

cultural (spiritual) rights and freedoms are expressed in six articles (articles 22-27), including rights to property, labor and free choice of work, entrepreneurship, social security, rest, decent living standards, education, participation in cultural life, etc.

Unisol process is a chemical process for extracting mercaptan sulfur and certain nitrogen compounds from sour gasoline or distillates using regenerable aqueous solutions of sodium or potassium hydroxide containing methanol.

Unstable – this term usually refers to a petroleum product that has more volatile constituents present or refers to the presence of olefin and other unsaturated constituents.

UOP alkylation is a process using hydrofluoric acid (which can be regenerated) as a catalyst to unite olefins with iso-butane.

UOP copper sweetening is a fixed-bed process for sweetening gasoline by converting mercaptans to disulfides by contact with ammonium chloride and copper sulfate in a bed.

UOP fluid catalytic cracking is a fluid process using a reactor-over-regenerator design.

Upflow reactor is a reactor in which the feedstock flows in an upward direction through the catalyst bed.

Upgrading is the conversion of petroleum to value-added salable products.

Urea dewaxing is a continuous dew axing process for producing low-pour-point oils, and using urea which forms a solid complex (adduct) with the straightchain wax paraffins in the stock; the complex is readily separated by filtration.

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Vacuum distillation is a process of separating petroleum hydrocarbon mixtures into components under reduced pressure, based on the difference in their boiling points. The use of a reduced pressure allows reducing the boiling point of the components, since at atmospheric pressure the heavy components decompose earlier than they boil out. It is the distillation of petroleum under vacuum which reduces the boiling temperature sufficiently to prevent cracking or decomposition of the feedstock. Vacuum distillation is used for a finer separation of residual atmospheric distillation (mazut, fuel oil). Its products are gas oils and residues (for example, tar). Vacuum gas oils are used as components of diesel fuel, and also as raw materials for the process of catalytic cracking and a number of others.

Vacuum residuum is a residuum (rest) obtained by distillation of a crude oil under vacuum (reduced pressure); that portion of petroleum which boils above a selected temperature such as 510°C (950°F) or 565°C (1050°F).

Vapor is the gaseous phase of a substance that is a liquid at normal temperature and pressure.

Vapor-phase cracking is a high-temperature, low-pressure conversion process.

Vapor-phase hydrodesulfurization is a fixed-bed process for desulfurization and hydrogenation of naphtha.

Visbreaking is viscosity breaking i.e. a low-temperature cracking process used to reduce the viscosity or pour point of straight-run residuum.

Viscosity of petroleum products is a property of a liquid to resist movement caused by internal molecular interactions in a moving medium.

The volumetric rate is the ratio of the volume of the reaction mixture supplied per hour to the inlet of the reactor to the bulk volume of the catalyst in this reactor. This term is used for both liquid and gaseous reaction mixtures, the conditions for determining the volume of the mixture can be reduced to standard and differ from the conditions of the process.

Volumetric velocity (W) is the volume of the reaction mixture passing through a unit volume of catalyst per unit time, $\text{m}^3/\text{m}^3\text{-h}$ or h^{-1} . It should be borne in mind that the second notation is very arbitrary, since volume units differ.

Volumetry (volumetric titrimetric analysis) is a chemical analysis technique based on measuring the volume of the reagent used, the emitted or absorbed gas.