



HELMSMAN

QUALITY & TECHNOLOGY SERVICES

# HOTS

## Packing Knowledge Training

## 包装知识培训教材

IMTN-H-xxx-HQT Revision No.01

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Approved by: LH

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# Training Objectives

1

**Why the product / selling unit need package.**

2

**Understand The Packing Knowledge.**

3

**Understand How to Description the Packing**

# SUMMARY

- 1 The importance for package
- 2 The product packing knowledge
- 3 The shipping carton packing knowledge
- 4 Report writing for package
- 5 The packing material knowledge

## The importance for package

Why the  
product /  
selling unit  
need package  
?



**For protection the product  
safety**



**Make the product more  
attractive**



**Carry out the importance  
information for user.**

## The importance for package



## The product packing knowledge

There are so many kinds of packing way for protection product under safety.

◇ Paper / tissue



## The product packing knowledge

There are so many kinds of packing way for protection product under safety.

### ◇ Polybag



## The product packing knowledge

There are so many kinds of packing way for protection product under safety.

### ◇ Polyfoam



## The product packing knowledge

There are so many kinds of packing way for protection product under safety.

◆ Bubble bag / bubble sheet



## The product packing knowledge

There are so many kinds of packing way for protection product under safety.

### ◇ Cardboard



## The product packing knowledge

There are so many kinds of packing way for protection product under safety.

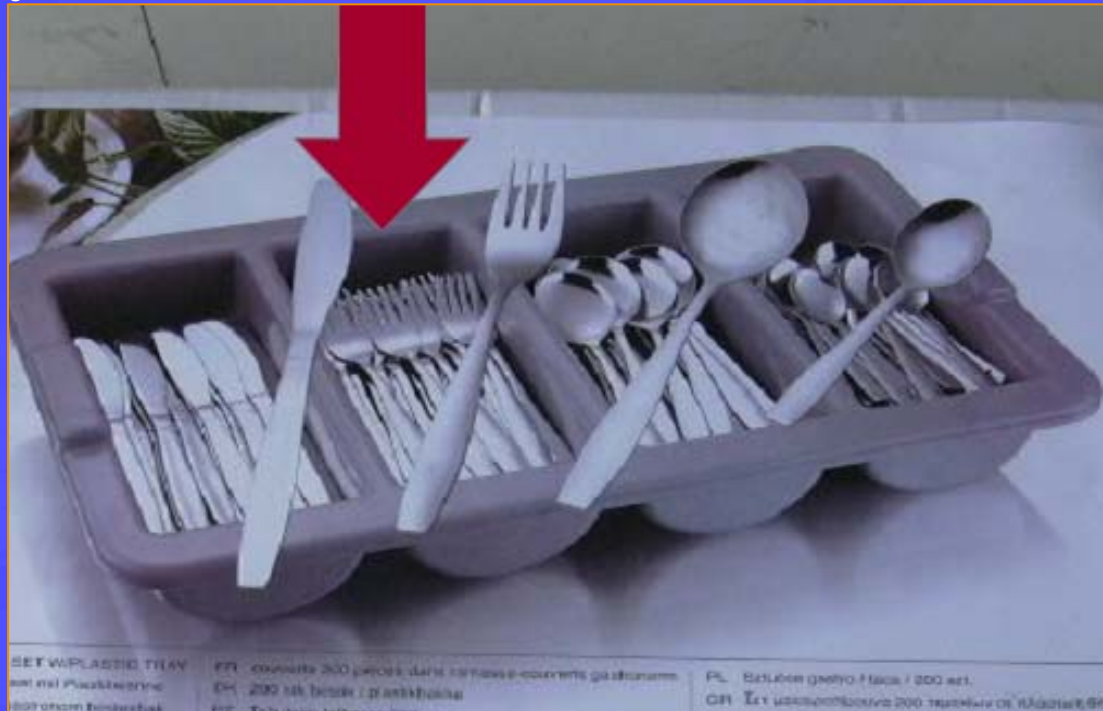
### ◇ Shrinkage package



## The product packing knowledge

There are so many kinds of packing way for protection product under safety.

### ◇ Plastic tray



## The product packing knowledge

There are so many kinds of packing way for protection product under safety.

