

Title (en)

Domestic appliance with heat exchanger composed of material comprising thermoplastic and such a heat exchanger

Title (de)

Hausgerät mit Wärmetauscher aus thermoplastischem Kunststoff enthaltendem Werkstoff, sowie solcher Wärmetauscher

Title (fr)

Appareil ménager doté d'un échangeur thermique en matière synthétique thermoplastique, et un tel échangeur thermique

Publication

EP 2322708 A3 20130612 (DE)

Application

EP 10190071 A 20101105

Priority

DE 102009046680 A 20091113

Abstract (en)

[origin: EP2322708A2] The household appliance (1) such as condensation dryer, comprises a heat-exchanger (5) that is constructed with a heat-conductive material, which contains a thermoplastic plastic, and a drying chamber for objects to be dried, a process air channel (2) through which process air is guidable through the drying chamber in which a heater stands itself for heating the process air, a blower (6) for the production of the process air, and a heat exchanger for cooling the process air towards passage through the drying chamber. The material is a composite material. The household appliance (1) such as condensation dryer, comprises a heat-exchanger (5) that is constructed with a heat-conductive material, which contains a thermoplastic plastic, and a drying chamber for objects to be dried, a process air channel (2) through which process air is guidable through the drying chamber in which a heater stands itself for heating the process air, a blower (6) for the production of the process air, and a heat exchanger for cooling the process air towards passage through the drying chamber. The material is a composite material, which contains the thermoplastic plastic and/or carbon nanotubes (CNTs). The plastic consists of polyolefins, olefin copolymers and styrene copolymers, is a polypropylene or acrylonitrile-butadiene-styrene-copolymer. The composite material consists of CNTs in a quantity of 0.8-8 wt.% based on the composite material. The carbon nanotubes are multi-walled, and are obtained by deposition from the vapor phase in the catalytic decomposition of hydrocarbons (CVD). The composite material is obtained by dispersing the carbon nanotubes in thermoplastic plastic in the presence of a dispersing agent. An independent claim is included for a heat-exchanger.

IPC 8 full level

D06F 58/24 (2006.01); **C23C 16/26** (2006.01); **F28F 21/06** (2006.01)

CPC (source: EP US)

D06F 58/24 (2013.01 - EP US); **F28F 21/02** (2013.01 - EP); **F28F 21/06** (2013.01 - EP); **F28F 2255/20** (2013.01 - EP)

Citation (search report)

- [X] DE 112004002463 T5 20070621 - USUI KOKUSAI SANGYO KK [JP]
- [X] WO 2009005029 A1 20090108 - TECHNES CO LTD [JP], et al
- [AD] DE 19958106 A1 20010222 - JOMA POLYTEC KUNSTSTOFFTECHNIK [DE]

Cited by

CN112301323A; CN105986447A; EP3819423A1; EP2746456A1; DE102011089757A1; WO2013074227A1

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2322708 A2 20110518; EP 2322708 A3 20130612; DE 102009046680 A1 20110519

DOCDB simple family (application)

EP 10190071 A 20101105; DE 102009046680 A 20091113