

METHOD FOR PROCESSING HYDROCARBON PYROLYSIS EFFLUENT

Abstract

A method and apparatus are disclosed for treating the effluent from a hydrocarbon pyrolysis unit employing a small primary fractionator, i.e., a rectifier. The method comprises cooling the gaseous effluent, e.g., by direct quench and/or at least one primary heat exchanger, and then cooling the gaseous effluent to a temperature at which tar, formed by reactions among constituents of the effluent, condenses, e.g., in a secondary exchanger. The resulting mixed gaseous and liquid effluent is passed through a rectifier, to cleanly separate quench oil from the gaseous effluent comprising a pyrolysis gasoline fraction, whose boiling point can be lowered as a result of the rectifier treatment. The effluent is then cooled to condense a liquid effluent comprising pyrolysis gasoline and water condensed from steam, which fractions are separated in a distillate drum. The cooled gaseous effluent is directed to a recovery train to recover light olefins. At least a portion of the pyrolysis gasoline-containing fraction can be recycled to the rectifier to enhance separation of the quench oil from the pyrolysis gasoline fraction.

Figure 1