

Manufacturing Process Flowchart Fluorouracil, USP Catalog FL127

Methylation, pre-step to obtain Methyl isourea NH₂ $2NH_2CONH_2 + (CH_3)_2SO_4$) 2. H2SO4 (CH₃O-NH Urea Dimethyl sulfate Methylisourea (1) Condensation & Cyclization HCOOC₂H₅, CH₃ONa FCH₂COOC₂H₅ COOC CH₃OH C₆H₅CH₃ ONa FZ* Sodium ethyl fluoro Methanol Ethyl formate, Sodium Ethanol malonaldehyde methoxide, Toluene (CH₃O-C) 2. H₂SO₄ + 2 C - $C-F + 2C_2H_5OH + Na_2SO_4 + 2H_2O$ $\mathbf{2}$ C-H CH₃O Methylisourea Sodium ethyl fluoro 2-methoxy-4hydroxy-Ethanol Sodiun sulfate Water Malonaldehyde 5-fluoro pyrimidine (2) Hydrolysis OCH₃ H_2O CH₃OH ÓН 2-methoxy-4-hydroxy-HCl acid 2,4-dihydroxy-5-fluoropyrimidine Methanol 5-fluoropyrimidine н ŃН 5-fluoropyrimidine-2,4(1H,3H)-dione (Fluorouracil) * FZ is the abbreviation name of Ethyl fluoroacetate.

CORPORATE HEADQUARTERS

769 Jersey Avenue New Brunswick, NJ 08901 PHONE 732.214.1300

FAX 732.246.7132

WEST COAST FACILITY

14422 South San Pedro Street Gardena, California 90248 PHONE 310.516.8000 FAX 310.516.9843

AN ISO 9001:2015 REGISTERED COMPANY

www.spectrumchemical.com