

The extra electrons of the formulas (Fig. 1) are therefore not the "extra" or "loose" electrons of the nuclues. The correct values of these are given in another paper (*Phys. Rev.*, **38**, 1280-1282 (1931)).

It may be supposed that in the building up of complex atomic nuclei the following particles may attach themselves to an atomic nucleus provided they penetrate its potential wall: protons, electrons, neutrons if they exist, p_{2e} particles and alpha particles.

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CRYSTALLIZATION VELOCITIES

Sir:

Although it has long been known that the rate of crystallization from supercooled melts is greatly dependent on the particular compound used, the effect of molecular symmetry has not been investigated up to the present time. If there is such an effect, it should be most easily discoverable with organic compounds, whose structures may be postulated from x-ray and dipole moment measurements.

Recent measurements here on the linear crystallization velocity indicate that the symmetry of the molecule largely determines the rate of transition from liquid to solid. The maximum linear velocities of the most illustrative examples so far measured are tabulated.

MAXIMUM LINEAR VELOCITIES

Compound	Rate in mm. per minute	Melting point, °C.	Supercooling, °C.
<i>o</i> -Dichlorobenzene	2,200	-17.6	25
<i>m</i> -Dichlorobenzene	700	-24.8	25
<i>p</i> -Dichlorobenzene	20,000	52.9	25
1,2,4-Trichlorobenzene	25	17	25
1,3,5-Trichlorobenzene	7,500	63.4	26
1,1,2-Triphenylethane	Less than 1	54.0	50
1,1,1-Triphenylethane	77	94.8	33
1,2-Diphenylethane	700	51.2	34
1,1-Diphenylethylene	16	8.2	25
Diphenylmethane	530	25.1	27
Triphenylmethane	27	93.6	29

In view of the recent revival of interest in the subject of crystallization, this preliminary report is being given at this time to avoid possible wasteful duplication. It is planned to discuss the complete results in a paper later.

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