

Uorganisk kemi

d-blokken
E-pH diagrammer

02/11/2009

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Grundstoffernes periodiske system

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac															

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d-blok 1ste periode

Elektron konfiguration: $[Ar]3d^n4s^2$

$Sc^{3+} - Cr^{3+}$ $Mn^{2+} - Zn^{2+}$

hårde Lewis syrer blødere Lewis syrer

F^- , $R-O^-$ $R_3N:$ S^{2-}

Redoxaktivitet (forskellige ox-trin)

$M^{x+} - L$: kompleksdannelse dominerer

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Oxider

OT	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
1									Cu ₂ O	
2							CoO	NiO	CuO	ZnO
2,3					Mn ₃ O ₄	Fe ₃ O ₄	Co ₃ O ₄			
3	Sc ₂ O ₃	Ti ₂ O ₃	V ₂ O ₃	Cr ₂ O ₃	Mn ₂ O ₃	Fe ₂ O ₃	Co ₂ O ₃			
4		TiO ₂	VO ₂	CrO ₂	MnO ₂					
5			V ₂ O ₅							
6				CrO ₃						
7					Mn ₂ O ₇					
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+ peroxid i base

Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
Sc(OH) ₆ ³⁻	TiO ₂	VO ₄ ³⁻	CrO ₄ ²⁻	MnO ₂	Fe ₂ O ₃	Co(OH) ₃	Ni(OH) ₂	Cu(OH) ₄ ²⁻	Zn(OH) ₄ ²⁻

+ sulfid

Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
Sc(OH) ₄ ⁻	TiO ₂	VO _x	Cr(OH) ₃	MnS	FeS	CoS	NiS	CuS	ZnS
					FeS ₂				

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Højere oxtrin

	Sc	Ti	V	Cr	Mn
+7					MnO_4^-
+6				CrO_4^{2-}	MnO_4^{2-}
+5			VO_2^+ sur		
			VO_4^{3-} base		
+4		TiO^{2+}	VO^{2+}		MnO_2

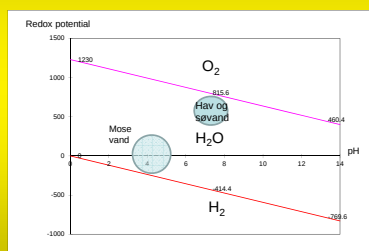
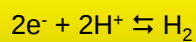
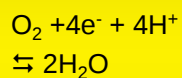
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E – pH diagrammer Noter s 25

Vands eksistensgrænser

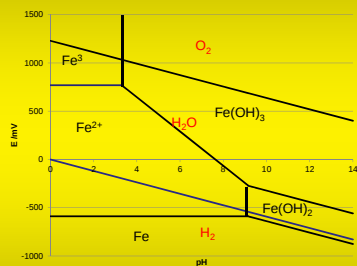


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Jern som eksempel

Noter
side 25-28

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