COMPONENTS:	ORIGINAL MEASUREMENTS:
1. Sodium pyrosulfite; $Na_2S_2O_5$; [7681-57-4] 2. Water; H_2O; [7732-18-5]	Foerster, F.; Brosche, A.; Norberg-Schutz, Chr. *Z. Phys. Chem.* 1924, *10*, 435-96.
VARIABLES:	PREPARED BY:
Temperature: 263 - 370 K	Mary R. Masson

EXPERIMENTAL VALUES:

Temp.	$Na_2S_2O_5$ mass %	$Na_2S_2O_5$[a] mol/kg
0.0	37.47	3.152
0.0	37.36	3.137
6.0	37.60	3.170
8.6	38.65[b]	3.314
10.4	38.79	3.334
10.9	38.80	3.335
14.8	39.20	3.392
15.0	39.12	3.380
15.0	39.20	3.392
17.5	39.02	3.366
17.5	39.01	3.365
22.8	39.77	3.473
31.4	40.79	3.624
31.7	40.94	3.646
39.3	41.39	3.715
40.2	41.60	3.747
40.2	41.52	3.735
59.0	44.27	4.179
59.2	44.29	4.182
71.4	45.62	4.413
81.4	47.40	4.740
85.0	47.89	4.834
97.2	49.06	5.066

Solid phase: $Na_2S_2O_5$

[b] Result considered particularly reliable by the authors.

(continued on next page)

AUXILIARY INFORMATION

METHOD APPARATUS/PROCEDURE:

Solids were equilibrated with solution under a hydrogen atmosphere, in a vessel maintained in a thermostat. Samples for analyses were withdrawn through a tube plugged with cotton wool.

Samples were reacted with an excess of standard iodine solution, and the excess was back-titrated with thiosulfate.

A Beckman apparatus was used for the determination of freezing points (1).

SOURCE AND PURITY OF MATERIALS:

A 30% solution of sodium hydroxide or a hot saturated soda solution was saturated with sulfur dioxide. This solution was allowed to cool to not lower than 25°C; crystals of $Na_2S_2O_5$ were obtained.

(Below 25°C, a hydrate containing less than 1 water molecule is formed.)

ESTIMATED ERROR:

Temperature: ±0.1 K
Analyses: no accurate estimate possible.

REFERENCES:

1. Ostwald, W.; Luther, R. *Hand-und Hilfsbuch zur Ausfuhrung physicochemischer Messungen* 5th Ed., Akademische Verlag., Leipzig, 1931.

COMPONENTS:	ORIGINAL MEASUREMENTS:
1. Sodium pyrosulfite; $Na_2S_2O_5$; [7681-57-4]	Foerster, F.; Brosche, A.; Norberg-Schutz, Chr.
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EXPERIMENTAL VALUES (continued)):

Temp.	$Na_2S_2O_5$ mass %	$Na_2S_2O_5$[a] mol/kg	
-8.5	24.75	1.730	
-6.3	26.22*	1.869	
-4.2	28.10*	2.056	
-3.65	28.75	2.123	
-3.0	29.45	2.196	
-2.2	30.25*	2.281	
-2.0	30.45	2.303	
-1.0	31.75	2.447	
-0.7	32.45	2.527	
-0.2	32.50	2.533	
0.0	32.90	2.579	Solid phase: $Na_2S_2O_5.6H_2O$
0.2	33.10	2.603	
1.3	34.10	2.722	
1.4	34.30	2.746	
1.8	35.40	2.883	
1.8	35.45	2.889	
2.1	35.95	2.953	
2.4	36.35	3.004	
2.8	35.90	2.946	
3.0	37.10	3.103	
3.5	37.45	3.150	
3.5	37.95	3.127	
4.0	38.20	3.252	
-9.3	23.45	1.611	
-9.0	23.77	1.640	
-7.9	24.20	1.679	
-7.5	24.50	1.707	Solid phase: $Na_2S_2O_5.7H_2O$
-5.0	26.15	1.863	
0.0	31.10	2.374	
0.0	31.45	2.413	
+1.2	32.45*	2.527	
-0.56	1.435	0.0766	
-1.18	3.275	0.178	
-2.28	6.40	0.360	
-3.19	9.00	0.520	
-1.35	3.75	0.205	Solid phase: ice
-2.82	8.00	0.457	
-5.24	14.64	0.902	
-6.81	18.50	1.194	
-7.84	20.92	1.392	
-9.7	24.73	1.728	

[a] Molalities calculated by the compiler.