

## Reactions of 9,10-anthraquinone and their derivatives with participation of carbonyl groups

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### Abstract

Carbonyl groups are structural fragments of molecules 9,10-anthraquinone, which significantly effect the reactivity. Under the influence of the electroneaccepting carbonyl groups anthraquinone derivatives exhibit a low activity in reactions with electrophilic reagents. For example, they may not be alkylated or acylated in lateral aromatic rings by Friedel-Crafts reaction method, that creates great difficulties for the processes of increasing complexity of carbon skeleton anthraquinonoid compounds. General admission increased activity towards electrophilic reagents is the elimination of adverse effects of carbonyl groups by restoring. Restore represents a complex multi-step process, which includes a stage of transformation in anthrahydroquinone, oxanthrone, anthrone, anthrol, anthracene, dihydroanthracene. Picking up and recovery conditions able to stop the recovery process at one of these stages and achieve success on the increase of activity towards electrophilic reagents. Par exemple, it is known that increasing the ability for interaction with electrofilic reagents take place by transition from anthraquinone to anthrahydroquinone and anthrone. Therefore the study of reactions with participation of carbonyl groups is actual problem in the chemistry of anthraquinone. Many different methods for reduction of anthraquinone to anthrone has existed. This methods have low selectivity. The paper shows the possibility for reduction of anthraquinone and their derivatives to anthrones with high exit. This method consists the application a mixture of aluminium, H<sub>2</sub> and CH<sub>3</sub>COOH. Anthraquinone, amino- and oxyanthraquinones can be easily converted to correspond 9-anthrones. This compounds are perspective intermediate for the synthesis dyes, biologicaly active substances, photochromes. The paper shows the possibility for synthesis oximes of anthraquinone and their derivatives across 2 different routs: 1) nucleofilic oximation carbonyl group by hydrochloride hydroxylamine, 2) nitroization of 9-anthrones. The paper shows what nitroization of 9-anthrones is useful for synthesis of amino- and oxyanthraquinone-monooximes.