

## ABSTRACT

VACUUM HEAT INSULATING MATERIAL, VACUUM HEAT INSULATING MATERIAL  
MANUFACTURING APPARATUS, AND HEAT INSULATING BOX USING VACUUM  
5 HEAT INSULATING MATERIAL

Provided are a vacuum heat insulating material that prevents formation of a  
through hole extending from a sealing portion to the inside of an outer wrapping  
material, enabling high heat insulation performance to be maintained for a long period  
10 of time, an apparatus of manufacturing the vacuum heat insulating material, and a  
heat insulating box employing the vacuum heat insulating material. A vacuum heat  
insulating material includes a core material including a fiber assembly; an adsorbent  
to absorb at least moisture; and an outer wrapping material covering the core material  
and the adsorbent, the outer wrapping material having inside depressurized and  
15 hermetically sealed, and including a sealing portion formed at a peripheral edge  
portion thereof, at least a part of the sealing portion having a corrugated shape in  
cross section, the corrugated shape having crest top portions arranged at a pitch of  
no more than 3 mm, and trough bottom portions arranged at a pitch of no more than 3  
mm.

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FIG. 3