### ◇ Combinatorial package



## The product packing knowledge

### The unit package of product

#### ◆ Master carton



## The product packing knowledge

### The unit package of product

#### ◆ Gift box



## The product packing knowledge

### The unit package of product

#### ◇ Display box



## The product packing knowledge

The unit package of product

◇ Display box (try-me box)



## The product packing knowledge

### The unit package of product

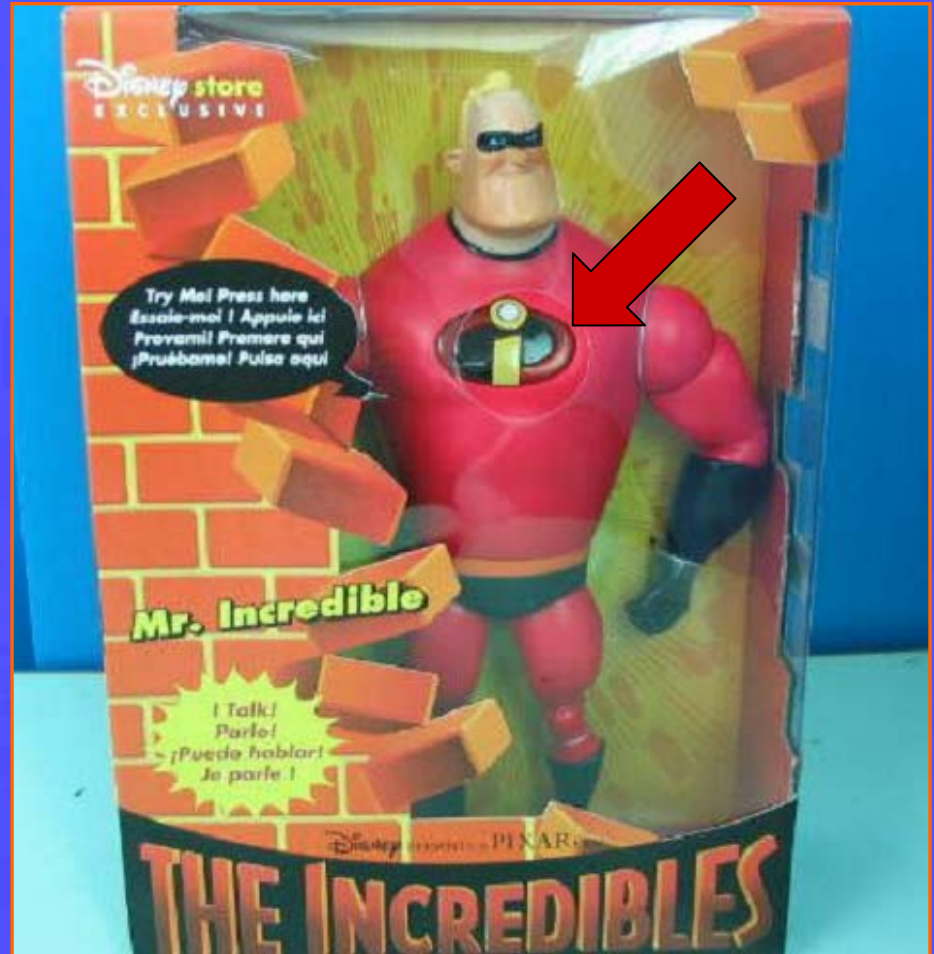
#### ◇ Window box



## The product packing knowledge

The unit package of product

◇ Window box (try-me box)



## The product packing knowledge

The unit package of product

◇ Plastic bag (hanging bag)



## The product packing knowledge

### The unit package of product

- ◆ Blister card package
- ◆ Clamshell package



## The product packing knowledge

### The unit package of product

#### ◇ Gift box and polybag



## The product packing knowledge

The unit package of product

◇ PVC tray / tube









## The product packing knowledge

### The unit package of product

#### ◇ Mail box



## Plastic identification codes

	Polyethylene Terephthalate (PET)	High Density Polyethylene (HDPE)	Polyvinyl Chloride (PVC)	Low Density Polyethylene (LDPE)	Polypropylene (PP)	Polystyrene (PS)
Plastic ID Code	 PET	 PE-HD	 PVC	 PE-LD	 PP	 PS
Clarity	Clear	Translucent	Clear	Translucent	Translucent	Clear
Moisture Barrier	Fair to Good	Good to Excellent	Fair	Good	Good to Excellent	Poor to Fair
Oxygen Barrier	Good	Poor	Good	Poor	Poor	Fair
Max. Temperature	120F	145F	140F	120F	165F	150F
Rigidity (Stiffness)	Moderate to High	Moderate	Moderate to High	Low	Moderate to High	Moderate to High
Resistance to Impact	Good to Excellent	Good to Excellent	Fair to Good	Excellent	Poor to Good	Poor to Good
Resistance to Heat	Poor to fair	Good	Poor to Fair	Fair	Good	Fair
Resistance to Cold	Good	Excellent	Fair	Excellent	Poor to Fair	Poor
Resistance to Sunlight	Good	Fair	Poor to Good	Fair	Fair	Poor to Fair



