

HYDROGENOLYSIS OF DICHLOROTETRAFLUOROETHANE ISOMERIC MIXTURES
FOR OBTAINING 1.1.1.2 - TETRAFLUOROETHANE

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1.1.1.2 - Tetrafluoroethane was prepared from isomeric mixture of dichlorotetrafluoroethanes through selective hydrogenolysis of $\text{CF}_3 - \text{CCl}_2\text{F}$ catalyzed by Pd/C. The other isomer $\text{CClF}_2 - \text{CClF}_2$ appeared more stable to hydrogenolysis and at most it was converted at a low degree to the monohydrogenated derivative $\text{CHF}_2 - \text{CClF}_2$.

Influence of the three meaningful operating parameters was defined on the basis of a statistical testing program.

The mathematical elaboration of the experimental data allowed to define some relations, by which it is possible to foresee conversion of $\text{CF}_3 - \text{CCl}_2\text{F}$, yield in $\text{CF}_3 - \text{CH}_2\text{F}$ and concentration of reaction products, such as $\text{CF}_3 - \text{CH}_3$, $\text{CF}_3 - \text{CH}_2\text{F}$, $\text{CF}_3 - \text{CHClF}$ and $\text{CClF}_2 - \text{CHF}_2$ versus the above reported operating parameters.