According to Thomsen[7] the value of ΔH for this reaction is —13,200 cal. for 1 Au_2O_3 (Aq.) whence $\Delta S_{298} = (\Delta H - \Delta F)/T = (-13{,}200 - 19{,}100)/298 = -108.4$ cal./mol./degree.

The writers wish to express their appreciation to Professor G. N. Lewis, who suggested this investigation.

Summary

1. Measurements have been made on the cell: $H_2(g)$, H_2SO_4(x-M), $Au_2O_3(s)$, Au(s), at three concentrations of sulfuric acid and at 25°. The electromotive force is seen to be substantially independent of concentration of sulfuric acid, the general average value being 1.364 ± 0.001 volts.

2. The free energy of formation of auric oxide from its elements, its dissociation pressure, and entropy of formation at 298° Å. are calculated, all of which indicate that auric oxide is a very unstable compound.

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NOTES

Confirmatory Test for Aluminum.—The test suggested is a modification of that proposed by Attack.[1] It has the advantage that the reagent need not be freshly prepared each time. Further, the color absorption is greater.

The reagent consists of a saturated solution of alizarin in concd. acetic acid.

After separating the aluminum hydroxide from any chromium and zinc, it is washed, dissolved in hydrochloric acid and then reprecipitated with a slight excess of ammonium hydroxide. To this solution is added one drop of the alizarin reagent which imparts an apple-blossom pink coloration to the aluminum hydroxide. The latter will soon settle out, leaving the solution above colorless.

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Plastic Films and the Drop-Weight Method of Interfacial Tension Measurement.—The drop-weight method of measuring surface and interfacial tensions has in recent years been greatly refined by Harkins and his co-workers.[1] Not only have they improved the apparatus in a

[7] Thomsen, "Thermochemistry," Longmans, **1908**, p. 201.

[1] Attack, *Chem. Zentr.*, [1] **82**, 176 (1916).

[1] Harkins and Brown, THIS JOURNAL, **41**, 499 (1919).