

oxide has been measured at 650 mm. and at various temperatures.

2. Copper, when dispersed in calcium oxide, is a better adsorbent for hydrogen than is the pure copper.

3. In general the activated adsorption of hydrogen on calcium oxide and on copper dispersed

in calcium oxide resembles the adsorption of hydrogen on magnesia and on copper dispersed in magnesia.

4. An equation has been suggested, the use of which permits the more uniform treatment of the data for copper dispersed in oxides.

SALT LAKE CITY, UTAH

RECEIVED AUGUST 21, 1939

## NOTES

### Note on the Dipole Moment of 1-Chloroanthraquinone

BY ERNST BERGMANN AND ANNA WEIZMANN

In connection with a stereochemical investigation in the series of anthracene dichlorides, we

to calculate the electric moment, instead of extrapolating to infinite dilution, which would have given even a slightly higher figure.

The *significance* of figures in the tables is as in previous communications.

$\tau$	$\rho$	$\epsilon$	$n^2$	$P^{1/2}$	$P_E^{1/2}$	$P$	$P_E$	$P_{A+O}$
Dioxane solution; $t = 24.2^\circ$								
0	1.0276	2.2553	2.0135	25.2628	21.6250	....	...	...
0.00906	1.0350	2.3200	2.0278	26.3919	22.0405	149.91	67.51	82.40
.01566	1.0404	2.3562	2.0392	27.0544	22.3584	139.62	68.43	71.19
.01739	1.0418	2.3645	2.0415	27.2100	22.4300	137.23	67.90	69.31
$P_{A+O}^\infty = 74.30; \mu = 1.9 D$								
Benzene solution: $t = 24.6^\circ$								
0	0.8732	2.2747	2.2404	26.6302	26.1288	....	...	...
0.00914	.8832	2.3220	2.2506	27.5327	26.4831	124.69	64.88	59.81
.01282	.8872	2.3468	2.2570	27.9744	26.6447	131.06	66.39	64.67
.01817	.8930	2.3923	2.2627	28.7420	26.8606	142.53	66.40	76.13
$P_{A+O}^\infty = 66.87; \mu = 1.8 D$								

reported, a short time ago,<sup>1</sup> some figures on the dipole moment of chloroanthraquinone, which we calculated to 1.9  $D$ . Fischer and Rogowski<sup>2</sup> arrived recently at lower figures of 1.53 (in benzene) and 1.55 (in dioxane), respectively. Although without influence on the general results put forward in our paper, we have reinvestigated 1-chloroanthraquinone both in benzene and again in dioxane solution and have found 1.8 and 1.9  $D$ , respectively. Following the procedure of the German authors, we have taken the average of the (atomic and) orientation polarization in order

(1) E. Bergmann and A. Weizmann, *THIS JOURNAL*, **60**, 1801 (1938).

(2) Fischer and Rogowski, *Physik. Z.*, **40**, 331 (1939).

THE DANIEL SIEFF RESEARCH INSTITUTE  
REHOVOTH, PALESTINE

RECEIVED JULY 5, 1939

### The Optical Activity of $\alpha$ -Bromopropionitrile

BY KENNETH L. BERRY AND JULIAN M. STURTEVANT

In connection with recent physical theories of optical rotatory power,<sup>1,2</sup> it would be of interest to know the optical properties of one or more compounds of simple, fixed structure, *i. e.*, compounds containing one asymmetric carbon atom substituted by four groups having optical axes of symmetry parallel with the valence bonds to the asymmetric carbon atom.

(1) Kirkwood, *J. Chem. Phys.*, **5**, 479 (1937).

(2) Condon, Altar and Eyring, *ibid.*, **5**, 753 (1937).