

chlorine set free; in the slow decomposition of barium chlorate, the amount of free chlorine is less than one-thousandth of the chlorine in the salt. With lead chlorate the decomposition-products are lead chloride, lead peroxide, oxygen and chlorine; about eighty-seven percent of the chlorine is set free.

W. D. B.

The persulphuric acids. *T. M. Lowry and J. H. West. Jour. Chem. Soc. 77, 950 (1900).* — The authors have determined the amount of persulphuric acid formed when hydrogen peroxide is added to sulphuric acids of varying concentrations. If we assume that the mass law applies, without corrections for electrolytic dissociation, the results point to the existence of pertetrasulphuric acid, $\text{H}_2\text{S}_4\text{O}_{14}$.

W. D. B.

The reducing action of calcium carbide. *Geelmuyden. Comptes rendus, 130, 1026 (1900).* — At the temperature of the electric furnace, calcium carbide reduces iron pyrites, galena, magnesium sulphide, and antimony sulphide to the metal; aluminum sulphide is not reduced; boric anhydride is converted into calcium boride.

W. D. B.

Preparation of the phosphides of iron, nickel, cobalt, and chromium. *J. Maronneau. Comptes rendus, 130, 657 (1900).* — The phosphides of iron, nickel, cobalt, and chromium have been prepared by heating the metal in question in the electric furnace together with the phosphide of copper.

W. D. B.

The separation of the rare earths. *R. Chavastelon. Comptes rendus, 130, 781 (1900).* — The author precipitates everything except thorium by means of an alkaline sulphite, or else he gets the thorium and cerium alone in solution by the action of bicarbonates on the mixed oxides.

W. D. B.

A new method of fractioning some of the rare earths. *E. Demarçay. Comptes rendus, 130, 1019 (1900).* — The method consists in the fractional crystallization of the double magnesium nitrates in nitric acid.

W. D. B.

Velocities

On the velocity of solidification and viscosity of supercooled liquids. *H. A. Wilson. Phil. Mag. [5] 50, 238 (1900).* — Considering the expression which the author previously obtained to represent the velocity of solidification (3, 423), if F , the latent heat of fusion of one gram of the solid, a , the thickness of the surface of separation of liquid and solid, and A , the force required to give unit velocity to one gram of the liquid diffusing through itself, be all regarded as constant, then

$$v = C \frac{S}{V},$$

where C is a constant, S is the actual supercooling, and V is the viscosity of the liquid.

The present paper contains experimental data taken to test this formula. The substances chosen were salol, benzoic anhydride, benzophenone, and azobenzene. The results show that the velocity of solidification of a pure substance varies directly as the actual supercooling at which solidification occurs, and inversely as the viscosity of the liquid.

H. T. B.