HotBag Efficiency
as a Retained Heat Cooker

Who should be using a HotBag?

Everyone who cooks on a stove of any sort.

What are the convenience benefits of using a HotBag?

- Save up to 75% of cooking fuel cost
- Cooks in normal time
- Food remains hot for 3-5 hours without burning or drying out
- Saves two thirds of time watching pots on the stove
- Food will not burn, boil dry or dry out in a HotBag
- Food can be safely left cooking without supervision (avoid fire hazard)
- Food tastes better and has a better texture (more moist)
- Less nutrients are lost with HotBag cooking
- Transportation is possible during the cooking process and afterwards (keeps food hot)
- Non-bulky
- Pays for itself within 6-8 months of fuel savings
- Durable for years of use
- Light weight and washable by hand

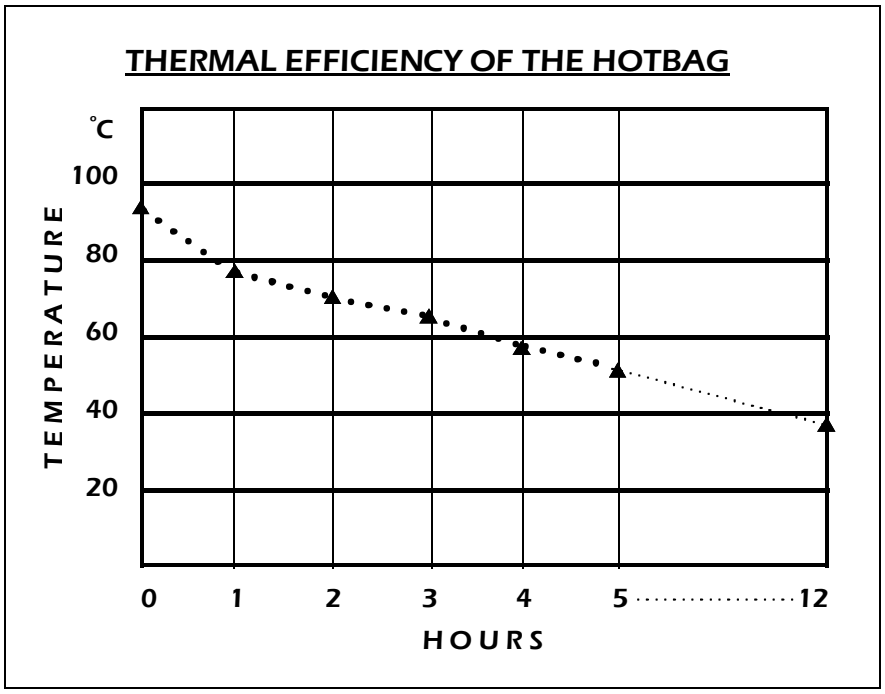
What foods can be cooked with Hotbag?

Any food that cooks in water: Porridges, soups, stews, casseroles, all veges, samp and beans, rice.

For how long does a HotBag retain heat?

A HotBag retains heat long enough to continue the cooking process of any food, and keep food warm without it drying out or burning.

The graph below illustrates the thermal efficiency of a HotBag.



In the above, a 2,5 litre stainless steel pot containing 2 litres of boiling water was used in a SMALL HotBag

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After 5 hours in the HotBag, the temperature of the water had dropped from 93.3°C (simmering) to 54.4°C. The water was still scolding hot.

After 12 hours (overnight) the temperature of the water had dropped to 38.4°C, which is luke- warm.

What makes a HotBag so efficient in heat retention?

Heat retention is related to three factors: *conduction, convection and radiation*.

With high temperatures such as boiling point in water *radiation* is the most important of the three factors.

The insulation in a HotBag includes the following:
Polyflex batting – the air contained in this quilting is a poor conductor of heat, and transferal of heat through it is slow.

Metalised polypropylene (plastic silver foil) – the plastic serves as an effective steam barrier, reducing the possibility of convection cooling, and the aluminium coating provides a shiny reflector of heat that radiates back into the HotBag.

What factors affect the efficiency of a HotBag?

Related to the above, when using a HotBag one needs to bear in mind the following:

a) The pot should be at least half full. The fuller the pot, the better the performance.
b) Do not place on a cold surface, as heat will be lost. Wood or newspaper are recommended as they are poor conductors or heat. Melamine kitchen counters are similar to wood, but granite is cold.
c) The steam barrier ensures no moisture loss, so a slow-cooked stew needs only the required amount of liquid to start with.
d) Aluminium pots are most effective, as aluminium is a good conductor of heat (ie. It holds heat well).
e) The larger the pot, the better the heat retention, regardless of the slender, light-weight insulation of the HotBag. The pot must still be at least half full.

Won't the pot burn the HotBag?

The HotBag is for use with all foods that are cooked with water. The water inside the pot prevents it from burning the HotBag. The lining of the HotBag is of cotton or polyester cotton, which do not burn or melt in this specific use. The pot should be simmering on low heat before it is transferred to the HotBag. As little as 1cm of water is all that is necessary to steam vegetables in a HotBag.

Can any pot be used in a HotBag?

Any pot can be used, but it must hold some water. If the food in the pot is burning, the pot will get so hot it can burn the HotBag.