

COMPONENTS:		ORIGINAL MEASUREMENTS:			
1. Cobalt tellurite; CoTeO_3 ; [15851-44-2]		Ganelina, E.Sh.			
2. Sulfuric acid; H_2SO_4 ; [7664-93-9]		Zh. Priklad. Khim. 1967, 40, 1019-24;			
3. Water; H_2O ; [7732-18-5]		*J. Appl. Chem. USSR (Eng. Transl.) 1967, 40, 983-7.			
VARIABLES:		PREPARED BY:			
One temperature, probably 298 K pH varied.		Mary R. Masson			
EXPERIMENTAL VALUES:					
		Author		Compiler	
pH	$[\text{Co}^{2+}] \times 10^3$ mol dm ⁻³	$\alpha_{\text{L}}(\text{H})$	$K_{\text{SO}} \times 10^5$ mol ² dm ⁻⁶	$\alpha_{\text{L}}(\text{H})$	$K_{\text{SO}} \times 10^7$ mol ² dm ⁻⁶
6.4	25.0	22.7	2.8	2138	2.92
6.75	22.6	10.7	4.8	785	6.51
6.35	18.8	25.6	1.3	2490	1.42
7.0	8.0	6.9	0.92	408	1.57
Mean = 1.95×10^{-5}			Mean = 3.1×10^{-7} $pK_{\text{SO}} = 6.51$		
The results calculated by the author by using acid dissociation constants said to be from (1) are given, along with values calculated by the compiler using constants from (2), which should be more reliable.					
Note: $[\text{Te}_{\text{tot}}] = [\text{Co}^{2+}]$ and $[\text{TeO}_3^{2-}] = [\text{Te}_{\text{tot}}]/\alpha_{\text{L}}(\text{H})$					
The author does not give the temperature at which the investigations were done. The work on barium and lead tellurites was done at 25°C, and this work was probably done at this temperature also.					
AUXILIARY INFORMATION					
METHOD APPARATUS/PROCEDURE:			SOURCE AND PURITY OF MATERIALS:		
Cobalt tellurite was stirred with sulfuric acid solutions of various concentrations until equilibrium was established. The solution pH was measured by means of an LPU-01 instrument with a glass electrode. Cobalt in the filtrate was determined colorimetrically as the nitroso-R salt complex.			Cobalt tellurite was prepared by the exchange reaction between sodium tellurite and a cobalt salt. The precipitate was dried over H_2SO_4 and analysed for cobalt, tellurium, and water of crystallization.		
			ESTIMATED ERROR:		
			Error in K_{SO} (2s) = 4.8×10^{-7}		
			REFERENCES:		
			1. Blanc, E. J. Chem. Phys. 1920, 18, 40.		
			2. Masson, M.R. J. Inorg. Nucl. Chem. 1976 38, 545-8.		