



सत्यमेव जयते

# PARTICIPANT HANDBOOK



Apparel

Language:  
English

## Packer



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National  
Skill Development  
Corporation

Transforming the skill landscape



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# PACKER



## Preface

This book has been written with the idea of assisting trainees with proper field experience of **packaging**. As a profession, packaging requires team work, commitment, capability to detect fault in packaging and packaging products aptly. A theoretical knowledge of the job role, can ideally provide a strong support along with hands-on training.

This book reflects on the job role of a **packer** that includes knowledge about types of packaging tools, equipment, prevention from workplace hazard, qualities that the individual must possess to grow in this industry, etc. You will learn about packaging regulations and other such norms related to the Indian Packaging market/ industry.

Different types of packaging and sealing tools have been explained here along with images, so that you can have a complete idea regarding the regular tools and equipment that you would need to work with. All of these have been covered in the book. You will be taught the importance of code of conduct and communication as well.

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# Chapter 1

## Introduction to the Industry

### Learning Outcome:

After attending the session, the trainees would be able to:

- Know about the importance of packaging

### Pre-Session Activity:

- The trainer will hold a group discussion on packaging

### सेसन पूर्वैनी प्रवृत्ति :

- तावीम आपनार पेकेजिंग उपर समूह यर्या गोठवशे

## Unit 1.1: Packaging

### Unit Objective:

- To understand about packaging

Packaging is said to be the art, science and the technology for protecting goods by enclosing them to distribute, store, use or sell them. The term may also refer to the evaluating, designing and producing item or product packages. This is an entire process of preparing goods for transport or shipping, warehousing, sale, logistics and reaching the products to the end consumer. It is an coordinated system of containing items, protecting them to preserve so that these could be transported and sold.



### Advantages of packaging

- **Protection of barrier:** A properly packaged box would be a perfect barrier to water vapor, oxygen, water, dust, etc. Some packages even consist of oxygen or desiccants along with absorbers in order have the shelf life increased. Food packages have the feature of modified atmosphere or atmosphere controlling feature.
- **Physical protection:** Objects that are enclosed within a package might need protection from vibration, mechanical shock, temperature, compression, electrostatic discharge, etc. These are provided by the right process of packaging.

- **Marketing:** Labels and packaging are used by marketers often to attract potential buyers to buy their products. Physical and graphic design of a package is very important these days and it had been gaining momentum since the last few decades. Often packaging is designed to reflect the brand image of the company.



- **Containment:** Smaller objects could be grouped together in a single package for a specific reason of better selling and storage. For instance, a box of 1000 pens would need less physical support than single pens that are 1000 in number. Powders, granular materials and liquids require containment.
- **Informative:** Labels and packages are used to communicate the use, recycling process, disposal or transportation of the product or the package. With food, chemical, medical and pharmaceutical items, certain information is shared. There are labels and packages that are used for the purpose of tracing and tracking. A lot of products may include their lot and serial numbers, mentioned on the packaging. The information would ideally include the expiry date of a product.





**Exercise:****1. Fill in the blanks:**

- a) Packaging is said to be the art, science and the \_\_\_\_\_ for protecting goods.
- b) A properly \_\_\_\_\_ box would be a perfect barrier to water vapor, oxygen, water, dust, etc.
- c) Physical and \_\_\_\_\_ design of a package is very important these days and it had been gaining momentum since the last few decades.
- d) \_\_\_\_\_ and packages are used to communicate the use, recycling process, disposal or transportation of the product or the package.

**Summary:**

- Packaging is an entire process of preparing goods for transport or shipping, warehousing, sale, logistics and reaching the products to the end consumer.
- Smaller objects could be grouped together in a single package for a specific reason of better selling and storage.
- Labels and packages are used to communicate the use, recycling process, disposal or transportation of the product or the package.
- Some packages even consist of oxygen or desiccants along with absorbers in order have the shelf life increased.