**Remark:**

Plastic ID Code "7" is for the other plastics except above mentioned 6 groups.

**OTHER**

## Symbol on toys (EN71-6)

- European standard specifies requirements for the use and design of a graphical symbol for age warning label on toys not suitable for children under 3 years of age.
- The purpose of the symbol is to inform adults that the toy might be hazardous to a child under 3 years of age.
- The age warning, whether it is given by the symbol or in written words, shall appear either on toy itself or on its retail packaging.

The design shall be as shown in figure 1.

The details of the design shall be as follows:

- the circle and the stroke shall be red;
- the background shall be white;
- the age range and the outline of the face shall be black;
- the symbol shall have a diameter of at least 10 mm and the proportions between its different elements shall be such as those prescribed in figure 1;
- the age range for which the toy is not suitable shall be expressed in years, i.e. 0-3.



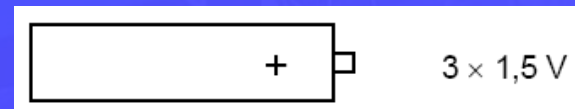
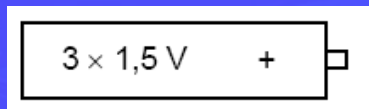
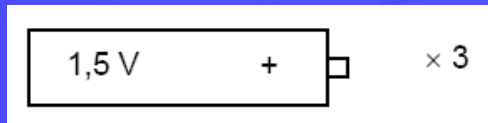
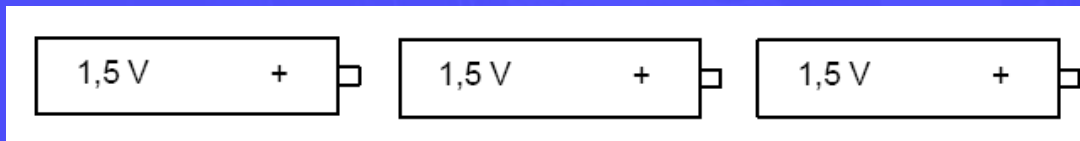
## Symbol on electric toys (EN62115)

Battery toys with replaceable batteries shall be marked with

- the nominal battery voltage, in or on the battery compartment;
- the symbol for d.c., if the toy has a battery box.

If more than one battery is used, the battery compartment shall be marked with the shape of the batteries in proportional size, together with their nominal voltage and polarity.

Examples representing three batteries are



## Symbol on electric toys (EN62115)

7.3 When symbols are used, they shall be as follows:



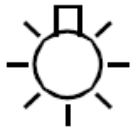
[symbol 5031 of IEC 60417-1]

direct current



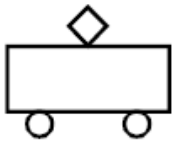
[symbol 5032 of IEC 60417-1]

alternating current



[symbol 5012 of IEC 60417-1]

lamp



[symbol 5219 of IEC 60417-1]

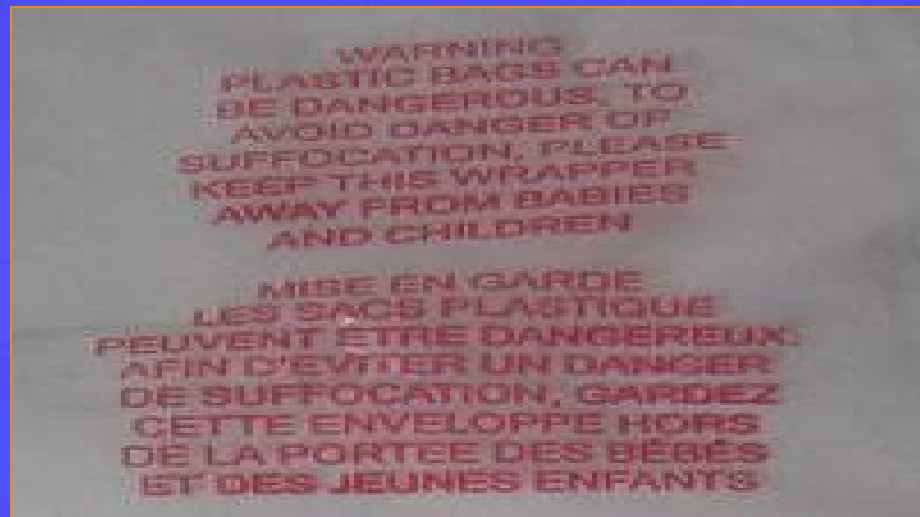
safety isolating transformer  
for toys (symbol for  
**transformer toys**)

