Highly Selective Hydrodechlorination of HCFC-22 to HCFC-32 in Supercritical HCHC-22

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Chlorodifluoromethane(HCFC-22) is one of the most commonly used refrigerants. It has been choosen for heat pump and air-conditioning systems for more than four decades. This refrigerant is non-toxic and it is non-flammable that makes highly safe. Unfortunately, HCFC-22 include chlorine, releases out of the environment contribute to ozone depletion enhance the global warming effect. And HCFC-22 started to phase-out from January 2010. Therefore, it is essential to find an effective way to recycle HCFC-22 to more environmental friendly, low or null ODP (ozone depletion potential) and low GWP (global warming potential) product such as CH2F2 (HFC-32). In this work, we propose hydrodechlorination of HCFC-22 at the Supercritical system. The influence of reaction pressure and contact time were investigate and discussed. catalysts were reduced before reaction, Reaction temperature and pressure were fixed at 400℃, 100bar. The reaction time took 8hr.