## **Chapter 2**

# **Plan and Organize Packing Processes**

**(AMH/N1407)**  
(એએમએચ /એન 1407)

**Recall Session:**

- Packaging is said to be the art, science and the technology for protecting goods by enclosing them to distribute, store, use or sell them.
- It is an coordinated system of containing items, protecting them to preserve so that these could be transported and sold.
- Some packages even consist of oxygen or desiccants along with absorbers in order have the shelf life increased.
- Smaller objects could be grouped together in a single package for a specific reason of better selling and storage.
- With food, chemical, medical and pharmaceutical items, certain information is shared.

**Learning Outcome:**

After attending the session, the trainees would be able to:

- Know about different packing tools and equipment
- Learn about types of packaging
- Know about types and sizes of carton boxes
- Know different types of garment related to packaging

**Pre-Session Activity:**

- The trainer will hold a 'Quiz Contest' on the 'Advantages of Packaging'.

## Unit 2.1 Knowledge about Packing Tools and Equipment

**Unit Objective:**

- To learn about different types of equipment and tools for packaging
- To know about the categories of equipment used for sealing a package

Packing tools are required in different types of industry. Small businesses need less support from packers while manufacturing and distribution businesses are in more need of these professionals. Packing tools are essential since these can suffice different needs. Some of the common packing tools would be plastic bags, box cutters, cardboard boxes and packing tapes.

- **Cardboard boxes:** These are used for holding items. The items or products are kept inside and then the boxes are secured with bubble wrap, newspapers, packing peanuts and other such types of materials used for packing. These boxes are used for transporting larger quantities of merchandise to store, generally from a plant for manufacturing. These protect the products till the buyer would get it to home and then set up for use.



Cardboard boxes are available in different shapes, though these are generally folded in a shape which will be interlocked in a manner.

- **Box cutters or utility knives:** These are used generally for cutting or opening a cardboard box or a tape.

These are used for other important cutting requirements.

- **Plastic bags:** This type of bag is needed for product packing and gives protection to the packed items. The plastic bags are known keeping items totally dry, dust-free and also safe from any type of damage.



Mostly, products are kept in the plastic bags and then placed inside a cardboard box, as this is a very organized manner of conserving and keeping the items.

- **Plastic tape:** A very common tool required for packing is a plastic tape that will fit on any dispenser. The serrated edge of the dispenser is known to cut the tape at the time it is stretched across the packing box.



This is done to give a proper and sound sealing to the packed box. One more method of packing involves the use of threaded paper of a form that will fit the dispenser with the use of water. The water is known to activate the tape's glued side when it is dispensed.

- **Plastic steel strap:** This type of tool would crimp a bigger plastic strap to put it around pallets of boxes in order to have everything held in place, during shipping.



These straps are seen in steel along with a crimp tool that is known to fasten straps to metal bracket in order to hold the straps in place. These are sturdy and can take up a lot of pressure without any damage.

- **Plastic wrap or shrink wrap:** This is a type of packing tool that is folded around packing boxes on the full pallets in order to offer further support and make it easy while moving the box.



As the pallet is known to be stacked completely with packages for shipping, the shrink wrap would be folded around all the boxes and pallets.

### Unit 2.1.1: Categories of Sealing Equipment

- **Heat Sealing Equipment**

Tight seal for products is possible with heat sealing. For instance, heat gun can be used for maintaining an airtight seal for the shrink wrap products. Following are the types of **heat sealing equipment**.

- **Cellophane or hand crimper:** This is a type of heat sealer that is keeps the products inside packages from falling out. Since this is portable, it can be used anywhere and can seal as much as a 6 inches length.



A cellophane sealer would ideally use 110 volts or 50 watts and has a feature to control temperature.

- **Heat gun:** These are lightweight, versatile and can be used easily. The machines come with an on and off fingertip control feature. The machine is easy to operate and can shrink wrap the products efficiently and that too in speed.



