from the viewpoint of performance evaluation of a catalyst used for commercial unit.

Citation List

Patent Literature

[0018]

Patent literature 1: JP-B 1993-16908

Patent literature 2: JP-A 1996-173816

Patent literature 3: JP-A 2009-511245

Patent literature 4: JP-A 1985-193543

Patent literature 5: JP-A 2010-110698

Patent literature 6: WO 2009/145311

Patent literature 7: U.S. Patent No. 6,069,012

Summary ~~of Invention~~

[0018a]

In one aspect of the present disclosure, there is provided a testing unit for a fluid catalytic cracking catalyst, comprising a reaction vessel in which a catalyst fluidization cell, a feedstock injection nozzle and a catalyst-fluidizing gas feed nozzle are provided inside the vessel, said feedstock and said catalyst-fluidizing gas being fed from the upper part of vessel, and a product collection line is provided at the lower part of the vessel.

Technical Problem

[0019]

In order to solve such problems, the present inventors have earnestly studied, and as a result, they have found that test results closely similar to the test results obtained by a pilot plant can be obtained by providing, in a small-sized testing unit, a completely isolated catalyst fluidization cell (1) inside a reaction vessel (6), loading a catalyst into the cell, supplying a catalyst-fluidizing gas from above to allow the catalyst to be in a fluidized state and

CLAIMS

[Claim 1]

A testing unit for a fluid catalytic cracking catalyst, comprising a reaction vessel ~~(6)~~ in which a catalyst fluidization cell ~~(1)~~, a feedstock injection nozzle ~~(2)~~ and a catalyst-fluidizing gas feed nozzle ~~(3)~~ are provided inside the vessel, said feedstock and said catalyst-fluidizing gas being fed from the upper part of vessel, and a product collection line ~~(5)~~ is provided at the lower part of the vessel.

[Claim 2]

The testing unit for a fluid catalytic cracking catalyst as claimed in claim 1, wherein the catalyst fluidization cell ~~(1)~~ is cylindrical, has an inner diameter (D_I) ranging from 1 to 4 cm, a height (T) ranging from 2 to 14 cm and a ratio of the height (T) to the inner diameter (D_I), (T)/(D_I), ranging from 1.1 to 7.0, and has a cell bottom having a downward concave conical structure or semispherical structure.

[Claim 3]

The testing unit for a fluid catalytic cracking catalyst as claimed in claim 1 or 2, wherein the catalyst fluidization cell ~~(1)~~ has an internal volume in the range of 5 to 40 ml.

[Claim 4]

The testing unit for a fluid catalytic cracking catalyst as claimed in any one of claims 1 to 3, wherein catalyst load in the catalyst fluidization cell ~~(1)~~ during testing is in the range of 1 to 20 g.

[Claim 5]

The testing unit for a fluid catalytic cracking catalyst as claimed in any one of claims 1 to 4, wherein the catalyst has an average particle diameter in the range of 40 to 100 μm, and a bulk specific gravity in the range of 0.5 to 1.1 g/ml.