Erratum
"Ion Interaction Approach: Pressure Effect on the Solubility of Some Minerals in Submarine Brines and Seawater," published in *J. Solution Chem. 28*, 667–692 (1999)

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The above article[1] was devoted to the estimation of mineral solubility in the deep waters of several natural brines using the Pitzer volumetric ion-interaction parameters. The solubilities of several evaporite minerals were determined as a function of pressure (depth) of up to 1000 bars for very saline natural water bodies. The degrees of saturation of minerals such as halite (NaCl), anhydrite ($CaSO_4$), gypsum ($CaSO_4 \cdot 2H_2O$), celestite ($SrSO_4$), and barite ($BaSO_4$) were calculated for the Orca Basin (Gulf of Mexico), the Tyro and Bannock II depressions (the Mediterranean Sea) *in situ* depths in comparison with average oceanic water.

Recently, Dr. Giles M. Marion from the Earth and Ecosystem Sciences, Desert Research Institute, Reno, has drawn our attention to some differences between our calculations and his. We have checked our calculations, and found an arithmetic error in the calculation of $\gamma_{\pm,p}/\gamma_{\pm,p^\circ}$ and consequently $\Omega_p/\Omega_{p^\circ}$ for 1:2 and 2:1 electrolytes. Thus, all our results and conclusions obtained in the discussed paper for the solubility of 1:1 electrolytes NaCl, $CaSO_4$, $CaSO_4 \cdot 2H_2O$, $BaSO_4$, and $SrSO_4$ in natural waters, are valid and were not affected by the error. The error for 1:2 and 2:1 electrolytes increases with solution concentrations and depth (pressure) reaching for $\gamma_{\pm,p}/\gamma_{\pm,p^\circ}$ values of ca. 5% for 0.7 m K_2SO_4 and ca. 7% for 5.0 m $MgCl_2$ at 1000 bars, while for $\Omega_p/\Omega_{p^\circ}$ values were ca. 17 and ca. 23%, respectively. The corrected values of $\gamma_{\pm,p}/\gamma_{\pm,p^\circ}$ and $\Omega_p/\Omega_{p^\circ}$ for K_2SO_4 and $MgCl_2$ are given in Table I.

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Table I. Corrected Values of $K_{sp,p}/K^o_{sp,p}$, γ_p/γ^o_p and Ω_p/Ω^o_p at 25°C for K_2SO_4 and $MgCl_2$ Solutions

Parameters	Pressure (bar)[a]				
	1	100	300	700	1000
	K_2SO_4, 0.7 m				
$K_{sp,p}/K^o_{sp,p}$	1.000	1.144	1.496	2.558	3.827
γ_p/γ^o_p w/o Δk_s	1.000	1.012	1.035	1.080	1.113
γ_p/γ^o_p with Δk_s	1.000	1.011	1.033	1.068	1.087
Ω_p/Ω^o_p w/o Δk_s	1.000	0.905	0.741	0.492	0.360
Ω_p/Ω^o_p with Δk_s	1.000	0.905	0.736	0.476	0.336
	$MgCl_2$, 1.0 m				
$K_{sp,p}/K^o_{sp,p}$	1.000	1.114	1.382	2.127	2.939
γ_p/γ^o_p w/o Δk_s	1.000	1.007	1.020	1.045	1.061
γ_p/γ^o_p with Δk_s	1.000	1.007	1.019	1.039	1.049
Ω_p/Ω^o_p w/o Δk_s	1.000	0.917	0.769	0.536	0.406
Ω_p/Ω^o_p with Δk_s	1.000	0.917	0.767	0.527	0.393
	$MgCl_2$, 5.0 m				
$K_{sp,p}/K^o_{sp,p}$	1.000	1.114	1.382	2.127	2.939
γ_p/γ^o_p w/o Δk_s	1.000	1.015	1.046	1.104	1.146
γ_p/γ^o_p with Δk_s	1.000	1.015	1.042	1.085	1.107
Ω_p/Ω^o_p w/o Δk_s	1.000	0.940	0.828	0.633	0.512
Ω_p/Ω^o_p with Δk_s	1.000	0.939	0.820	0.601	0.461

[a] 1 bar = 0.1 MPa.

ACKNOWLEDGMENT

REFERENCE

1. B. S. Krumgalz, A. Starinsky, and K. Pitzer. *J. Solution Chem.* **28**, 667 (1999).