

8/12/51
T. Barne

TRICHLORPHENOL

Product: 2,4,5-Trichlorphenol for 2,4,5-T

Trichlorphenol (2,4,5-) is prepared from 1,2,4,5-tetrachlorbenzene using methanolic sodium hydroxide under pressure. The product is used in 2,4,5-T production without further purification.

CHEMISTRY OF THE PROCESS:

PLANT PROCESS:

A 500 gallon Flaw Knox steel agitated autoclave is charged with 590 pounds real 1,2,4,5-tetrachlorbenzene, 170 gallons of methanol (fresh and/or recovered) and 265 pounds of technical flake NaOH. The autoclave is closed and heated at 170°-180°C for 5-1/2 hours. The pressure rises to 350-450 P.S.I. At the end of the heating cycle, the autoclave is cooled to 100°C and the methanol is distilled off. The residue in the autoclave is diluted with water to 450 gallons and blown to a holding tank. The batch is further diluted to 700 gallons in the holding tank and the pH adjusted to 8.5-9.5. The batch is let settle and the aqueous portion is clarified through a filter press and collected in an acidification tank. The alkaline solution is acidified with sulfuric acid to isolate the free 2,4,5-trichlorphenol which is pumped to a holding tank where it is pumped to the 2,4,5-T reactors as needed.

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