## Warning word on toy bag

Toy bags with opening perimeter greater than 380mm(7 inch) should have warning word on bag:

**WARNING: PLASTIC BAGS CAN BE DANGEROUS. TO AVOID DANGER OF SUFFOCATION KEEP THIS BAG AWAY FROM BABIES AND CHILDREN**

and bag should contain ventilation holes.



## The shipping carton packing knowledge

### Corrugated Board :

◇ Construction : linerboard and medium

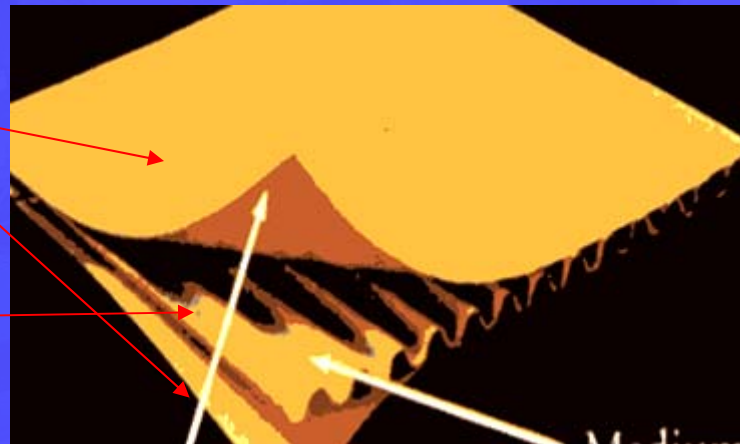
Material : Heavy paper ---containerboard

Facings---kraft linerboard

Medium---one-ply sheet, hardwood or recycled fiber

Linerboard  
(flat facing)

Medium  
(fluted wavy)



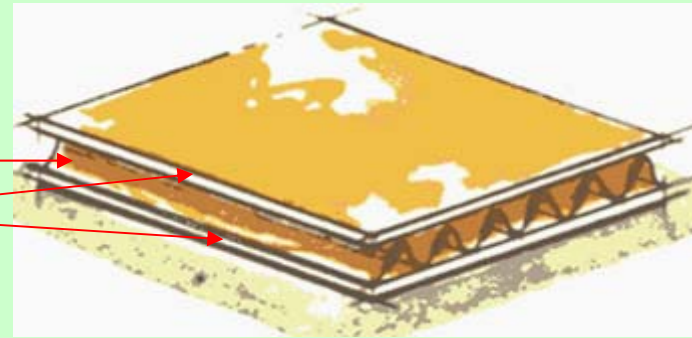
## The shipping carton packing knowledge

### ◆ Four types combined board

**a. Single Face**  
one medium  
one liner board  
(for protective wrapping)



**b. Single Wall  
(Double Face)**  
one medium  
two liner boards

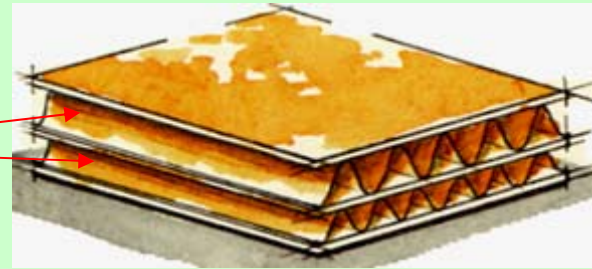


## The shipping carton packing knowledge

### ◇ Four types combined board

#### c. Double Wall

two mediums  
three liner boards



#### d. Triple Wall

three mediums  
four liner boards



## The shipping carton packing knowledge

### ◆ Flutes

**Profile:** arches with proper curve--- the strongest way to span space  
**Flutes as arches--** resist bending and pressure, support weight, as cushion.  
**Proper curve:** between U and V (Also has its advantages)  
**Flutes also as** a insulator to protect sudden temperature changes  
**Vertical linerboard** provides strength; protects from damage.