The machine has air velocity features and settings and can definitely shrink the PVC within a few seconds.

- **Heating elements:** These elements are made in a manner to remain on the end of connectors. These are mostly available in round or flat shape. For heat sealing polyethylene bags, flat wires are used. On the other hand, for cutting and sealing the shrink bags, round wires are used. Double impulse sealers are known to have two heating elements which are located on the bottom and top for the purpose of quick penetration with heat. Round wires are more likely to be used for shrink bags, shrink film and also poly tubing as it is required for sealing and cutting applications.
- **Impulse heat sealer:** The impulse heat sealers are made in a manner that these can be regularly used at the time of sealing thermoplastic films.



The poly bag would be placed between the seal bars and pressed softly down and then released to have the bag sealed.

- **Shrink wrap system:** These include one machine for shrink wrap and a handheld gun for heat. The heat gun gives changeable speed options (normally two) for shrinking.



Before applying the heat gun, it is important to have the heat gun adjusted at a right distance from the film since this offers the correct idea of the distance and the way to hold the gun. It also has a sealer (an impulse sealer) that is useful for a smaller amount of output.

- **Teflon tape:** This is an ideal element for protecting the shrink sealers and poly bags. It also becomes a protective barrier for the hot wire contacts.



- **Wholesale Plastic Pallet Cover Bags**

Plastic pallet cover bags are required for protecting items or products from dust and dirt. These are also helpful in prevention of scattered loads on any pallet.



These are gusseted covers of pallet and also have sides that are pleated. These pleated sides could be expanded almost to a standard pallet's width.

- **Wholesale Poly Mailer Bags**

The wholesale poly mailer bags are ideal for shipping and mailing requirements. These are tamper and water proof.





Often these can be without perforations below the closure of permanent tape. The non-perforated mailers are more preferred since these are known to give sound security, though the perforated mailers are known for their convenience.

- **Durable, High Quality Mailers**

These mailers are with an exterior and interior that are differently colored. The substances used for these are strong and sturdy and hence these poly mailers are known for protecting goods from different exterior elements as well as moisture at the time of shipping or packaging.

- **Shrink Film and Systems**

These are made of polyolefin and are very much preferred since these offer flexible storage and a stronger seal than other options. The polyolefin is devoid of any chloride and it would not get softened or hardened suddenly like the PVC shrink film.

- **Polyolefin Shrink Film:** The polyolefin is a material that has thermoplastic properties and thus shrinks if heated. The shrink film is nowadays used widely around the world and it is known to have a lot of advantages while the disadvantages are few. Polyolefin is an odorless substance and it would not get hard or soft in sudden temperature changes.



- **PVC Shrink Film:** PVC is a commonly produced plastic and is used a lot in the packaging industry. The **PVC shrink film** has a chemical substance called chloride that is known for a strong smell if it is cooled or heated. Due to this, proper ventilation is needed when using the **PVC shrink wrap**. The element is ideal for shrink tunnels and can be afforded easily than the polyolefin shrink film. It prevents tampering and keeps items safe from outside elements due to its tight fit cover (which happens once heat is applied to it).

- **Shrink Wrap System:** These systems are known to be a complete protection for the items. The system ideally includes a shrink wrap machine along with a handheld gun. There is a heat gun that gives two options of speed for shrinking.
- **Tape-Box Sealing: Clear or Printed**

These are used for securing the mailers, boxes along with bags. The sealing tape is known for keeping the products or items closed and secured well at the time of transporting them.

**Bag Sealing Tape:** These are selected from different colors that are used for the coding parts along with other items that may require labeling. For using this correctly on cellophane or poly bags, one needs to wrap the tape around the bag's neck, in order to have the contents sealed well inside the bag.



The sealing tape is real easy and fast since there is only one motion that with which the wrapping is done and also the tape sticks to itself. Used for both cello and poly bags, these are versatile and are easy to dispense.

