Carbonization is formation of coke on the surface of heterogeneous catalysts. Deposits of coke block the surface of the catalyst therefore its activity can significantly decrease and change selectivity of the catalyst. It is one of the main reasons for the deactivation of catalysts used in refining processes (cracking, reforming, dehydrogenation, etc.). It is the removal of all lighter distillable hydrocarbons that leave a residue of carbon in the bottom of units or as buildup or deposits on equipment and catalysts.

Carrier is a solid phase component in the deposited (supported) catalyst, on the surface of which the active component is located. The main functions of the carrier are maintenance of an active component in a disperse state, creation of a porous system, ensuring mechanical durability of granules of the catalyst. Simple and complex oxides, and also materials on the basis of carbon are widely used as carriers. As a rule, the carrier in pure form doesn't show catalytic activity in relation to reagents and is an inert substance. But many examples when the carrier enters into chemical interaction with the reactionary medium, or with an active component are known.

Catalysis is the phenomenon of initiation of chemical reactions or change of their speed under the influence of substances – catalysts, which repeatedly enter into intermediate chemical interaction with the participants of the reaction and restore the structure after each cycle of intermediate interactions. At the same time, the catalyst doesn't displace chemical balance of reactions.

Catalyst is a substance that changes the rate of chemical reactions without shifting their chemical equilibrium, which repeatedly enters into an intermediate chemical interaction with reagents and regenerates its chemical composition after each cycle of such interactions. An important feature is that the catalyst is regenerated in each catalytic cycle, which allows conversion of large amounts of reagents in the presence of a relatively small amount of catalyst. As a rule, for each chemical reaction it is required to select a specific catalyst. Practical application as catalysts is found by extremely different substances – from solutions of acids and complexes of metals to complex solid-phase multicomponent compounds of strictly specified composition and a structure.

Catalyst durability is ability of particles of the solid-phase catalyst to maintain mechanical loadings. There are various experimental techniques for determination of durability (for example, durability on attrition, durability on crush). For commercial catalysts high durability allows us to minimize losses during catalytic process, as well as during transportation the catalyst and its loading in the reactor.

Catalyst plugging is deposition of carbon (coke) or metal contaminants that decreases flow through the catalyst bed.

Catalyst poisoning is deposition of carbon (coke) or metal contaminants that makes the catalyst nonfunctional.

Catalyst selectivity is a relative activity of the catalyst with respect to a particular compound in a mixture, or the relative rate in competing reactions of a single reactant.

Catalyst poisoning is a partial or complete loss of its activity under the influence of an insignificant amount of some substances - contact poisons. Contact poisons form surface chemical compounds with activated catalyst centers and block them, reducing the activity of the catalyst. For each group of catalysts, there are certain types of contact poisons.

Catalyst poisoning can be reversible when contact poisons decrease the activity of the catalyst temporarily while they are in the catalysis zone, and irreversible when catalyst activity is not restored after contact poisons are removed from the catalysis zone. Contact poisons can be contained in the reagents entering the catalytic process, and also form as by-products in the process itself.

Catalyst productivity is the amount of product produced per unit time, referred to the mass or volume of the catalyst.

Catalyst stripping is the introduction of steam, at a point where spent catalyst leaves the reactor, in order to strip, i.e., remove deposits retained on the catalyst.