

As ARSENIC

0 ARSENIC TRIOXIDE As_2O_3

SOLUBILITY IN WATER (Anderson and Story, 1923)

Data in excellent agreement with these are given by Garrett, Holmes and Laube (1940) at 25°, Jozefowicz, Witekowa, and Zubranska (1950) at 25°, Schreinemakers and de Baat (1915) at 20° and 30°, De Carli (1932) at 20°, Bruner and St. Tolloczko (1903), and Chodounsky (1888) at 2°, 15°, 25° and 39.8°. The values of Ragg (1950) at 18° and Wood (1908) at 15° are too low, and that of Schnellbach and Rosin (1929) at 25° too high. For data on different modifications of As_2O_3 , see below.

t°	Gms. As_2O_3 per 100 gms. H_2O	t°	Gms. As_2O_3 per 100 gms. H_2O
0	1.21	39.8	2.93
2	1.20*	48.2	3.43
15	1.66	62	4.45
20	1.81†	75	5.62
25	2.05	98.5	8.18
30	2.31**		

*Bruner and St. Tolloczko, 1903;

†De Carli, 1932;

**Schreinemakers and de Baat, 1915.

An "amorphous" modification has been reported by Winkler (1885), who gives its solubility as 3.7 gms. per 100 cc H_2O at ordinary temperatures, and 11.86 gms. at the boiling point. Margulis (1947), and Margulis and Gane (1947) extracted As_2O_3 with water and found that their results could be explained on the existence of two forms of As_2O_3 existing in the sample. The amount extracted depended upon the number of previous extractions and the amount of solid at the start.

SOLUBILITY OF ARSENIC TRIOXIDE IN ACID SOLUTIONS (Ghiron and Mangili, 1935; Garrett, Holmes and Laube, 1940)

These authors agree reasonably well on the solubility of As_2O_3 in HCl solutions. The results of Wood (1908) at 25° are too low.

Data of Ghiron and Mangili:

t°	Mols. Acid per liter	Gms. As_2O_3 per 100 gms. sat. solution in aq. sol. of:				
		H_3AsO_4	H_3PO_4	H_2SO_4	HCl	$HClO_4$
25	1.0	1.62	1.62	1.55	1.83	1.71
"	5.0	1.10	0.94	0.54	...	0.43
"	7.5	1.23	0.63	0.25	5.02	0.18
60	1.0	3.50	3.50	3.26	3.64	3.47
"	5.0	2.63	2.09	1.190
"	7.5	2.10	1.57	0.78	15.43	0.42
98-90°	1.0	8.45	8.46	7.27	...	6.69
"	5.0	5.08	4.51	2.62	...	1.88
"	7.5	4.36	3.02	1.48	25.92	0.84