

ICR0038

**A STUDY OF IN-TUBE EVAPORATION HEAT TRANSFER OF
CARBON DIOXIDE**

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The evaporative heat transfer characteristics of carbon dioxide in an 8.0 mm ID smooth stainless steel tube were measured. Data were collected in a concentric tube heat exchanger heated by water in the annulus with carbon dioxide in the central tube. Data have been collected over a range of temperature (5 °C to 25 °C), mass flux (250 kg/m²s to 1000 kg/m²s) and heat flux (3 kW/m² to 15 kW/m²). A Wilson Plot technique was used to correlate the in-tube local heat transfer coefficient of carbon dioxide. Results have been interpreted by relating the heat transfer coefficient to quality at various evaporation temperatures and various mass fluxes.