# Preliminary Communication

## On the Melting Point of Hydratropic Acid

ARNE FREDGA AND SIGVARD WIDEQVIST

*The Chemical Institute, University of Uppsala, Sweden*

Hydratropic (α-phenyl-propionic) acid was first prepared 80 years ago by Kraut[1], who described it as »nicht krystallisierbar». Later it was investigated more thoroughly by Fittig and Wurster[2], who purified it through the calcium salt and found that it did not solidify even at — 20°. Later investigators invariably describe the acid as a viscous liquid, and in modern handbooks and tables we often find the statement of Fittig and Wurster, sometimes in the erroneous form m. p. $< - 20°$. The optically active acid, first prepared by Raper[3], also failed to crystallise.

On comparison with related acids it seemed unlikely that the melting point of hydratropic acid would be extremely low, and for stereochemical reasons it was desirable to study the melting point diagrams given by this acid with certain other compounds. One of us has for other pur-

poses worked out a convenient method to prepare the ethyl ester of α-cyan-hydratropic acid in a very pure state[4]. On boiling with alkali this ester is hydrolysed and decarboxylised, yielding hydratropic acid. After standing for some time in an open beaker at — 6°, this acid solidified to a crystal cake. It was dissolved in about twice its volume of ligroin (b. p. 60—70°) at room temperature, cooled to — 6°, and left to crystallise after seeding. The acid could also be crystallised from petrol ether (b. p. 30—50°). It is obtained as large, short-prismatic crystals; m. p. after two recrystallisations 16—16.5°.

0.2081 g: 13.07 ml 0.1060 $N$ NaOH. — 25.21 mg: 66.36 mg $CO_2$ and 15.30 mg $H_2O$.

$C_9H_{10}O_2$ (150.2)
Calc. Equiv. wt. 150.2    C 71.98    H 6.71
Found   »      »   150.2   » 71.79   » 6.79

1. Kraut, K. *Ann.* **148** (1868) 242.
2. Fittig, R., and Wurster, C. *Ann.* **195** (1879) 165.
3. Raper, H. S. *J. Chem. Soc.* **123** (1923) 2557.
4. Wideqvist, S. *Svensk Kem. Tid.* **55** (1943) 125.