

# Guidelines on the Use of Disposable Plastic Containers





**D**isposable containers are commonly used for take-away meals in local food establishments and are usually made of plastic materials such as expanded polystyrene (EPS) (also named as foam) and polypropylene (PP). To ensure food safety, the containers must protect the food from contamination and must not transfer to the food any harmful substance in an amount that may endanger health. In addition, any deformity of the containers as a result of high temperature is also not desirable.

The primary food safety concern arising from the use of plastic disposable containers is the migration of harmful substances, such as residual monomers and heavy metals, into the foodstuff. Monomers are building blocks of polymers, which are the basic components of plastic materials and are in general non-toxic. However, residual monomers such as styrene or vinyl chloride monomers, if present, may migrate to the food and may cause adverse health effects to the consumers. Excessive exposure to styrene monomers may cause damage to the kidney and central nervous system. Moreover, heavy metals that may exist as impurities in plastic materials may migrate to the food and adversely affect food safety. Other substances (e.g. additives used in the manufacturing of plastic materials) may also migrate to the food, though these substances in general are of low toxicity.

The amounts of the above substances that may migrate to foods are related to the types and temperatures of the foods as well as the duration of contact. Therefore, the appropriate type of plastic containers should be chosen for the food of interest.

To ensure food safety, the following measures should be adopted when using disposable plastic containers for take-away meals :

## Selection of disposable plastic containers

1. When choosing disposable containers, take into account the characteristics of the foods to be contained (e.g. whether the foods are fatty, oily or acidic), the food temperatures and the duration of contact.



2. Ensure that the containers are suitable for holding food. Obtain supportive documents such as laboratory test reports from the suppliers as far as possible. Food safety references could be drawn from standards stipulated in the Mainland, the U.S. and the European Commission.
3. Obtain information or specifications from the suppliers or the labels on the containers about the applications and properties of the containers (e.g. their moisture proofing ability and resistance to heat, acid and impact) to ensure that the containers and their lids are suitable for their intended use. Properties of some commonly used disposable plastic containers are shown in **Annex**.

## Receiving of the stock of plastic containers

Inspect deliveries on receipt to ensure that :

- the packaging are intact; and
- there are no signs of contamination/damage to the stock.

## Storage of the stock of plastic containers

1. Store the stock away from all sources of contamination.
2. Practise the first-in-first-out principle in stock rotation.

## Food packaging

1. Check whether the containers are in good conditions and discard damaged ones.
2. Do not use containers with poor heat resistance property (e.g. EPS, polystyrene (PS) and polyethylene terephthalate (PET)) for holding foods over 100°C such as those just after deep-frying. Alternatively, let the food cool down (for example, deep-fried foods should be left in open air for not less than 1 minute) before putting them into such containers.
3. Use containers with good heat resistance property (e.g. PP containers) for holding foods over 100°C. For foods over 120°C (e.g. baked rice), containers with better heat resistance property (e.g. aluminium boxes) should be used.
4. Cover the containers with tightly-fitting lids to avoid spillage or contamination.
5. Use containers with good insulation property for packing hot foods in order to maintain the food temperature at 60°C or above during transportation.

6. Pack foods under hygienic conditions to minimise the risk of contamination.
7. Avoid packing foods too early in advance in order to shorten the time for the foods being in contact with the containers, and hence reduce the risk of migration of hazardous chemicals.
8. If the container is deformed after packing hot food, stop using the container and discard the food contained.
9. When using microwave ovens for reheating take-away meals, ensure that the containers are suitable for use in microwave ovens. For example, EPS containers are not microwaveable. If in doubt, reheat the food in a microwaveable container.
10. Disposable plastic containers that are microwaveable may be designed for single-use only and should not be reused or reheated in microwave ovens more than one time.

## Transportation

1. Handle and transport the foods carefully to avoid contamination.
2. Put food containers in thermally insulated boxes when transporting hot foods to keep the foods at 60°C or above.



## Management

1. Provide training and give instructions to food handlers about the proper use of disposable containers.
2. Investigate customers' complaints, if any, concerning the use of disposable containers. Take appropriate measures (e.g. stop using defective containers) if problems are identified.

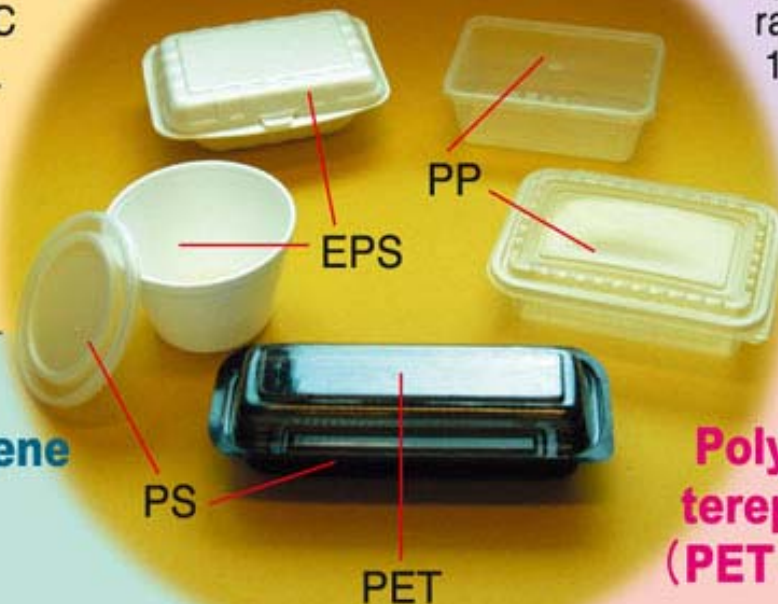
# Properties of commonly used disposable plastic containers

## Expanded polystyrene (EPS) (also named as foam)

- Poor impact resistance
- Fair chemical resistance
- Poor heat resistance
- Not suitable for food at temperature over 100°C
- Not micro-waveable

## Polypropylene (PP)

- Strong impact resistance
- Good chemical resistance
- Good heat resistance
- Suitable for food at temperatures ranged from 100-120°C for a long period
- Micro-waveable



## Polystyrene (PS)

- Poor impact resistance
- Fair chemical resistance
- Poor heat resistance
- Not suitable for food at temperature over 100°C
- Not microwaveable

## Polyethylene terephthalate (PET)

- Strong impact resistance
- Good chemical resistance
- Poor heat resistance
- Not suitable for food at temperature over 100°C
- Not microwaveable