

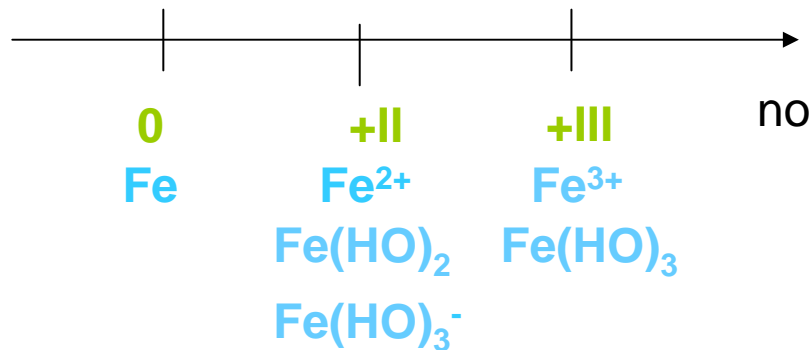
## DIAGRAMME POTENTIEL-pH du FER

Données :  $E^{\circ}_1 (\text{Fe}^{3+} / \text{Fe}^{2+}) = 0,77 \text{ V}$  ;  $E^{\circ}_2 (\text{Fe}^{2+} / \text{Fe}) = - 0,44 \text{ V}$   
 $\text{pK}_{s2} (\text{Fe}(\text{HO})_2) = 15,1$        $\text{pK}_{s1} (\text{Fe}(\text{HO})_3) = 38$        $\text{pK}_f (\text{Fe}(\text{HO})_3^-) = 5,1$

On prendra les concentrations des espèces dissoutes égales à 1 mol/L

1- Espèces mises en jeu:  $\text{Fe}^{3+}$     $\text{Fe}^{2+}$     $\text{Fe}$     $\text{Fe}(\text{HO})_2$     $\text{Fe}(\text{HO})_3$     $\text{Fe}(\text{HO})_3^-$   
+III   +II   0   +II   +III   +II

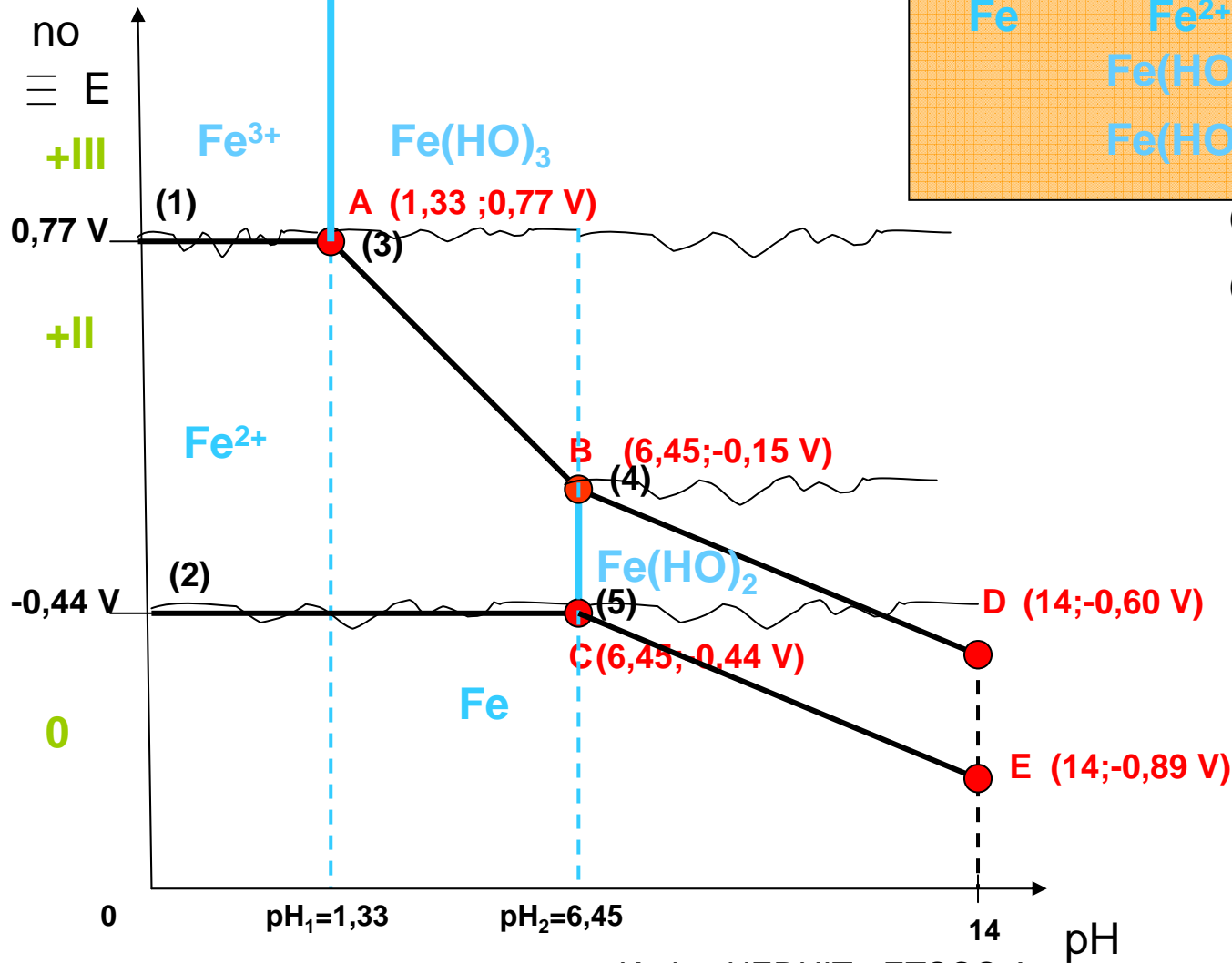
2- Echelle des n.o:



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3- n.o= f(pH):  $C_0 = 1 \text{ mol.L}^{-1}$

0	+II	+III	no
Fe	Fe <sup>2+</sup>	Fe <sup>3+</sup>	
	Fe(OH) <sub>2</sub>	Fe(OH) <sub>3</sub>	
		Fe(OH) <sub>3</sub> <sup>-</sup>	



- (1):  $E_1 = 0,77 \text{ V}$
- (2):  $E_2 = -0,44 \text{ V}$
- (3):  $E_3 = 1,01 - 0,18 \text{ pH}$
- (4):  $E_4 = 0,237 - 0,06 \text{ pH}$
- (5):  $E_5 = -0,053 - 0,06 \text{ pH}$

Diagramme potentiel-pH du fer  
 $C_0 = 1 \text{ mol.L}^{-1}$

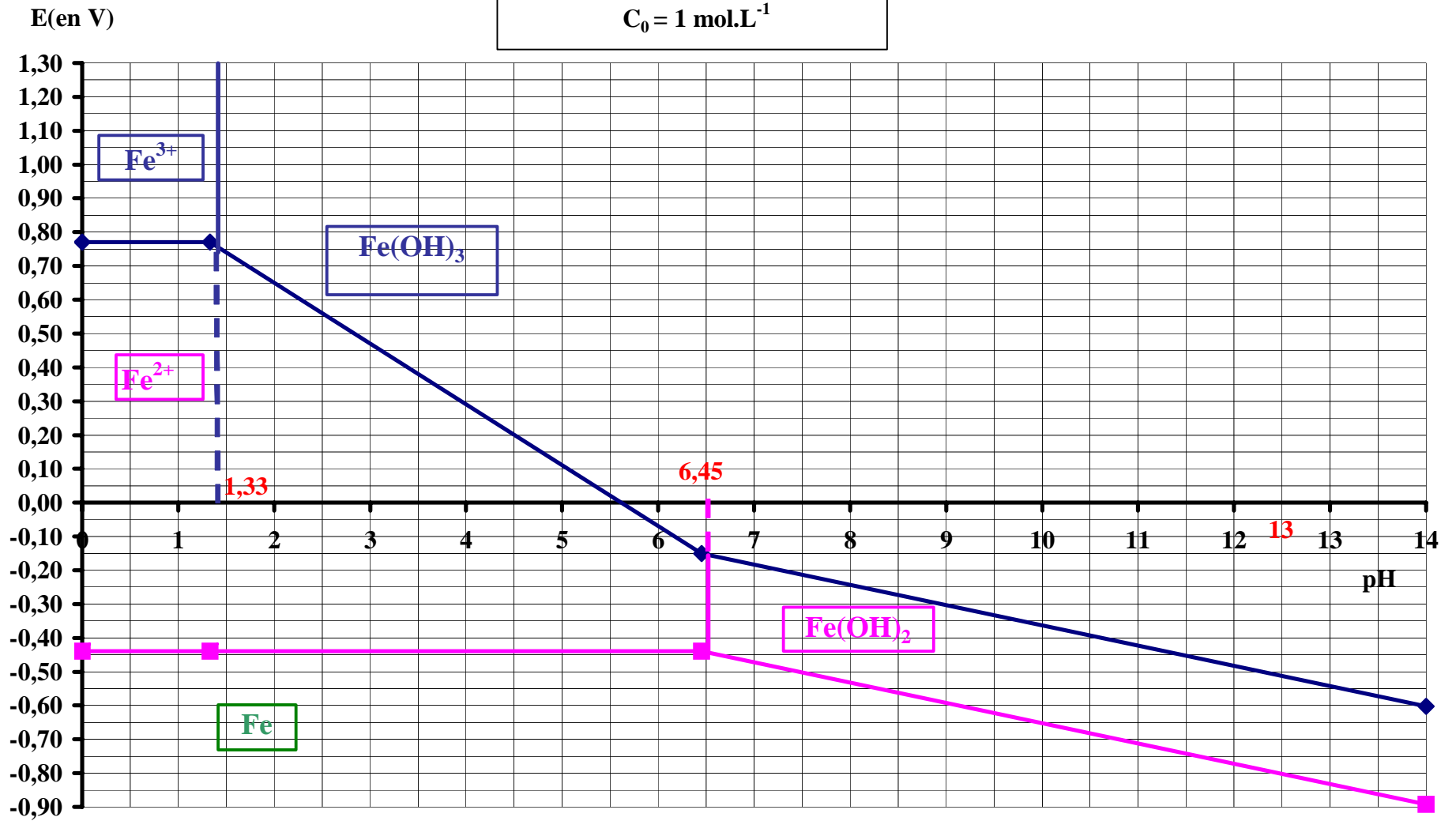


