MULTIPLE HYDROPROCESSING REACTORS WITH INTERMEDIATE FLASH ZONES

ABSTRACT OF THE DISCLOSURE

The instant invention comprises a hydroprocessing method having at least two stages. The first stage employs a hydroprocessing catalyst which may contain hydrotreating catalyst, hydrocracking catalyst, or a combination of both. The second stage is limited to hydrocracking. Conversion in the second stage may be improved by the addition of multiple reaction zones for hydrocracking, with flash separation zones between the stages. Middle distillate yield is thereby increased and the volume of the recycle stream is reduced. This invention reduces the need for equipment which would normally be required for a large recycle stream.

Figure 1

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