

Method of influencing the cis/trans isomer ratio of
3-aminomethyl-3,5,5-trimethylcyclohexylamine in its
preparation from 3-cyano-3,5,5-trimethylcyclohexanone

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Abstract

3-Aminomethyl-3,5,5-trimethylcyclohexylamine (isophorone-
diamine) is a raw material used in industry for a variety
10 of synthetic resins. Isophoronediamine is used as a
cis/trans isomer mixture, the properties being influenced
by the cis/trans isomer ratio.

The invention indicates a way of controlling the isomer
15 ratio in the preparation of isophoronediamine by the
aminating hydrogenation of 3-cyano-3,5,5-
trimethylcyclohexanone (isophoronenitrile) in the presence
of ammonia, H_2 and a catalyst. The reaction takes place in
two temperature steps, i.e. initially at 10 to 90°C and
20 then at 90 to 150°C with a temperature difference of at
least 30°C between the two steps, the contact time being
shorter in the first step than in the second. The
cis/trans ratio is increased by lowering the temperature of
the first step.

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