

Corrigendum to “Mass spectrometric measurements of the silica activity in the Yb₂O₃-SiO₂ system and implications to assess the degradation of silicate-based coatings in combustion environments” [Journal of the European Ceramic Society 35 (2015) 4259-4267].

Gustavo Costa, 2/13/2018

The authors regret that errors appeared in the above manuscript.

The corrections that need to be made are highlighted in yellow in the thermodynamic cycle of Table 2. The enthalpies in reactions 2, 5 and 6 are negative. Now that the enthalpies in reactions 2, 5 and 6 are negative, the correct enthalpy of formation of Yb₂SiO₅ is 2774 ± 11 kJ mol⁻¹. Also, the correct element in the formula Y₂SiO₅ on the right side of equation 2 is Yb instead Y.

Table 2. Thermodynamic cycle used to calculate the enthalpy of formation of Yb₂SiO₅ at 298 K.

Reaction	ΔH (kJ mol ⁻¹)
(1) Yb ₂ O _{3(s, 1562 K)} + SiO _{2(s, 1562 K)} → Yb ₂ SiO _{5(s, 1562 K)}	-27 ± 2
(2) Yb ₂ SiO _{5(s, 1562 K)} → Y ₂ SiO _{5(s, 298 K)}	283 ± 3 [20]
(3) Yb ₂ O _{3(s, 298 K)} → Yb ₂ O _{3(s, 1562 K)}	165.2 ± 0.5 [19]
(4) SiO _{2(s, 298 K)} → SiO _{2(s, 1562 K)}	87.9 ± 0.5 [19]
(5) 2 Yb _(s, 298 K) + 3/2 O _{2(g, 298 K)} → Yb ₂ O _{3(s, 298 K)}	1809 ± 10 [21]
(6) Si _(s, 298 K) + O _{2(g, 298 K)} → SiO _{2(s, 298 K)}	908 ± 2 [21]
(7) 2 Yb _(s, 298 K) + Si _(s, 298 K) + 5/2 O _{2(g, 298 K)} → Yb ₂ SiO _{5(s, 298 K)}	-2714 ± 11
$\Delta H_7 = \Delta H_1 + \Delta H_2 + \Delta H_3 + \Delta H_4 + \Delta H_5 + \Delta H_6$	

After the corrections, the correct thermodynamic cycle is:

Table 2. Thermodynamic cycle used to calculate the enthalpy of formation of Yb₂SiO₅ at 298 K.

Reaction	ΔH (kJ mol ⁻¹)
(1) Yb ₂ O _{3(s, 1562 K)} + SiO _{2(s, 1562 K)} → Yb ₂ SiO _{5(s, 1562 K)}	-27 ± 2
(2) Yb ₂ SiO _{5(s, 1562 K)} → Yb ₂ SiO _{5(s, 298 K)}	-283 ± 3 [20]
(3) Yb ₂ O _{3(s, 298 K)} → Yb ₂ O _{3(s, 1562 K)}	165.2 ± 0.5 [19]
(4) SiO _{2(s, 298 K)} → SiO _{2(s, 1562 K)}	87.9 ± 0.5 [19]
(5) 2 Yb _(s, 298 K) + 3/2 O _{2(g, 298 K)} → Yb ₂ O _{3(s, 298 K)}	-1809 ± 10 [21]
(6) Si _(s, 298 K) + O _{2(g, 298 K)} → SiO _{2(s, 298 K)}	-908 ± 2 [21]
(7) 2 Yb _(s, 298 K) + Si _(s, 298 K) + 5/2 O _{2(g, 298 K)} → Yb ₂ SiO _{5(s, 298 K)}	-2774 ± 11
$\Delta H_7 = \Delta H_1 + \Delta H_2 + \Delta H_3 + \Delta H_4 + \Delta H_5 + \Delta H_6$	

The authors would like to apologize for any inconvenience caused.