**Several standard shapes**  
**(A,B,C,E,F...),**

**Contrast:**

**A-flute ---- the largest profile**

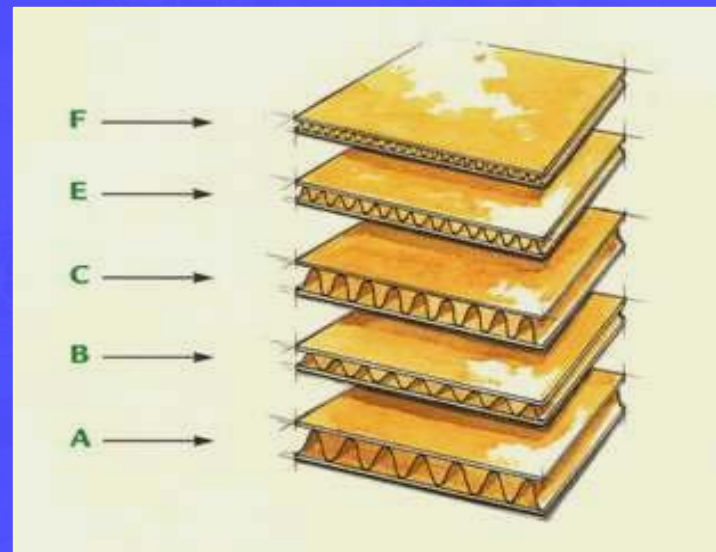
**B-flute ----smaller than A**

**C-flute ----between A and B**

**E-flute ---- smaller than B**

**F-flute ---- micro-flute**

**New flute---Macro-flute**



## The shipping carton packing knowledge

### ◇ Combined board

Different flute profiles combined in one board, one layer of medium might be A-flute while the other C-flute.

#### Standard flute configurations

<i>Flute</i>	<i>Flutes/ m</i>	<i>Flutes/ ft</i>	<i>Thickness *</i>	<i>Factor</i>
<b>A</b>	<b>100~120</b>	<b>30~36</b>	<b>4.67 mm</b>	<b>1.54</b>
<b>B</b>	<b>145~165</b>	<b>44~50</b>	<b>2.46 mm</b>	<b>1.32</b>
<b>C</b>	<b>120~140</b>	<b>36~42</b>	<b>3.63 mm</b>	<b>1.42</b>
<b>E</b>	<b>280~310</b>	<b>86~94</b>	<b>1.19 mm</b>	<b>1.27</b>

## The shipping carton packing knowledge

### Comparison of corrugated board characteristics

<i>Characteristic</i>	<i>A-Flute*</i>	<i>B-Flute</i>	<i>C-Flute</i>	<i>E-Flute</i>
<b>Stack strength</b>	best*	fair	good	poor
<b>Printing</b>	poor	good	fair	best
<b>Die cutting</b>	poor	good	fair	best
<b>Puncture</b>	good	fair	best	poor
<b>Storage space</b>	most	good	fair	least
<b>Score/bend</b>	poor	good	fair	best
<b>Cushioning</b>	best	fair	good	poor
<b>Flat crush</b>	poor	good	fair	fair

## The shipping carton packing knowledge

Export carton condition:

- ◆ Single wall corrugated paper.  
(3 ply)



## The shipping carton packing knowledge

Export carton condition:

- ◆ Double wall corrugated paper.  
(5 ply)



## The shipping carton packing knowledge

Export carton condition:

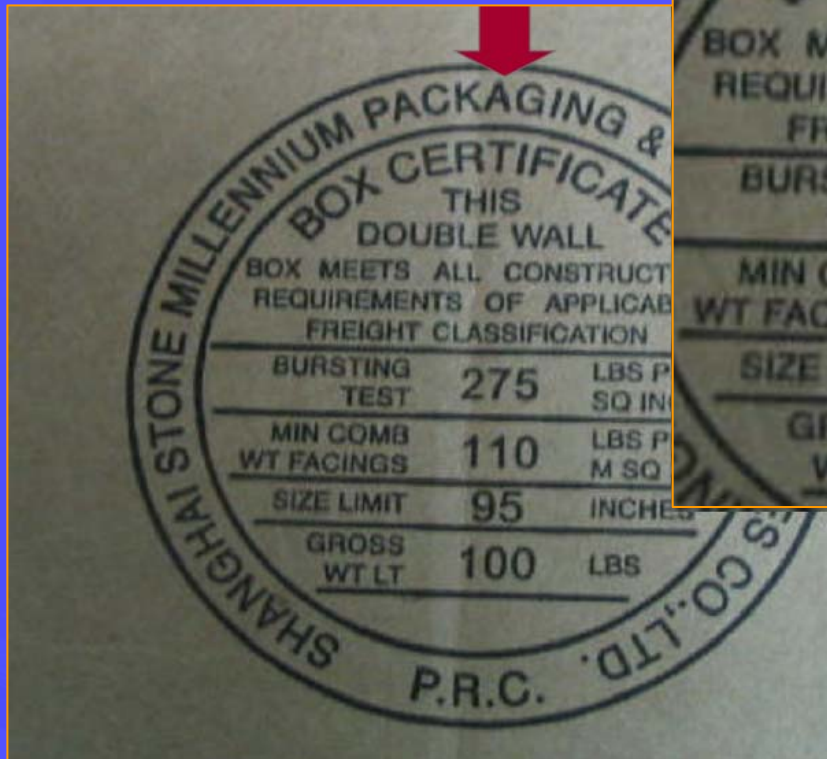
- ◆ Triple wall corrugated paper.  
(7 ply)



## The shipping carton packing knowledge

Marking on carton:


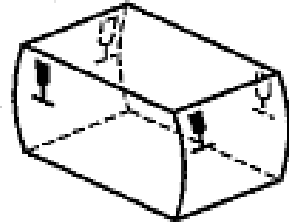

◆ Box certificate chop.


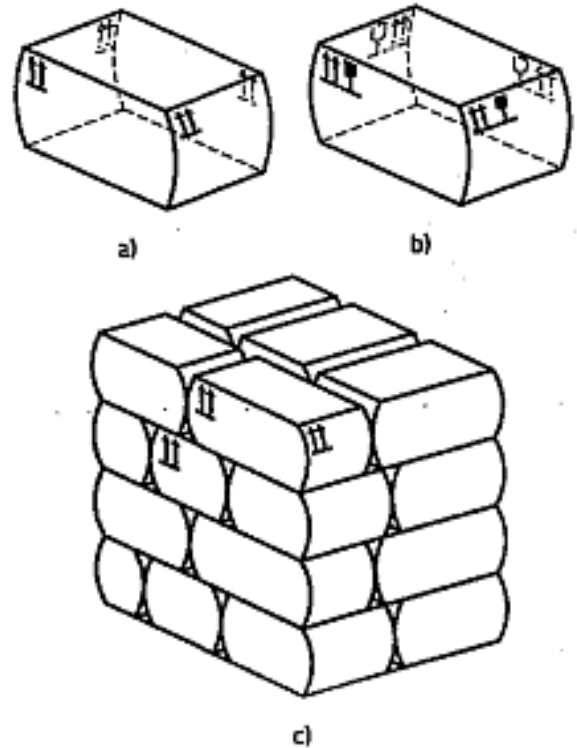





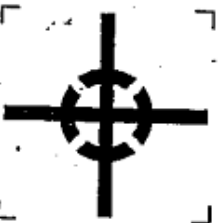
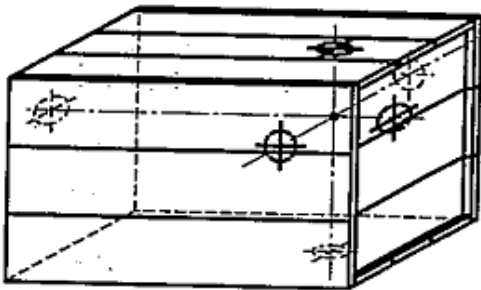
## The shipping carton packing knowledge




### Marking on carton:




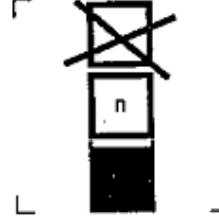
#### ◆ Warning mark (ISO 780-1997).