- **Sealing Tape:** This offers secured sealing for the corrugated boxes and also for other packages. The sealing tape is mostly made of a polypropylene film that resists moisture and also with an acrylic adhesive.



The adhesive is very strong since it is resin-based and can keep things well bonded. Due to its resilience to sunlight and other external factors, it can also endure fluctuations in temperature.





**Exercise:**

**1. State what is the category of the following:**

- a) Box cutter, cardboard box, plastic tape, plastic steel strap
- b) Heat gun, telfon paper, cellophane
- c) PVC shrink film, polyolefin shrink film

## Unit 2.2 Knowledge about Different Types of Packing

### Unit Objective:

- To learn about different packaging types

### Importance of Packaging

Packaging is known to protect products that can be distributed in the market for storage or sale or for some other purpose. The term mostly refers to the process of evaluating, designing and also production of packages. Some of the common types of packaging options would be bags, boxes, cans, cartons, bottles, wrappers, containers and envelopes.



With increase in the packaging method demand, different brands have started to find techniques and sell products with packages that are designed according to the customer preference. Strong and attractive packaging are known to help products from getting broken and also these can grab the attention of target audience.

### The basic types of packaging methods are:

- Pharma Packaging
- Flexible Packaging
- Anti-corrosive Packaging
- Plastics Packaging

### Pharma Packaging

This is also called drug packaging since the packaging methods are used for medicine or pharmaceutical operations right from the distribution of it to reaching it to the end consumers. The packaging provides drug safety, handling and delivery convenience along with containment.

## Packaging



One of the major tasks that this packaging type performs is that it brings to the end users blood and its products, life-saving medicines or drugs, surgical devices, nutraceutical powders, semisolid and solid dosage forms, etc. This type of packaging is of utmost importance as it is involved in dispensing and dosing.

### The methods involved are:

- Primary Packaging
- Secondary Packaging
- Tertiary Packaging

### These are found in the following packages:

- Bottles
- Counterfeiting
- Blister packs
- Times Dosing

### Flexible Packaging

The name comes from the flexible elements or materials that are used for packaging and sealing. These help in retaining the freshness of the content. It could be the way the packages are moulded in different shapes or the way food flavor and safety are preserved that this is highly popular among the manufacturers.



For food packaging, this is an ideal choice and the package would be long-lasting (if the items are stored correctly). Flexible packaging takes less materials and is also environment friendly.

### Anti-corrosive Packaging

It refers to the metal surface's protection from getting corroded in the environments that can be highly corrosive. Corrosion can be well prevented with this type of packaging. Materials like oil, bags, VCI bubble film, chips, paper, etc. can be used in parts of anti-corrosive packaging since these can prevent the goods from getting exposed to different climate zones.



This packaging can be used ideally for good export over long distances. This is applicable for long-term storing for the metal items that are highly sensitive to corrosion.

#### Methods for Anti-corrosive Packaging:

- Coating of liquids or oils
- VCI (Volatile Corrosion Inhibitors) Films and Papers
- Aluminum barrier foil with the use of desiccants in combination

#### The method is ideal for the following:

- CKD shipments

- Shipping or export of goods by moisture or sea prone environments
- Laying of planes and machines temporarily
- Shipment of unassembled parts
- Storage of metallic goods for longer periods of time

### Plastics Packaging

This is used in cases of variety of items like non-perishable and fragile items. These are used by plastics packaging businesses. The goods with lesser life would be affected by the changes in climate easily. The goods or items would be finally damaged and this packaging is required as it prevents any air or dust to affect these goods.



### Trend of it:

- Development in polymer science applications
- Consumer habit changes
- More use of personal care and home care products
- Increase in growing urbanized population and more urbanization
- More plastic pouches purchased by end consumers as well as retailers.

### Advantages of this method:

- Durable
- Versatile
- Lightweight
- Cost-effective
- Sustainable