

*A Method for the Preparation of the Raney  
Nickel Catalyst with a Greater Activity<sup>1)</sup>*

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The authors have found that the Raney nickel catalyst loses partly its activity during the development from the alloy with a strong caustic alkali, and that, by adding the alkali in portions to the alloy instead of adding the alloy in portions to the alkali, a greater activity is obtained. The procedure is described by an example as follows:

Two grams of a Raney alloy, consisting of 40% of nickel and 60% of aluminium, and 6 cc. of water are placed in a conical flask of 25 cc. capacity and warmed on a waterbath of 50°C, and 0.1 cc. of 40% caustic soda is added with vigorous stirring. The mixture is stirred vigorously at the temperature until the violent reaction subsides and the alloy is covered with grey films. Then 6 cc. of 40% caustic soda is added in portions slowly at the beginning but at a growing speed as long as the reaction does not become too violent, which needs about five minutes. The mixture is stirred at the same temperature just until the grey precipitate in the liquid becomes nearly white. The time needed for the digestion depends on the nature of the alloy used. The upper liquid is removed and the metal is washed three times with 10 cc. of distilled water and twice with 10 cc. of ethanol by decantation.

The catalyst prepared in this way reduces 3.926 g. (0.04 mole) of cyclohexanone, dissolved in 20 cc. of ethanol, to cyclohexanol in twenty-two minutes at 25°C and under the ordinary pressure. The reduction with a catalyst of W 7 type prepared by the procedure described by Adkins and Billica<sup>2)</sup> from the same amount of the same alloy needs forty to fifty minutes under the same conditions. Similar results are obtained with other specimens of the Raney alloy, for instance an alloy containing 50% of nickel and 50% of aluminium.

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1) Cf. Jiro Yasumura, "Kagaku-no-Ryoiki", Vol. 6, p. 733 (1952).

2) H. Adkins and H. R. Billica, *J. Am. Chem. Soc.*, **70**, 695 (1948).