2,372
$\text{Na}^+ \mid \text{Na}$	-2,711
$\text{Ca}^{2+} \mid \text{Ca}$	-2,868
$\text{Ba}^{2+} \mid \text{Ba}$	-2,912
$\text{K}^+ \mid \text{K}$	-2,931
$\text{Cs}^+ \mid \text{Cs}$	-3,026

