

Fig. 1. Infra-red absorption spectra of 'Nujol' in a capillary film on sodium chloride windows and of polyethylene film in two layers each of 0.002 in. thick

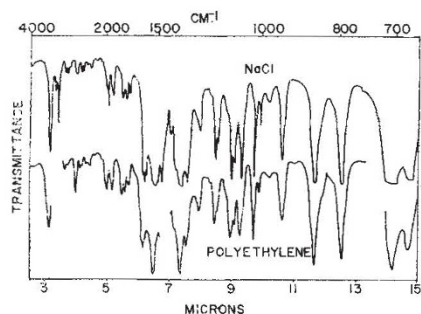


Fig. 2. Infra-red absorption spectrum of nitrobenzene as a capillary film either between sodium chloride windows or between two layers of 0.002 in. polyethylene film. In the latter case a similar thickness of polyethylene was in the reference beam. Breaks in the bottom curve indicate regions which are not usable because of polyethylene absorption

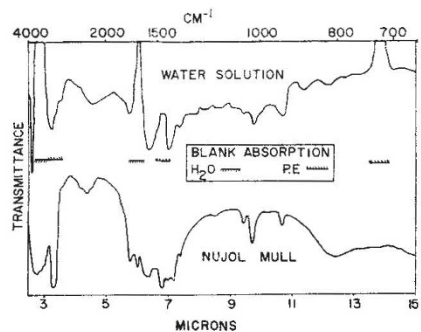


Fig. 3. Infra-red absorption spectrum of sodium acetate trihydrate as a 'Nujol' mull between sodium chloride windows or in saturated aqueous solution as a capillary film between polyethylene sheets. In the latter case the reference beam passed through a capillary film of water in polyethylene. Hatched lines indicate regions where high absorption by water or polyethylene makes sample spectrum indistinguishable

spectrum there is little of interest, but the two techniques appear to give similar bands. Both polyethylene and 'Nujol' show strong absorption at 13.5–14.0 μ . The difference appears because for polyethylene this was compensated by a reference sample.

The major objection to the polyethylene technique arises from the difficulty of controlling sample thickness. The flexibility of thin polyethylene prevents

spacers being used with any accuracy. However, for qualitative applications with aqueous solutions polyethylene seems in many ways preferable to the other cell materials which are available.

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- ¹ Gore, R. C., Barnes, R. B., and Petersen, E., *Anal. Chem.*, **21**, 382 (1949).
- ² Blout, E. R., and Lenormant, H., *J. Opt. Soc. Amer.*, **43**, 1093 (1953).
- ³ Potts, W. J., and Wright, N., *Anal. Chem.*, **28**, 1255 (1956).
- ⁴ Ellenbogen, E., Meeting Abstracts, American Chemical Society, September 1959, 24C.

Stability of Metal Complexes of Oxine and its Sulphonic Acid

THE STABILITY constants for the complexes of 8-hydroxyquinoline-5-sulphonic acid (oxine sulphonic acid) have recently been compared with those for 8-hydroxyquinoline (oxine). For any given metal, the reported difference between corresponding constants was large (up to 10,000-fold) and a plausible explanation was offered¹. However, the comparison is not valid because the values for the sulphonic acid were determined in water and those of the 8-hydroxyquinoline in 70 per cent dioxan².

When a comparison is made between results obtained in the same solvent, it is seen that the presence of the sulphonic acid group has only a small effect on the stability constants. This is clearly shown by the typical values (Table 1), all of which were obtained in water at 20–25°.

TABLE 1

Cation	Oxine (ref. 3)	Oxine sulphonic acid (ref. 3)	Oxine (ref. 4)	Oxine sulphonic acid (ref. 5)
	log k_1	log k_1	log k_1	log k_1
Cu ²⁺	12.5	12.5	12.6	11.5
Ni ²⁺	9.9	10.0	9.3	9.8
Co ²⁺	9.1	9.2	8.7	8.8
Zn ²⁺	—	8.4	8.6	8.7
Fe ²⁺	8.0	8.4	—	—
Mn ²⁺	6.8	6.6	—	6.9
Mg ²⁺	4.5	4.8	4.7	4.8

Method	Potentiometry	Potentiometry	Spectrometry	Spectrometry
Ionic strength	0.01	0.01	→0	→0

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- ¹ C. F. Richard, R. L. Gustafson and A. E. Martell, *J. Amer. Chem. Soc.*, **81**, 1033 (1959).
- ² L. E. Maley and D. P. Mellor, *Austral. J. Sci. Res.*, **2**, A, 92 (1949).
- ³ A. Albert, *Biochem. J.*, **54**, 646 (1953).
- ⁴ R. Nasanen, *Suomen Kemistilehti*, **B**, **2**, 11 (1953).
- ⁵ R. Nasanen and E. Uusitalo, *Acta Chem. Scand.*, **8**, 112 (1954).