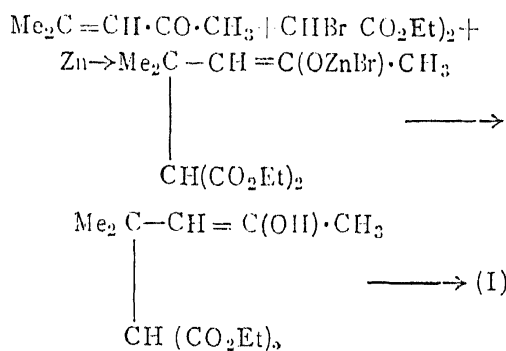


as follows. First of all two molecules of acetone condense to form mesityl oxide. Afterwards, in analogy with the observations of Kohler *et al.*,⁶ the zinc compound of ethyl bromomalonate adds on to it in 1:4-positions leading to the formation of (I) as under.



The full paper will be published elsewhere.

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¹ Reformatsky, *J.R.C.S.*, 1890, **22**, 49; *British Chemical Abstracts*, 1891, **60**, 169.

² W. H. Perkin, *J.C.S.*, 1896, **69**, 1482.

³ Vorländer, *Annalen*, 1897, **294**, 300.

⁴ —, and Erig, *Ibid.*, 1897, **294**, 314.

⁵ Qudrat-i-khuda, *J.C.S.*, 1929, 201.

⁶ Kohler, Heritage and Macleod, *Amer. Chem. J.*, 1911, **46**, 217.

Magnetic Susceptibilities of Some Fluorides

THE susceptibilities of fluorides of Li, Na, S, K, Ca, Mn, Co, Ni, Ge, Se, Rb, Sr, Mo, Te, Cs, Ba, W, Tl, Pb, U, Ce and Nd have been already studied by various investigators.^{1,2}

Susceptibilities of fluorides of Mg, Al, Cd, Cr, Fe, Cu, Zn, Ce, Hg, Bi and fluoride of KBe have now been determined by me using the usual Gouy method.

The electromagnet was constructed in our laboratory. It gives a maximum field of 13,000 Gauss at 22 Amp. and 110 volts with an air gap of 1.0 cm. All the salts except MgF_2 (Kahlbaum, Berlin), KBeF_2 and FeF_3 (Chemische Fabric, Gorlitz), were prepared by British Drug House, London. They were packed in thin glass tubes

and the mass susceptibilities were calculated by the usual formula,

$$F_A = \frac{1}{2}A(K_1 - K_2)(H_1^2 - H_2^2)$$

where A is the area of cross-section of the specimen, F_A is the magnitude of the force on the specimen, K_1 and K_2 the volume susceptibilities of the specimen and the medium respectively, and H_1 and H_2 the fields at the lower and upper ends of the specimen. (Volume Susceptibility = Density \times Mass Susceptibility.)

The results after applying various corrections are as follows:—

| Salt | Temperature | Mass Susceptibility $\times 10^6$ |
|----------------------|-------------|---|
| | °C. | |
| MgF_2 | .. 28.0 | + 0.40 |
| AlF_3 | .. 29.2 | -- 0.16 |
| CdF_2 | .. 29.0 | -- 0.25 |
| CrF_3 | .. 32.0 | + 91.20 |
| FeF_3 | .. 32.0 | + 122.00 |
| CuF_2 | .. 32.2 | + 23.00 |
| ZnF_2 | .. 26.6 | -- 0.37 |
| CeF_3 | .. 29.0 | + 10.90 |
| | | (standard value ³ = 11.10 at 20° C.) |
| BiF_3 | .. 29.8 | -- 0.23 |
| HgF_2 (oxy) | .. 29.0 | -- 0.26 |
| HgF_2 (ous) | .. 29.0 | -- 0.24 |
| KBeF_2 | .. 28.6 | -- 0.60 |

Detailed account will be published elsewhere.

I am grateful to Mr. U. Durrani, Superintendent, Technical Institute, Muslim University, Aligarh, for his kind help in constructing the electromagnet and helpful discussions.

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November 30, 1939.

¹ *A.T.C.*, Paris, 1937, **8**, 23—2.

Ibid., 1937, **17**, 23—6.

² Landolt's Bornstein, *Tables of Constants*, Springer, Berlin, 1923, **2**, 1198; 1936, **3**, 2180.

³ —, *Ibid.*, 1936, **3**, 2181.