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(54) Title: SLURRY HYDROCARBON SYNTHESIS WITH REDUCED CATALYST ATTRITION AND DEACTIVATION

(57) Abstract

A slurry hydrocarbon synthesis process with reduced catalyst attrition is achieved by injecting a synthesis gas comprising a mixture of H₂ and CO up into the reactive slurry with a gas distribution grid (106) having gas injectors (10) horizontally arrayed across, and vertically extending through, an otherwise gas and liquid impervious plate (32). The injectors (10) have a throat (20) with a gas pressure reducing orifice (12) at one end, which is the bottom and gas entrance end, and the other end opening into an open cone (30) in which the uprising gas contacts the slurry. Flow diverting means in the injectors prevents slurry from entering the throat (20) and being attrited. The gas injectors do not protrude above the top surface of the plate and flat space is eliminated by means such as angular fillers (94), to prevent solids accumulation top of the tray.

