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Experimental study of oil retention in microchannel type evaporators of air-source heat pump systems

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**Highlights**

- Oil retention was investigated for two microchannel type evaporators of air-source heat pump systems for residential applications
- the oil retention volume varied from 3 to 10% of internal volume of the heat exchangers
- Oil retained and in circulation with the refrigerant inside the evaporators decreased the heat transfer rate by 4 percent
- Oil increased the pressure losses by 10 and up to 25 percent
- In microchannel type heat exchangers, the lubricant is retained mainly in the headers

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