METHOD FOR REMOVING SOLID CATALYST

BACKGROUND OF THE INVENTION

Field of the Invention

[0001]

The present invention relates to a method of removing a solid catalyst after use from a fixed-bed multitubular reactor which includes a reaction tube filled with the solid catalyst.

~~Priority is claimed on Japanese Patent Application No. 2010-200019, filed September 7, 2010, the content of which is incorporated herein by reference.~~

Description of Related Art

[0002]

As a reactor that is used upon performing a contact gas-phase reaction in the presence of a solid catalyst, for example, a fixed-bed multitubular reactor is known which includes a reaction tube filled with the solid catalyst, such as a shell-and-tube type fixed-bed multitubular reactor. The shell-and-tube type reactor is a reactor having a structure in which a plurality of tubes (reaction tubes) is contained within a shell (a body).

[0003]

In such a reactor, the solid catalyst is filled in the tubes (the reaction tubes) to perform the reaction process, and during an exchange time of the catalyst, removing of the used solid catalyst from the reaction tube and filling of a new solid catalyst is repeatedly performed.

For that reason, when the solid catalyst is sampled, there is a problem in that a