

Note: Key data/information in this sample is hidden, while in the report it is not.

1 Introduction to aniline production technologies

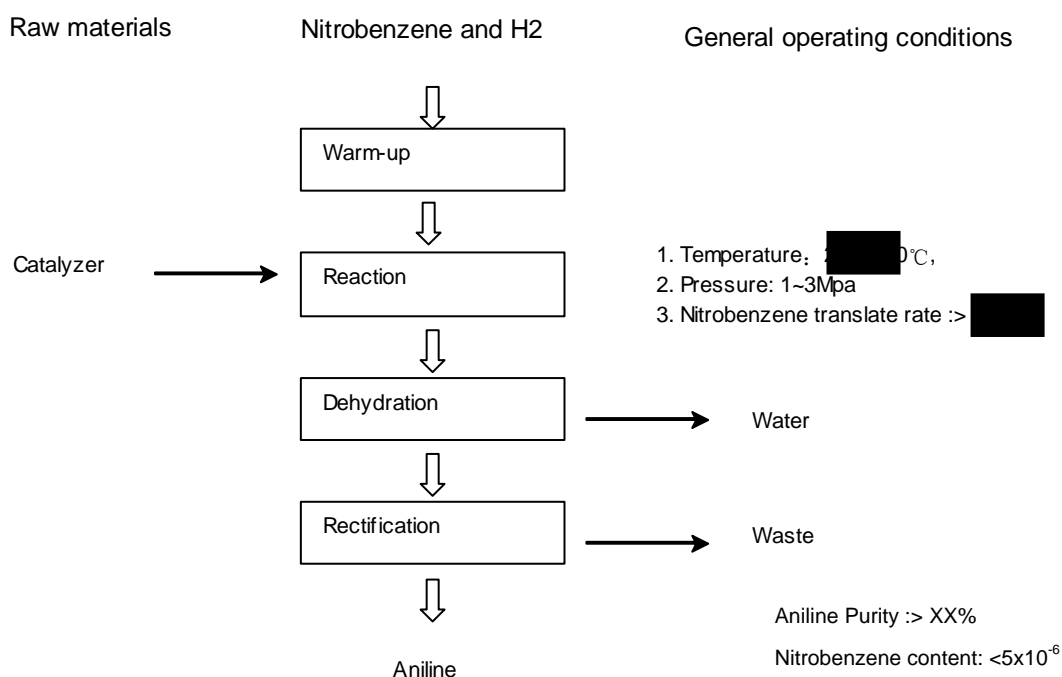
At present, almost all the overseas aniline producers are adopting the method of hydrogenation of nitrobenzene by catalyst.....

1.2 Hydrogenation of nitrobenzene by catalyst

Hydrogenation of nitrobenzene by catalyst is the major method of aniline production. It consists of four techniques: fixed bed catalyst for vapour phase hydrogenation, fluidized bed catalyst for vapour phase hydrogenation, combination of fixed and liquidized bed catalyst for vapour phase hydrogenation as well as liquid-phase hydrogenation for nitrobenzene.