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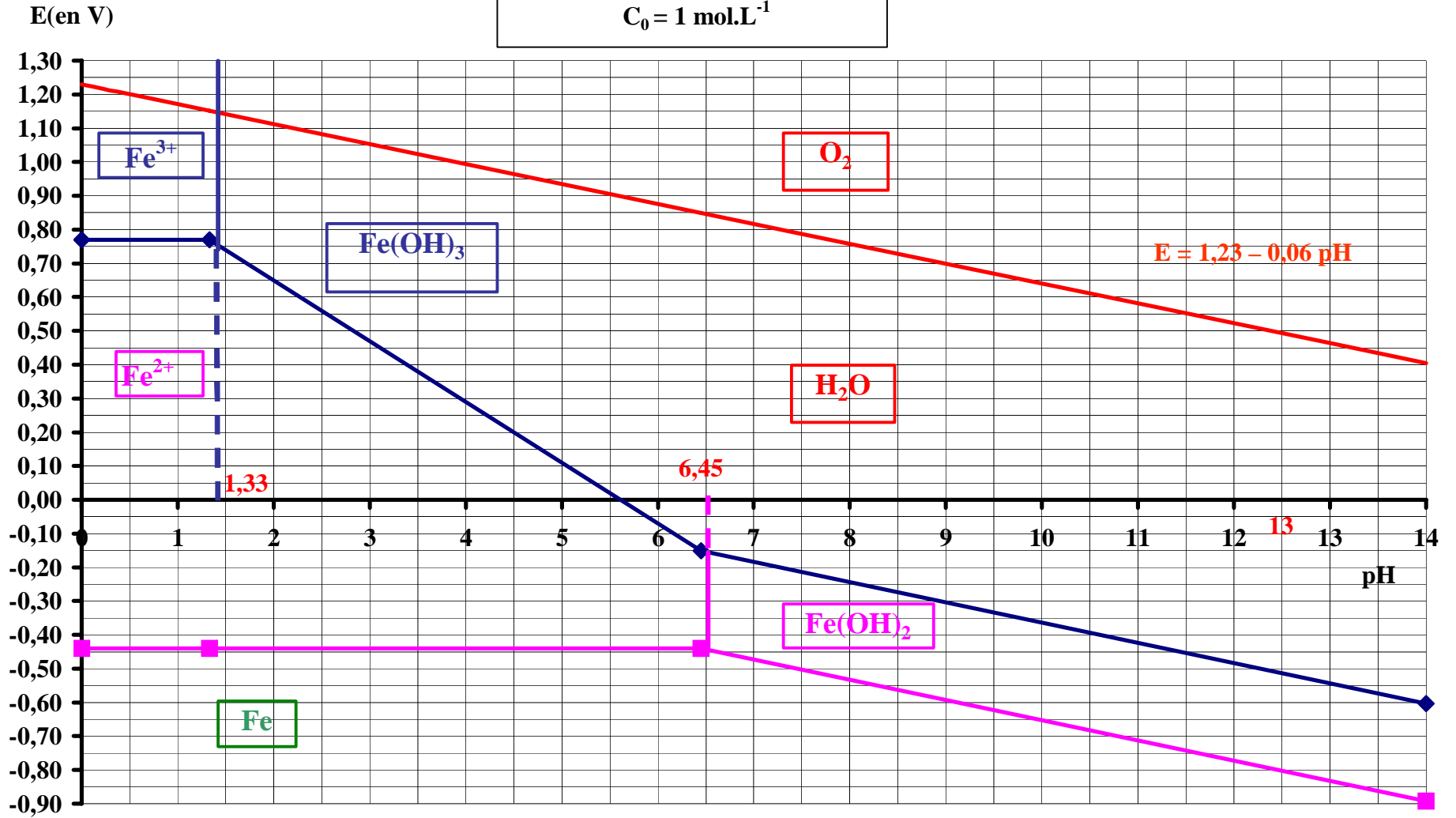
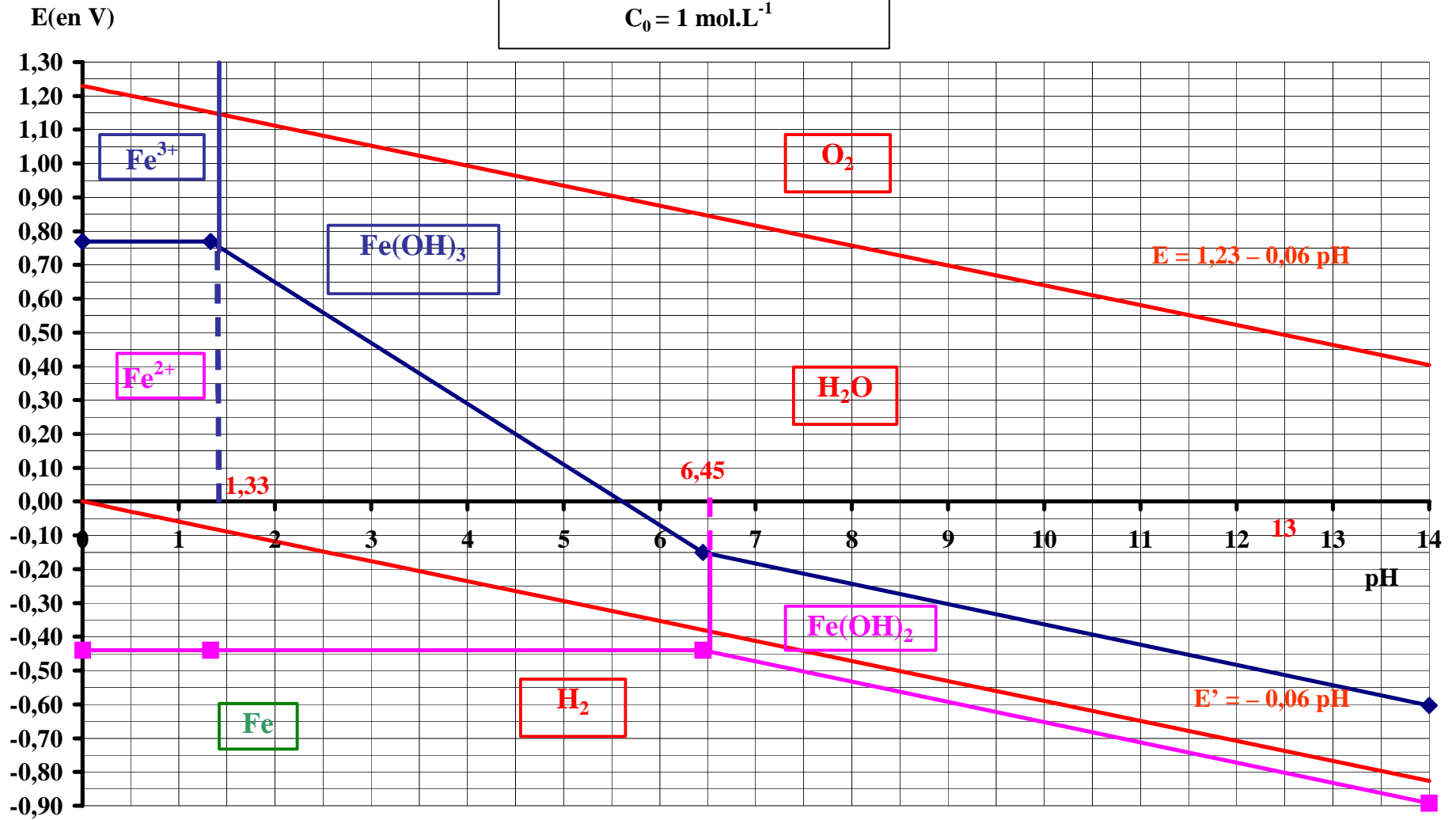
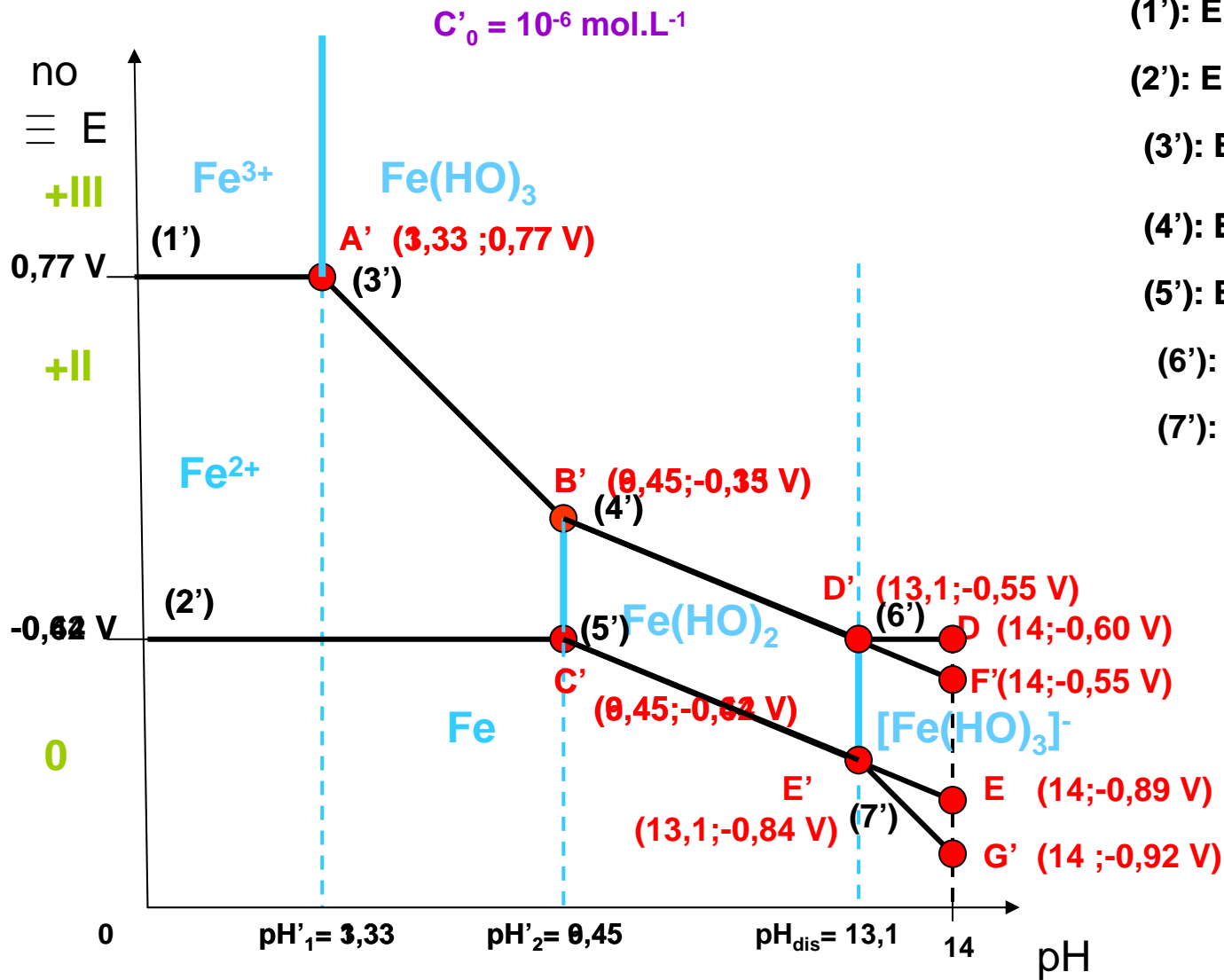


