

ABSTRACT

The object of the present invention is to provide a method of recovering decene under the condition that a decomposition product of a chromium series catalyst and the like is difficult to form from a high boiler from which an ethylene low polymer has been separated, in a production method of an ethylene low polymer using a chromium series catalyst. The present invention relates to that an ethylene low polymer and a high boiler containing a chromium series catalyst, decene, tetradecene and a by-produced polymer are separated by evaporation operation from a reaction liquid containing an ethylene low polymer obtained by low polymerization reaction using a chromium series catalyst, and the high boiler is concentrated such that the tetradecene concentration is 5% by weight or more by an evaporative separator 70 and a liquid storage tank 80, and additionally, decene is evaporated and separated so as to satisfy the following general expression (1) wherein T is temperature (°C) of a residual solution, and θ is residence time (min.) of a residual solution.

[Exp. 1]

$$\theta/1.2\text{EXP}(800/T) \leq 1 \quad (1)$$