1.2.1 Fixed bed catalyst for vapour phase hydrogenation

Figure 1.2.1-1 Fixed bed catalyst for vapour phase hydrogenation

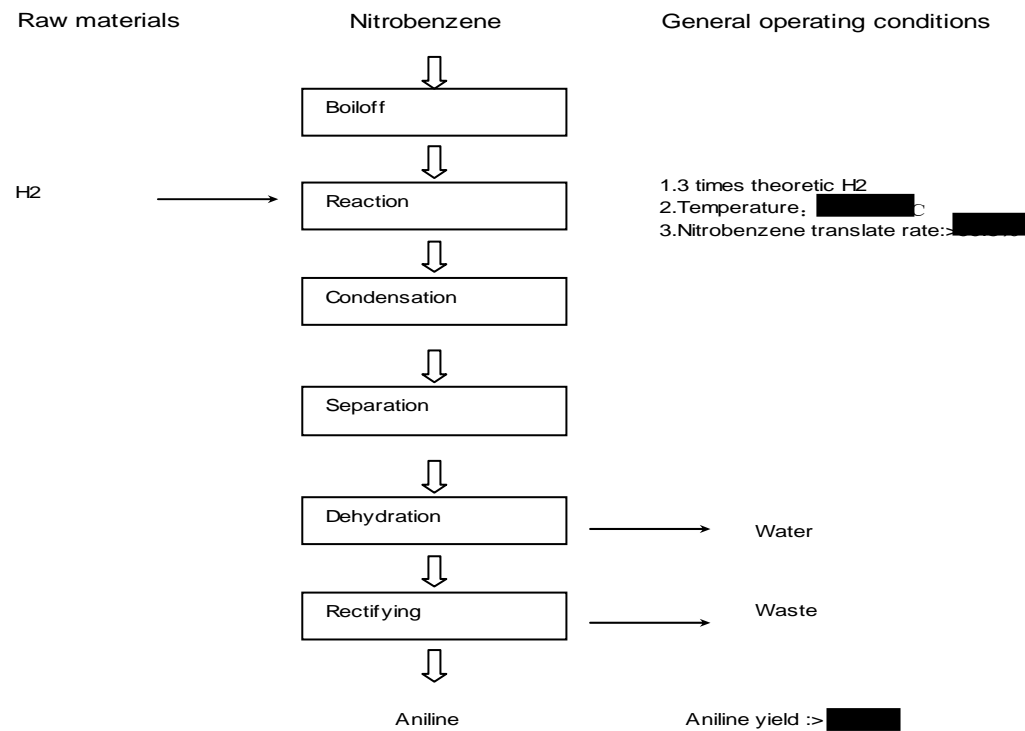


Source: CCM International

Fixed bed catalyst for vapour phase hydrogenation features mature technology, relatively low reaction temperature, user-friendly operation, low upkeep costs, low investment, no catalyzer and good quality etc. However, its disadvantage includes relatively high reaction pressure, secondary reaction, and short-term effect of catalyzer. For the moment, most producers overseas are employing fixed bed catalyst for vapour phase hydrogenation.

1.2.2 Fluidized bed catalyst for vapour phase hydrogenation

Figure 1.2.2-1 Fluidized bed catalyst for vapour phase hydrogenation

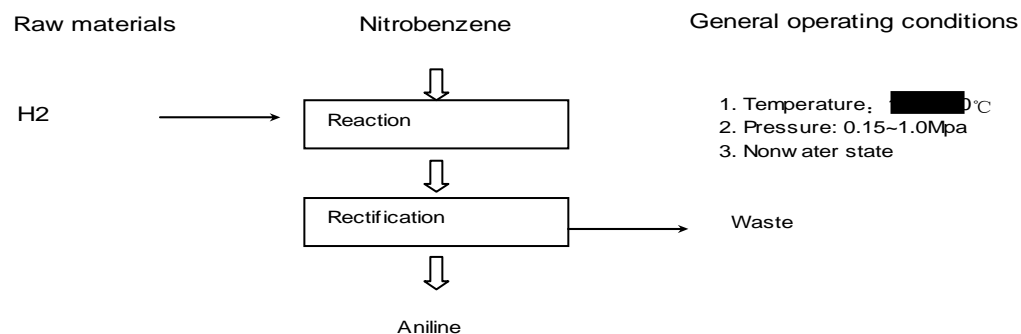


Source: CCM International

Fluidized bed catalyst for vapour phase hydrogenation improve diathermanous performance, control the reaction temperature, avoid partly overheat, reduce secondary reaction, prolong catalyzer service life. Its disadvantage includes complicated operation, big catalyzer abrasion, high equipment installation cost, and high upkeep costs.

1.2.3 Liquid phase hydrogenation for nitrobenzene

Figure 1.2.3-1 Liquid phase hydrogenation for nitrobenzene



Source: CCM International

The advantages of liquid phase hydrogenation for nitrobenzene include low temperature, little secondary reaction, large burden for catalyzer, long service life, and large production capacity.

However, its disadvantage is that its reactant, catalyzer and solvent must be separated. Besides, its equipment operation and upkeep cost is high.