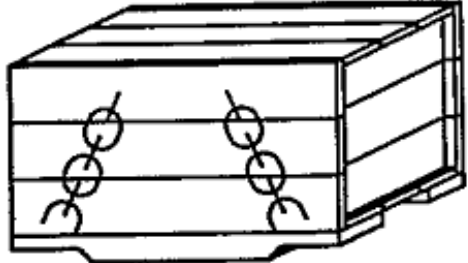
No.	Instruction/ Information	Symbol	Meaning	Reference/Remarks
1	FRAGILE		Contents of the transport package are fragile therefore it shall be handled with care.	ISO 7000, No. 0621 Example of application: 
2	USE NO HAND HOOKS		Hooks are prohibited for handling the transport package.	ISO 7000, No. 0622


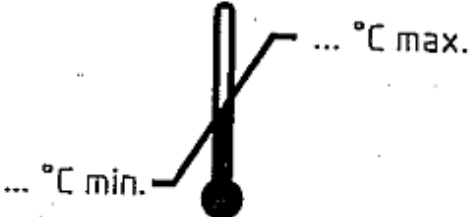
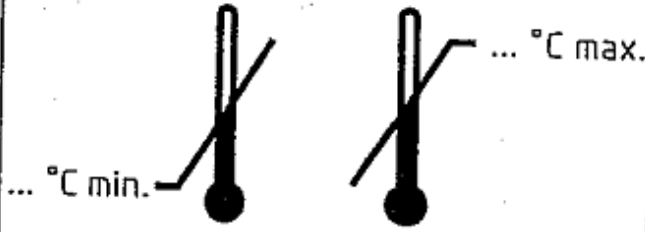
<p>3</p>	<p>THIS WAY UP</p>		<p>Indicates correct upright position of the transport package.</p>	<p>ISO 7000, No. 0623 Example of application:</p> 
<p>4</p>	<p>KEEP AWAY FROM SUNLIGHT</p>		<p>Transport package shall not be exposed to sunlight.</p>	<p>ISO 7000, No. 0624</p>

No.	Instruction/ Information	Symbol	Meaning	Reference/Remarks
5	PROTECT FROM RADIOACTIVE SOURCES		Contents of the package may deteriorate or may be rendered totally unusable by penetrating radiation.	ISO 7000, No. 2401
6	KEEP AWAY FROM RAIN		Transport package shall be kept away from rain.	ISO 7000, No. 0626
7	CENTRE OF GRAVITY		Indicates the centre of gravity of the transport package which will be handled as a single unit.	<p>See 2.4.1 and 2.4.3 ISO 7000, No. 0627 Example of application:</p> 
8	DO NOT BOLL			

8	DO NOT ROLL		Transport package shall not be rolled.	ISO 7000, No. 2405
9	DO NOT USE HAND TRUCK HERE		Hand trucks shall not be placed on this side when handling the transport package.	ISO 7000, No. 0629
10	USE NO FORKS		Transport package should not be handled by forklift trucks.	ISO 7000, No. 2406

No.	Instruction/ Information	Symbol	Meaning	Reference/Remarks
11	CLAMP AS INDICATED		Clamps shall be placed on the sides indicated for handling the transport package.	See 2.4.1 ISO 7000, No. 0631
12	DO NOT CLAMP AS INDICATED		Transport package should not be handled by the clamps on the sides indicated.	ISO 7000, No. 2404
13	STACKING LIMIT BY MASS		Indicates the maximum stacking load permitted on the transport package.	ISO 7000, No. 0630
14	STACKING LIMIT BY NUMBER		Maximum number of identical packages which may be stacked on one another, where "n" is the limiting number.	See 2.4.4 ISO 7000, No. 2403

15	DO NOT STACK		Stacking of the transport package is not allowed and no load should be placed on the transport package.	ISO 7000, No. 2402
16	SLING HERE		Slings shall be placed where indicated for lifting the transport package.	<p>See 2.4.1 and 2.4.3 ISO 7000, No. 0625 Example of application:</p> 

No.	Instruction/ Information	Symbol	Meaning	Reference/Remarks
17	TEMPERATURE LIMITS		Indicates temperature limits within which the transport package shall be stored and handled.	<p>ISO 7000, No. 0632</p> <p>Examples of applications:</p> <div style="text-align: center;">  <p>a)</p> </div> <div style="text-align: center;">  <p>b)</p> </div>

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