

Desulfurization Methods for the Petrochemical Industry

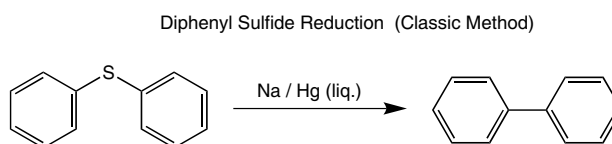
Classic Method

A chemical approach to the removal of sulfur from organic molecules is of interest in several industries, specifically petroleum and natural gas refining as well as markets like pharmaceuticals. Today's desulfurization processes typically utilize very efficient catalysts that, however, often struggle to remove sulfur from highly aromatic and sterically-hindered organic sulfur systems.

Problems

- (Petro) Catalysts are not reactive enough to fully remove highly aromatic sulfur species
- (Petro) Conditions can utilize high temperatures and pressures with flammable gases and long conversion times
- (Pharma) Handling of pyrophoric materials
- (Petro and Pharma) Safety and economic issues due to special equipment

Diphenylsulfane Reduction



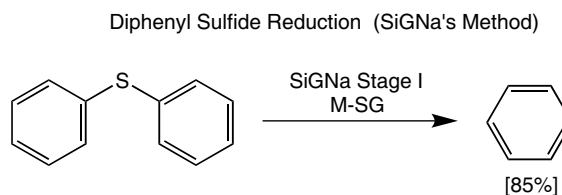
SiGNa's Method

The SiGNa desulfurization method has the ability to remove sulfur from a wide range of sulfur species, including ones that are highly aromatic, due to its finely dispersed metal and high reactivity. SiGNa's method is capable of performing desulfurizations at room temperature and pressure with simpler and safer reaction conditions.

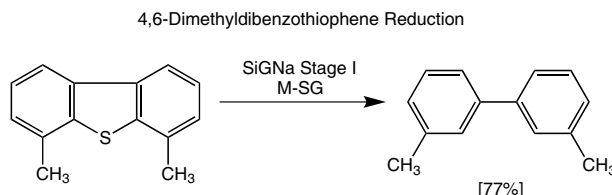
Benefits

- Can be performed in either batch or continuous-flow reactor setup
- Provides a smooth solution process at room temperature and pressure
- Enhanced selectivity and kinetics of reaction
- Capable of chemically removing sulfur from highly aromatic sulfur systems

Diphenylsulfane Reduction



Dimethyldibenzothiophene Reduction



44893

Sodium-silica gel, 35-40% alkali metal in silica gel, Stage I

Sizes: 5g, 25g, 100g