# 캐스케이드 냉동시스템의 프로판-에탄 냉매에 대한 성능분석

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# The Characteristic of Propane(R290)-Ethane(R170) as Refrigerant in the Cascade Refrigeration System

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## Abstract

Nowadays, demands on super low temperature condition for industrial and commercial uses are thriving. Considering of its wide application in the present and the future, study of the super-low temperature refrigeration system should be actively carried out. This study is aimed to investigate refrigeration capacity and coefficient of performance(COP) of the cascade refrigeration system, as well as to get the system which can reach evaporator temperature of -70℃. For this purpose, R290 and R170 are charged in high stage and low stage respectively. Finally the characteristics of system using R290 and R170 will be proposed.

**Key words**: Cascade heat exchanger(캐스케이드 열교환기), Ethane(R170), Propane(R290), Two stage refrigeration system(이원냉동시스템)