

Chemistry. — *Thixotropy of suspensions in apolar liquids.* (Preliminary Communication.) By H. R. KRUYT and F. G. VAN SELMS.

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FREUNDLICH and RÖDER¹⁾ have made the interesting observation that suspensions of rice starch or quartz, which in water give systems that may be considered Newtonian liquids, occasion spontaneous thixotropy (so-called "false body") in CCl₄, cyclohexane respectively. One of us²⁾ has attached theoretical consequences to this observation which affect not only the theory of thixotropy, but also the theory of gelatination generally.

In order to test and extend this course of thought an extensive investigation is being made, following a method different from RÖDER's, which has revealed facts that for the present throw a different light on the observations mentioned. It appears that thixotropy does, indeed, occur when starch is suspended in air dry condition (that is with a moisture percentage of ca. 12 %) in CCl₄, but that the phenomenon is *practically absent* when the starch is first dried in a vacuum dessiccator over chloride of calcium. In the same way suspensions of finely divided quartz *do not show thixotropy* in CCl₄ when this material has first been dehydrated during 1½ hours at ca. 360°.

Hence the explanation given so-far for the remarkable phenomenon of suspensions in an apolar medium is in need of revision. The presence of water in the phase boundary of, for instance quartz — CCl₄, apparently plays an all-important part. One is even inclined to think that it is not the apolarity of the organic liquid that causes the phenomenon but its "un-mixing" with water.

Although the investigations are as yet only in the initial stage, and we hope to return to this problem more extensively at a later date, we considered these facts of such importance for the theory of thixotropy and gelatination, as to justify the immediate publication of this experience.

VAN 'T HOFF-*Laboratorium.*

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¹⁾ H. FREUNDLICH and H. L. RÖDER, *Trans. Faraday Soc.* **34**, 308 (1938).

²⁾ H. R. KRUYT, *Chimie et Industrie* **42**, 587 (1939).