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- (1'):  $E'_1 = 0,77 \text{ V}$
- (2'):  $E'_2 = -0,62 \text{ V}$
- (3'):  $E'_3 = 1,07 - 0,18 \text{ pH}$
- (4'):  $E'_4 = 0,237 - 0,06 \text{ pH}$
- (5'):  $E'_5 = -0,053 - 0,06 \text{ pH}$
- (6'):  $E'_6 = -0,55 \text{ V}$
- (7'):  $E'_7 = 0,34 - 0,09 \text{ pH}$

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$C'_0 = 10^{-6} \text{ mol.L}^{-1}$

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- (3'):  $E'_3 = 1,37 - 0,18 \text{ pH}$
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- (5'):  $E'_5 = -0,053 - 0,06 \text{ pH}$
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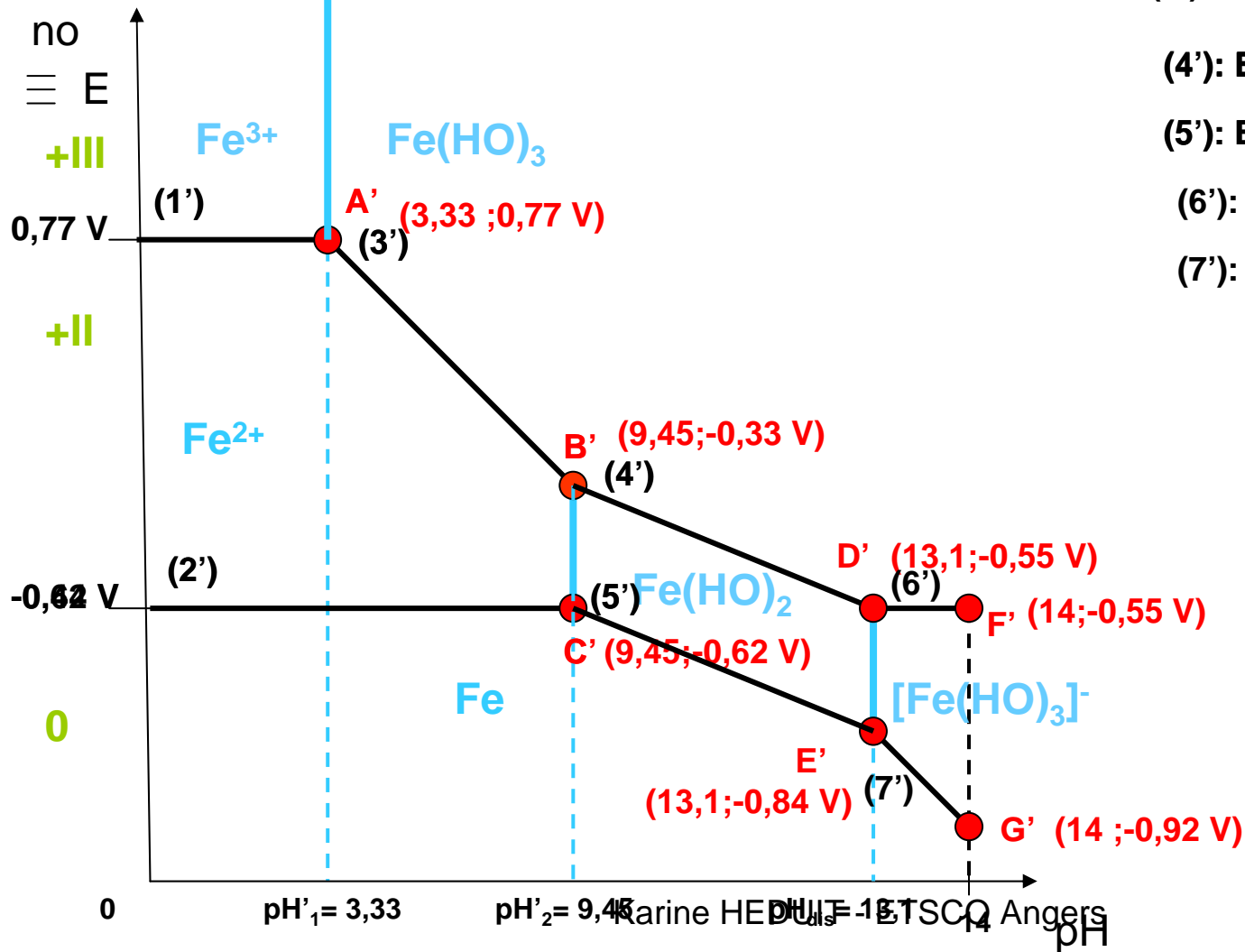


