

Title (en)

PIPING STRUCTURE OF COOLING DEVICE, MANUFACTURING METHOD THEREOF, AND PIPE COUPLING METHOD.

Title (de)

ROHRSTRUKTUR FÜR EINE KÜHLVORRICHTUNG, HERSTELLUNGSVERFAHREN DAFÜR UND ROHRVERBINDUNGSVERFAHREN

Title (fr)

STRUCTURE DE TUYAUTERIE D'UN DISPOSITIF DE REFROIDISSEMENT, MÉTHODE DE FABRICATION DE CELLE-CI ET MÉTHODE D'ACCOUPLEMENT DE TUYAUX

Publication

EP 2698590 A4 20141119 (EN)

Application

EP 12770839 A 20120410

Priority

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Abstract (en)

[origin: EP2698590A1] In a piping structure of a cooling device using an ebullient cooling system, the cooling performance of the cooling device is degraded if the pipe is provided with flexibility, therefore, a piping structure of a cooling device according to an exemplary aspect of the invention includes a first tubular part with a hollow portion through which a refrigerant used in the cooling device flows; wherein the first tubular part is made of metal materials; and the surface roughness of the inner surface of the first tubular part is less than or equal to the size of a condensation nucleus for the refrigerant.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

- [X] EP 1857722 A1 20071121 - SUMITOMO METAL IND [JP]
- [A] DE 2919188 A1 19801113 - SUEDEDEUTSCHE KUEHLER BEHR
- [A] US 2003205364 A1 20031106 - SAUCIUC IOAN [US], et al
- See references of WO 2012141320A1

Cited by

KR20200049580A

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

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DOCDB simple family (application)

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