Thermal decomposition of HFC134a using oxygen

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Thermal decomposition of HFC134a was examined in a tube type reactor. Influence of parameters such as reaction temperature, amounts of oxygen and water vapor was determined. The concentration of HFC134a was analyzed with a gas chromatography-thermal conductivity detector (GC-TCD). For the HFC134a decomposition, the reaction temperature and the additional oxygen had the strong effect on the decomposition rate. Thermal decomposition of HFC134a was observed at temperature above 600 ℃, while no thermal decomposition occurred below 700 ℃ without oxygen. Thermal decomposition of HFC134a was promoted by increasing the reaction temperature. Furthermore, the addition of oxygen played important roles for the complete decomposition of HFC134a.