

## A New Assignment of the Infrared Absorption of Aluminium Hydroxide Disoap

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The I.R.-absorption of aluminium hydroxide disoap has previously been investigated on soaps precipitated from water solution by Bauer *et al.*<sup>1,2</sup> and on

the OH-group and the aluminium atom. Hydrolysis with D<sub>2</sub>O gave absorption at 3.7  $\mu\text{m}$  due to the OD-group and at 6.3  $\mu\text{m}$  due to the COO<sup>-</sup>-group. But in this case the absorption at 10.15  $\mu\text{m}$  was replaced by one at 13.0  $\mu\text{m}$ . (Fig. 1).

These results give evidence that this absorption cannot exclusively be due to AlO-vibrations and point to an absorption of the bending vibrations of the hydroxide group. Some coupling between these vibrations and the AlO-vibrations is probable.

A more complete report later will give the experimental details and also a more comprehensive discussion of the results.

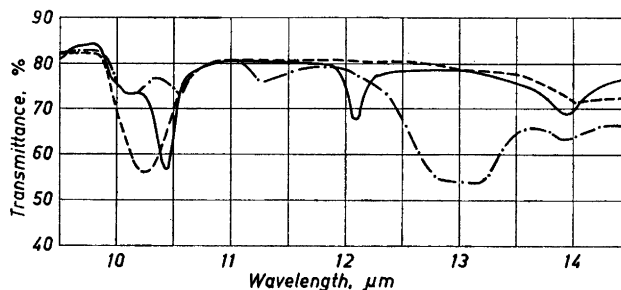
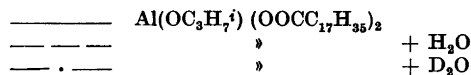


Fig. 1. Infrared spectra of aluminium disoaps in benzene.



soaps formed by the reaction of trimethyl aluminium and fatty acids by Sheffer *et al.*<sup>3</sup>

In the present investigation aluminium hydroxide distearate was prepared in the following way. The alkoxide distearate was prepared according to Mehrotra<sup>4</sup> and hydrolyzed to hydroxide disoap. All operations were performed in an atmosphere of nitrogen.

The hydrolysis using only water gave spectra analogous to those published earlier and showed the OH-group absorption at 2.7  $\mu\text{m}$ , the COO<sup>-</sup>-group absorption at 6.3  $\mu\text{m}$  and one absorption at 10.15  $\mu\text{m}$ , which earlier was believed to be due to vibrations between the oxygen atom of

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