

**Materials and articles  
in contact with  
foodstuffs — Insulated  
containers for domestic  
use —**

**Part 3: Specification for thermal packs**

The European Standard EN 12546-3:2000 has the status of a  
British Standard

ICS 67.250

## National foreword

This British Standard is the official English language version of EN 12546-3:2000. It supersedes BS 6671:1986 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CW/9, Cooking and catering containers, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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### Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 5 and a back cover.

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Matériaux et objets en contact avec les denrées  
alimentaires – Récipients isolants à usage domestique –  
Partie 3: Spécification pour les accumulateurs thermiques

Materialien und Gegenstände in Kontakt mit Lebensmitteln  
– Isolierbehälter zum Gebrauch im Haushalt – Teil 3:  
Beschreibung von Kühlakku

This European Standard was approved by CEN on 4 March 2000.

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## Contents

	Page
1 Scope	2
2 Normative references	2
3 Definitions	3
4 Requirements	3
5 Test methods	4
6 Marking and labelling	5

## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 194, Utensils in contact with food, the Secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This standard has been prepared as a series of three parts which have the following titles:

- Part 1: Specification for vacuum ware, insulated flasks and jugs;
- Part 2: Specification for bags and boxes;
- Part 3: Specification for thermal packs.

## 1 Scope

This standard specifies requirements for sealed, non-refillable, re-usable cooler packs, also known as ice packs, intended for use with insulated domestic food containers.

This standard is not applicable to thermal packs for the treatment of sports injuries or for use as hot water bottles.

This standard does not deal with requirements for materials in contact with food, which are defined by existing regulations.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 12546-2:2000 Materials and articles in contact with foodstuffs – Insulated containers for domestic use - Part 2: Specification for insulated bags and boxes.

EN 71-3 Safety of toys – Part 3: Migration of certain elements

### 3 Definitions

For the purposes of this standard the following definitions apply.

#### 3.1 cooler pack

sealed container filled with a cold-retaining medium intended for use in conjunction with an insulated domestic food container, for example one complying with EN 12546-2:2000.

NOTE: The pack is pre-cooled before use by, for example, storage in a domestic freezer or refrigerator.

#### 3.2 service temperature limits

minimum and maximum temperatures between which a cooler pack is intended to operate.

#### 3.3 surface coating

ink, paint, varnish, lacquer, transfers, etc applied to the surface of the cooler pack.

## 4 Requirements

### 4.1 Contents

The cold retaining medium shall not be considered as dangerous (see Note 1). If water is used as the cold retaining medium or part of it, it shall be of quality fit for human consumption (see Note 2). It shall be possible to present all data for checking compliance with the requirements of this clause.

NOTE 1: Attention is drawn to the Council Directive of 7 June 1988 (88/379/CEE) referring to the classification, packaging and labelling of dangerous preparations and requiring that the cold retaining medium not be dangerous.

NOTE 2: Attention is drawn to Council Directive of 15 July 1980 (80/778/CEE) relating to the quality of water intended for human consumption.

### 4.2 surface coatings

4.2.1 A coating, if any, shall be firm and not removable when tested in accordance with 5.1.

4.2.2 The coating, if any, shall comply with the requirements of EN 71-3 for toxic metals in coatings if more than 10 mg can be obtained from the cooler pack by a physical method of removal.

### 4.3 leak resistance

The cooler pack shall be leak resistant at any temperature between the service temperature limits and comply with the requirements of 4.4 to 4.7 after being subjected to testing in accordance with 5.2.

### 4.4 load resistance

The cooler pack shall not be damaged so as to cause leakage at ambient temperature when tested in accordance with 5.3.

### 4.5 thermal shock

A cooler pack shall be able to withstand a thermal shock without damage or leakage when tested according to 5.4.

### 4.6 impact resistance

After testing in accordance with 5.5 there shall be no leakage or breakage of the cooler pack likely to affect future performance.

### 4.7 puncture resistance

A cooler pack shall not leak after it has been subjected to the puncture test described in 5.6.

## 5 Test methods

### 5.1 adhesion of surface coatings

Use a self-adhesive tape having a specific adhesion to stainless steel of  $(400 \pm 100)$  g/cm when removed at  $180^\circ$  at approximately 1 m/s. Apply the tape firmly to the surface coating on the cooler pack at ambient temperature. Remove the tape swiftly at a speed of about 1 m/s and examine for traces of coating adhering to the tape.

### 5.2 leak resistance

For the purpose of this testing, the minimum and maximum service temperatures shall be those declared by the manufacturer or, where no service temperatures are declared, shall be  $(-18 \pm 2)^\circ\text{C}$  and  $(+60 \pm 2)^\circ\text{C}$ .

Perform the following cycle 20 times:

1. store the cooler pack at the minimum service temperature for 2h;
2. leave the cooler pack at ambient temperature for 15 min;
3. place the cooler at the maximum service temperature for 30 min;
4. leave the cooler pack at ambient temperature for 15 min.

Examine for leakage before carrying out the other tests.

### 5.3 load resistance

For the purpose of this test, the cooler pack shall be placed on an horizontal hardwood board of 3 cm thickness and the load applied through a wooden panel.

Apply for 10 min a force equivalent to 1 N for every  $\text{cm}^2$  of its greatest projected surface area within 30 s of reaching stability at:

- the minimum service temperature;
- ambient temperature.

Examine for leakage.

#### 5.4 thermal shock

With the cooler pack initially at ambient temperature, immerse it for 5 min in water at the maximum service temperature.

Remove it from the water and immediately thereafter store for 2 h in a freezer at the minimum service temperature.

Remove it from the freezer, and immerse for another 5 min in water at the maximum service temperature.

Dry it with a cloth and examine for leakage or damage.

#### 5.5 impact resistance

Perform 3 drops from a height of  $(750 \pm 50)$  mm onto a hardwood board 3 cm thick using a different pack for each of the following conditions:

- within 60 s following storage at the minimum service temperature for 2 h;
- at ambient temperature.

Examine for leakage or breakage.

#### 5.6 puncture resistance

At ambient temperature, apply a force of 10 N through a needle of tip radius 0,4 mm for 10 s once on each side of the pack.

Examine for leakage.

### 6 Marking and labelling

A cooler pack shall be legibly and permanently marked with:

- the name or identification mark of the manufacturer, distributor or vendor;
- the number of this EN standard.

The following information shall be provided with the cooler pack:

- “Do not swallow the contents of this pack”;
- the service temperature limits.

In addition, the following should be indicated:

- that the product is not to be put in a dishwasher, unless otherwise specified by the manufacturer;
- the cleaning instructions;
- the pre-cooling instructions.

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