

Which Plastic Container?

Using Food-Contact Materials Wisely



By Haidar Hajjeh

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alestine remains occupied by Israeli military forces, Palestinian governmental institutions are working especially hard to serve Palestinian citizens under difficult and complicated

circumstances. Among such institutions is the Palestine Standards Institution (PSI). Originally established in 1996 and since the year 2000 operating under the Palestinian Standards and Metrology Law No. (6), PSI provides services such as drawing up technical regulations and standards, conducting conformity assessment services, issuing quality marks, and carrying out measurement and calibration services as well as other consumer health and safety services related to safety requirements. Thereby, PSI aims to enhance the quality of the available goods and products and ensure that Palestinian products are of competitive quality on par with international products.



The foodstuff sector is among the most important sectors, as it directly impacts consumer health. PSI has harnessed many energies for this sector that includes materials and articles intended to come into contact with food. This work is particularly significant because these materials directly affect food safety. Thus, many standards and technical regulations have been issued for materials and articles such as plastic, paper, rubber, ceramics, and others. This article will focus on plastic and its contact with food because it is one of the most prevalent materials due to its affordability and ease of use.

First, we must understand that the raw material that goes into manufacturing plastic comes from natural or industrial sources that contain chemicals that may cause a risk to human health and food safety when migrating to food. For this reason, raw materials must be carefully chosen when manufacturing plastic packaging, materials, and articles intended to come in contact with food. The manufacturer must select materials with specific characteristics and parametric values and implement sound manufacturing practices suitable for plastic to ensure the safety of the final products.

As the characteristics of these materials are different and varied, we need to connect each product with its purported use. For example, hot liquids are generally not placed into water or soft-drink bottles because these consist of polyethylene terephthalate (PET), the properties of which are incompatible with hot food; it is suitable for trays and the packaging of fresh or dried vegetables and fruits. Baby bottles and soft

plastic film that is wrapped around food to preserve it, however, are made of polypropylene (PP) or polycarbonates (PC), whose properties are suitable for use on hot food. Multipurpose food containers can be used in microwave ovens or for hot food as well as for salads or foods that contain fat. Shape and design are also important: some products are easy to clean, whereas others have internal corners that hinder the process of proper cleaning – which generates the risk that bacteria may grow.



Signs, symbols, and descriptions must be considered carefully to ensure that the selected plastic materials and articles are compatible with the food they come in contact with.

So, how can consumers choose the appropriate articles or tools they want to use, and which instructions should they note to ensure that what they are using is safe, thereby reducing the risk that plastic materials and articles may transfer to food? Here, we must reference the various symbols on the packages and match them with the purpose of use.

On plastic packages and articles, we see symbols that contain



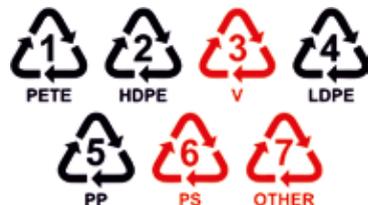
environmental and other indications for foodstuff. The numbers (1) to (7), placed within the recycling symbol, identify the type of

plastic material that has been used, which helps users determine what type of food or liquid it can come in contact with. This ensures that we can use it without causing a risk to our food or health. This most important symbol



must be present on plastic packaging material or articles is because it indicates that the material can be used for food and drinks.

The number (1) placed within the recycling sign indicates that the material is PET, which is designated for one-time use only and intended for the preserving of cold food and liquids but not hot liquids. The number (2) inside the recycling sign



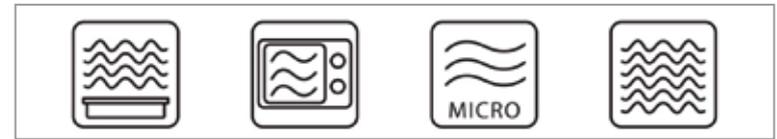
indicates that the material is high-density polyethylene (HDPE); it is found on packages or bags intended to carry food. This material neither affects nor is affected by hot food, but it is not suitable for fatty food. The number (3) inside the recycling sign means that the material is polyvinyl chloride (PVC) and not suitable for food at all!

The number (4) inside the recycling sign indicates that the material is low-density polyethylene (LDPE), which includes packaging film or bags; this material neither affects nor is affected by hot food, but it is not suitable for fatty food. The number (5) inside the recycling sign indicates PP, the safest material for various types of food; it can be used for cold or hot, liquid or solid, and fatty and non-fatty foods. For this reason, it is the most expensive among similar products. The number (6) inside the recycling sign means that the material is polystyrene (PS), which frequently is used for fast food trays; while it is safe for cold food, it should not be used for hot food because it reacts with it, creating substances that are dangerous to human health. The number (7) inside the recycling sign and "OTHER" placed below it indicate that the material is PC or something else, the main characteristic of which is firmness. The preferred use for this symbol includes water bottles that carry more than 10 liters, such as those used for water coolers, as well as baby bottles.

Sometimes, the recycling sign is used without a number, particularly with substances that are not suitable for any type of food.

Other symbols we might find on packages and materials indicate whether they are suitable for heating food in a microwave oven, such as

these signs:



The temperature degree tolerated if a material is used in an oven is indicated by this sign:



The snowflake symbol on plastic packages and materials indicates that the article may be frozen:



Industrial filed	Number of manufacturers
Plastic and nylon bags intended for the preservation of various types of food	47
Plastic food containers	21
Plastic disposables intended for food	9
Total	77

Source: Palestinian Plastic Industries Union, 2018

Selecting the appropriate plastic materials and articles depends on the end user's knowledge and awareness of the indications and symbols found on plastic products. This knowledge enables us to make the best choices and reduce the migration level of dangerous substances through foodstuff. At the same time, it is the responsibility of competent authorities to ensure that goods placed in the market comply with legislation and technical regulation

Primary substances allowed in plastic products intended to come into contact with foods (within restrictions).	1.077 substances
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Source: Technical regulation 41-2013

requirements in order to guarantee their safety. The parties responsible for placing products in the market, which includes the manufacturer, importer, and distributor, must ensure compliance with relevant legislation and conduct their business in a manner that guarantees the safety of these products.

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