Diagramme potentiel-pH du fer  
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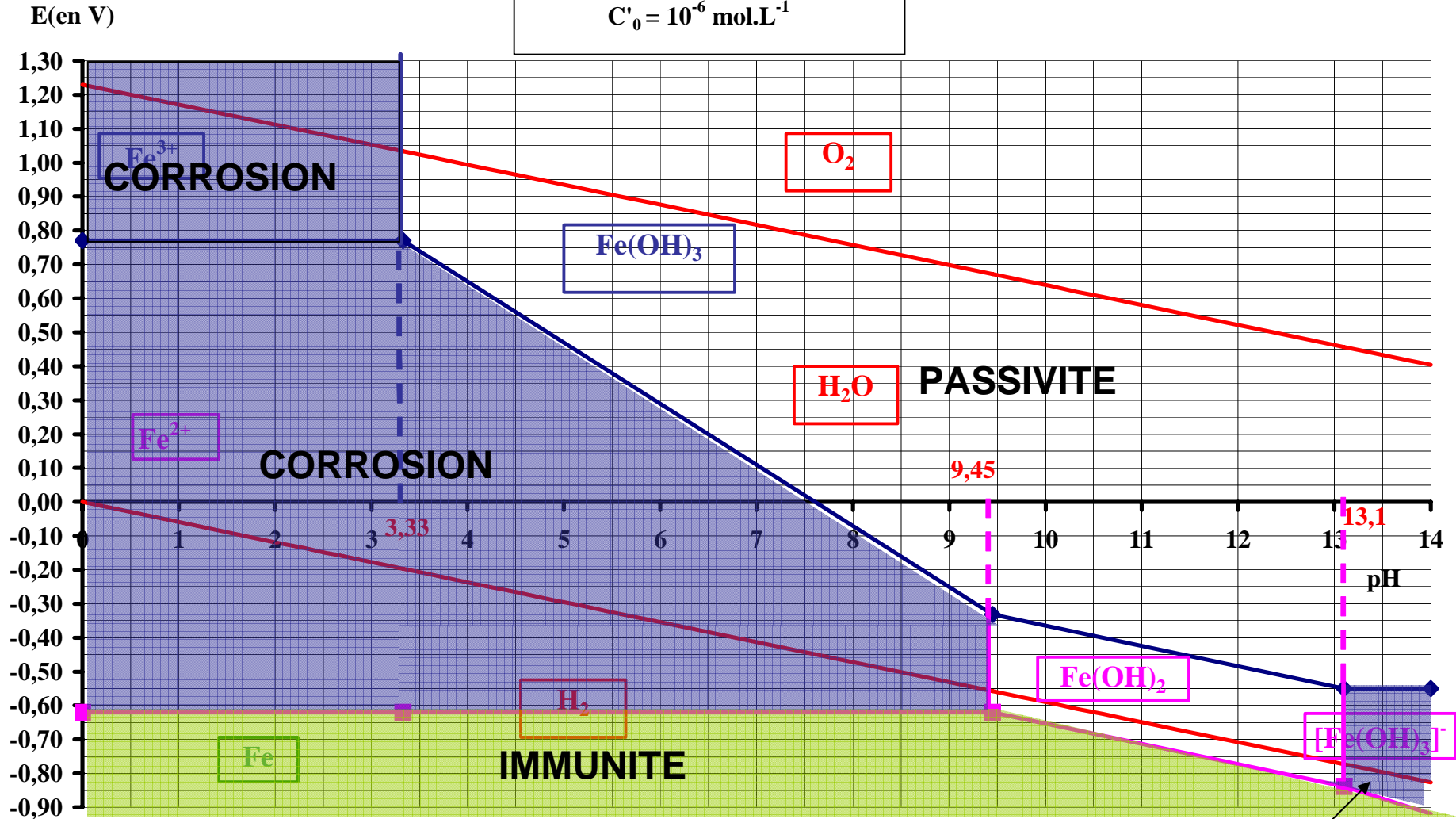


