Title
Reaction of n-Hexyl Bromide with Potassium Fluoride in Several Glycols

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ABSTRACTS

Effects of leaching conditions on the extraction of chromium were studied.
1. Size of ore, 2. Leaching time, 3. Amount of (NH₄)₂Cr₂O₇ added, 4. Leaching
temperature, and 5. Amount of charge.

Summary of Result: Results obtained are summarized in Table 1, which shows
the optimum conditions for extraction of chromium.

If the acid concentration was increased up to 60%, insoluble brownish-yellow
precipitate was formed in the presence of (HN₃)₂Cr₂O₇ in both cases of leaching.

Reaction of n-Hexyl Bromide with Potassium Fluoride
in Several Glycols

Hisao Kitano and Ken-ichi Fukui
(Kodama Laboratory)


Reactions of n-hexyl bromide with potassium fluoride in isomeric propanediols
and butanediols are studied. n-Hexylfluoride is obtained in high yields by the use of
such glycols that have two adjacent hydroxy groups in the molecule. Two geo-
metrical isomers of 1,2-cyclohexanediols are used as the solvent. The yield of n-
hexyl fluoride is ca. 30% in the trans isomer, whereas it's only 2% in the cis isomer.

Nitration of Desoxybenzoin

Michiyasu Sugih and Risaburo Nakai
(Nakai Laboratory)


The reaction routes of desoxybenzoin with nitric acid (d=1.30) were studied by
using C¹⁴-tracer technique. By the nitration of desoxybenzoin-carbonyl-C¹⁴ (I)
(12.95µc/m.mole) there were obtained p-nitrobenzil-carbonyl-C¹⁴ (II) (12.92µc/m.mole),
benzil-carbonyl-C¹⁴ (III) (12.96µc/m.mole), inactive p-nitro-benzoic acid (IV)
and benzoic acid-carboxyl-C¹⁴ (V) (11.29µc/m.mole). When treated with alcoholic
potassium hydroxide, II decomposed into inactive p,p'-azoxydibenzoic acid, inactive
p-nitrobenzoic acid and benzoic acid-carboxyl-C¹⁴ (12.96µc/m.mole). These facts
indicate that the nitration occurs at the para position to the methylene group of I.

The non-labeled specimens of p-nitrodesoxybenzoin, p-nitrobenzil, and benzil
were treated with the nitric acid, respectively. p-Nitrodesoxybenzoin gave benzoic
acid, p-nitrobenzoic acid, and p-nitrobenzil. Benzil and p-nitrobenzil, however, were
resistant to nitration and oxidation, and were recovered without loss. The specific
activity of V is comparatively lower than the theoretical value. These results
would lead to the following conclusions. In the action of the nitric acid on
desoxybenzoin-carbonyl-C¹⁴, the p-nitrodesoxybenzoin-carbonyl-C¹⁴ is formed as an
intermediate, and its methylene group is oxidized to p-nitrobenzil-carbonyl-C¹⁴.
While oxidative disruption of the same intermediate gives benzoic acid-carboxyl-C¹⁴.