

COMPONENTS: (1) Rubidium iodate; RbIO_3 ; [13446-76-9] (2) Water; H_2O ; [7732-18-5]	ORIGINAL MEASUREMENTS: Wheeler, H.L. <i>Am. J. Sci.</i> 1892, 44, 123-33.
VARIABLES: T/K = 296	PREPARED BY: Hiroshi Miyamoto
EXPERIMENTAL VALUES: <p style="text-align: center;">The solubility of RbIO_3 in water was given as</p> <p style="text-align: center;">100 parts of water dissolve 2.1 parts of RbIO_3.</p> <p style="text-align: center;">The compiler's conversions to mass % and mol kg^{-1} are:</p> <p style="text-align: center;">2.05 mass %</p> <p style="text-align: center;">0.0806 mol kg^{-1}</p>	
AUXILIARY INFORMATION	
METHOD/APPARATUS/PROCEDURE: No information was given.	SOURCE AND PURITY OF MATERIALS: Rubidium iodate was prepared by stoichiometric mixing of iodine pentoxide, in either strong or dilute aqueous solution, with a solution of rubidium carbonate. The precipitate, after vacuum filtering, was washed with a little water and dried on paper. Found: Rb 32.17; I 48.50; O 20.59. Calcd for RbIO_3 ; Rb 32.83, I 48.72, O 18.43.
ESTIMATED ERROR: Nothing specified.	
REFERENCES:	

COMPONENTS: (1) Rubidium iodate; RbIO_3 ; [13446-76-9] (2) Water; H_2O ; [7732-18-5]	ORIGINAL MEASUREMENTS: Barker, T.V. <i>J. Chem. Soc.</i> <u>1908</u> , 93, 15-6.
VARIABLES: T/K = 296	PREPARED BY: Hiroshi Miyamoto
EXPERIMENTAL VALUES: <p>The solubility of RbIO_3 in water at 23°C is given as follows:</p> <p style="text-align: center;">100 parts of water dissolve 2.1 parts of RbIO_3.</p> <p>This is equivalent to 0.081 mol kg^{-1} (compiler).</p> <p>The specific gravity of the saturated solution at 14°C was reported as 4.559.</p> <p>The compiler assumes that precipitation occurred upon cooling the saturated solution at 23°C to 14°C.</p>	
AUXILIARY INFORMATION	
METHOD/APPARATUS/PROCEDURE: The iodine content was estimated by the Carius method (the reference was not given in the original paper), but the compiler assumes that the total solubility was determined by evaporation and heating to constant mass. The heating was carried out in two operations lasting four hours: the first to 150°C, and the second to 250°C. The rubidium content was determined by the usual sulfate method. No other information was given in the original paper.	SOURCE AND PURITY OF MATERIALS: Rubidium iodate was prepared by adding aqueous HIO_3 solution to aqueous rubidium carbonate solution. Another method was also used to prepare rubidium iodate: a good yield was obtained by passing chlorine into a hot concentrated solution of a mixture of rubidium iodide and hydroxide. No other information given.
ESTIMATED ERROR: Nothing specified.	
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COMPONENTS: (1) Rubidium iodate; RbIO_3 ; [13446-76-9] (2) Water; H_2O ; [7732-18-5]	ORIGINAL MEASUREMENTS: Breusov, O.N.; Kashina, N.I.; Revzina, T.V.; Sobolevskaya, N.G. <i>Zh. Neorg. Khim.</i> 1967, 12, 2240-3; <i>Russ. J. Inorg. Chem. (Engl. Transl.)</i> 1967, 12, 1179-81.																																																							
VARIABLES: Temperature: 273.2 to 323.2 K	PREPARED BY: Hiroshi Miyamoto																																																							
EXPERIMENTAL VALUES: <table border="1" data-bbox="219 514 795 907"> <thead> <tr> <th rowspan="2">t/°C</th> <th colspan="3">Solubility of RbIO_3</th> </tr> <tr> <th>mass %</th> <th>mol %</th> <th>mol kg⁻¹ (compiler)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.06</td><td>0.0741</td><td>0.0411</td></tr> <tr><td>10</td><td>1.56</td><td>0.1053</td><td>0.0609</td></tr> <tr><td>20</td><td>2.11</td><td>0.149</td><td>0.0828</td></tr> <tr><td>25</td><td>2.41</td><td>0.171</td><td>0.0948</td></tr> <tr><td>30</td><td>2.71</td><td>0.193</td><td>0.107</td></tr> <tr><td>40</td><td>3.49</td><td>0.250</td><td>0.139</td></tr> <tr><td>50</td><td>4.37</td><td>0.315</td><td>0.176</td></tr> <tr><td>60</td><td>5.41</td><td>0.394</td><td>0.220</td></tr> <tr><td>70</td><td>6.48</td><td>0.477</td><td>0.266</td></tr> <tr><td>80</td><td>7.70</td><td>0.574</td><td>0.320</td></tr> <tr><td>90</td><td>9.00</td><td>0.680</td><td>0.380</td></tr> <tr><td>100</td><td>10.46</td><td>0.802</td><td>0.449</td></tr> </tbody> </table> <div data-bbox="960 554 1186 1048" style="text-align: right;"> </div> <p style="text-align: right;">High temp. apparatus</p>		t/°C	Solubility of RbIO_3			mass %	mol %	mol kg ⁻¹ (compiler)	0	1.06	0.0741	0.0411	10	1.56	0.1053	0.0609	20	2.11	0.149	0.0828	25	2.41	0.171	0.0948	30	2.71	0.193	0.107	40	3.49	0.250	0.139	50	4.37	0.315	0.176	60	5.41	0.394	0.220	70	6.48	0.477	0.266	80	7.70	0.574	0.320	90	9.00	0.680	0.380	100	10.46	0.802	0.449
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METHOD/APPARATUS/PROCEDURE: Isothermal method. Equilibrium reached in 4-5 h. From 90-100°C, soly detd in apparatus shown in figure. At equilibrium, the apparatus was tilted to allow satd sln to filter through connecting tube into weighed test tubes. The test tube was closed with a stopper, withdrawn, and weighed. Condensation on the walls of the apparatus and loss of water by evaporation was thus prevented. At the lower temperatures, ordinary soly vessels were used, and pipets with glass filters were used for sampling (no other details given). Above 50°C, the pipets were preheated in the thermostat. The iodate content was determined iodometrically.	SOURCE AND PURITY OF MATERIALS: Results of analysis of RbIO_3 : RbIO_3 content; 99.5 % Impurities, %, K 0.06; Cs 0.13; Na 0.016; SO_4 <0.05; Fe 0.005. ESTIMATED ERROR: Soly: nothing specified. Temp: precision ± 0.1 K.																																																							
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