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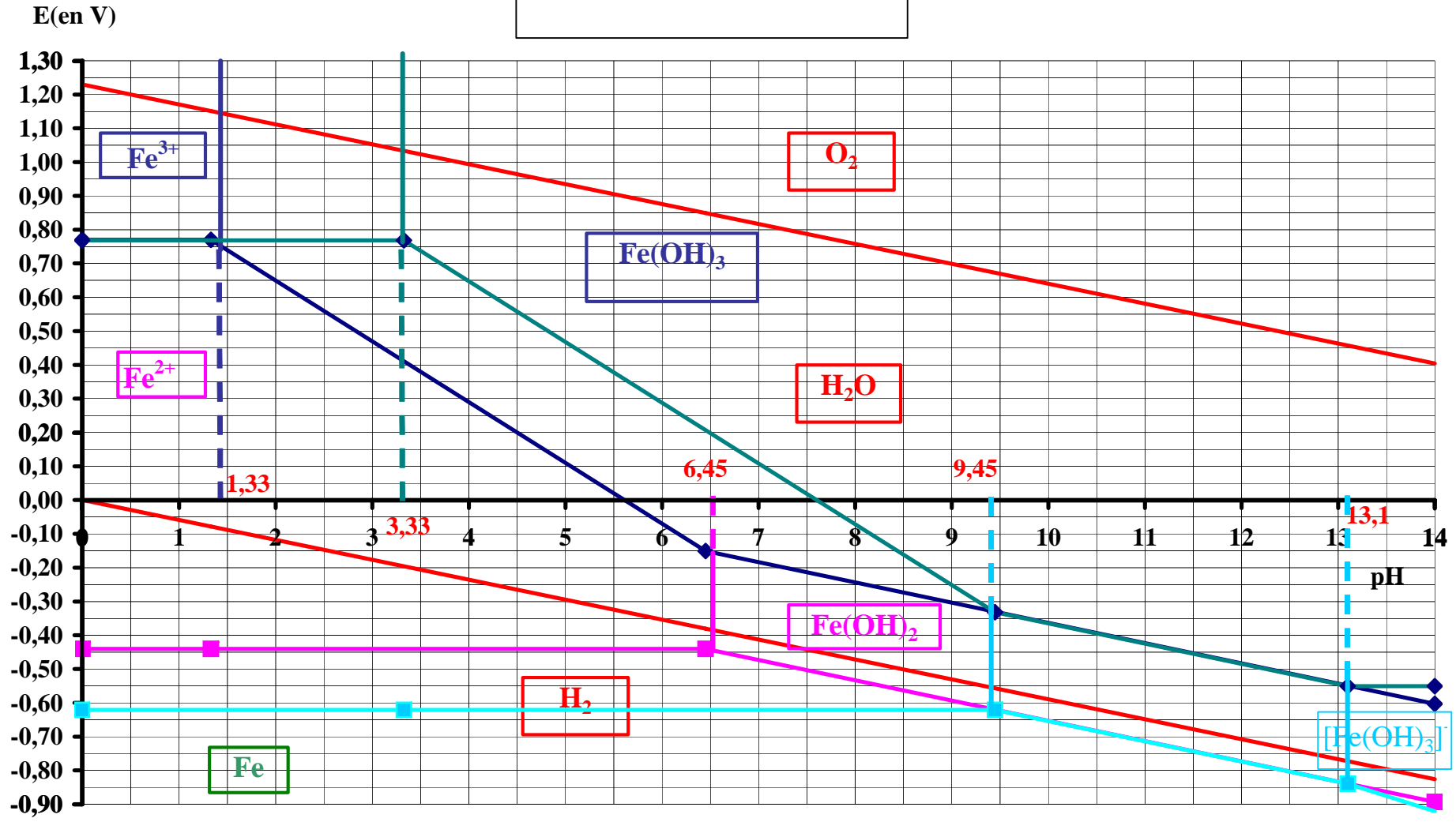


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