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Hygienic washing of multi-use plastic tableware in the take-away sector for safe reuse

In Germany 770 tonnes of disposable packaging are currently produced every day by the take-away market. In order to avoid this huge amount of waste, the Bundestag (German federal parliament) has initiated a change in the national law ^[1]. From 1 January 2023 German catering establishments with five or more employees and a sales area of more than 80 square metres must offer the option of reusable tableware. The widespread term "obligation for reusable tableware" is misleading, strictly speaking, as it is much more of an obligation to offer multi-way solutions.

The AK Gewerbliches Geschirrspülen welcomes the initiative, but wonders how the cleaning of multi-use plastic containers will look in practice in the future?

Experience with reusable plastic containers and their cleaning in dishwashers has been available for many years. Plastic beverage cups have long been used for events such as concerts, football matches and other gatherings.

In the legal sense, multi-use food containers and reusable tableware are initially food contact materials. Accordingly, cleaning these containers and ensuring that food is not adversely affected in any way is mandatory for every food distributor.

Therefore, when purchasing multi-use packaging, attention should be paid to the possibility to fill such containers with hot food, heat them in a microwave if necessary, and clean them in a dishwasher.

With regard to dishwasher resistance and reusability, there is still no mandatory labelling for plastic containers, even though many manufacturers voluntarily make instructions visible directly on the products in the form of texts and pictograms. Except for a prohibition of misleading information, there are no legally binding requirements for the content and design of the information and pictograms.^[2] Manufacturers may rely on labelling elements in standards, such as the pictogram for "dishwasher safe" as defined in DIN standard 50275 ^[3], but they can also use their own versions. Manufacturers can rely on publicly known labelling elements, such as the pictogram for "dishwasher safe" from the former draft of DIN standard 50275-1:1985 ^[3a], or use their own versions, provided that dishwasher resistance as defined in the current DIN EN 12875-1 has been demonstrated ^[3b].

We are only aware of specifications for multi-use, and thus also for dishwasher suitability, in the form of minimum circulation figures. For example, the EU taxonomy prescribes a minimum circulation number of 10 and the US NGO "PR3 Resolve" and the World Economic Forum have published general requirements for container design (design principles) and "safety guidelines".

Although these guidelines are very useful for ensuring the basic cleanability and accessibility of all areas of reusable tableware, they lack information on suitability for dishwashers and dishwasher-safety for plastic materials.

Companies that have joined the multi-way trend and offer corresponding packaging can quickly be found online.

It is not certain whether all these companies have the quite expensive and important tests carried out by independent testing laboratories to confirm the properties. The last scandal about repeated findings of potentially harmful substances in comparable trendy items made of melamine resin-bamboo mixtures was not too long ago. [4, 5]

However, within the EU, responsible manufacturers are obliged to have reusable food contact items tested for stability and chemical innocuousness for intended use.

In the case of imports from outside the European Union, the importer becomes the main responsible party and must ensure themselves that the containers are safe before placing them on the market. If a gastronome orders the packaging himself from outside the EU, for example via online shops, then they should at least ask for a corresponding declaration of conformity [6] from the manufacturer to ensure that the purchased reusable tableware complies with the relevant regulations, if necessary, with the support of an independent testing institution. [2]

If there are no indications, nor signs, texts or pictograms for safe use visible on a multi-use container made of plastic, then a consultation with the manufacturer is strongly recommended.

The following points should be observed when cleaning in the commercial dishwasher:

For the cleaning of plastic parts in the dishwasher, the applicable DIN standards for the hygienic preparation of dishes should be taken into account, and EN 17735 [7] in the future, as well as chapter 11 HYGIENE of the AK GGS compendium of practice. [8]

Rinsing of multi-use containers before first use should be a matter of course to remove contamination from transport and storage.

Plastic parts are very light and do not have a firm hold in dishwashers. Here it is advisable to use adapted baskets, such as baskets with lids.

The cleanability is made more difficult by rapid surface changes on the plastic parts (scratches, cuts by knives, etc.). Regular inspection of the containers for damage and appropriate sorting is imperative.

Depending on the surface properties of the plastic, food colourants can be absorbed more easily than in the case of dishes made of glass, metal and porcelain for example. If strongly colouring foodstuffs are to be filled into the containers, special parts and materials must be selected that are particularly stable for this purpose.

Plastic parts generally dry more poorly than glass and porcelain due to their low heat absorption. Therefore, special plastic rinse aids and adapted drying processes are available on the market.

Depending on the process, extra floor space is also required for hygienic air drying. Manual drying by dish towels should not be used for hygiene reasons. Disposable paper could lead to additional surface stress on the plastic parts (scratches).

The drying process should be taken into account accordingly during the planning phase. Damp plastic parts must not be stacked under any circumstances.

Also, the possible undesirable absorption of flavours and odour substances into the plastic surface could lead to an impairment of the food during reuse. This must be checked individually and taken into account.

The rinsed items should be stored in such a way that they do not become contaminated again. Closed cupboards or locked containers are recommended for this purpose.

On return the containers should already be checked for damage and improper use in order to avoid unexpected impurities contaminating the dishwasher and the items to be washed during subsequent



washing program. These include cigarette residues or other non-food contaminations such as paints, varnishes, mineral oils for example.

With the growing number of individual multi-way systems for food packaging, especially in the gastronomy sector, there is now an increased danger that unsuitable packaging will conquer the market, especially in view of the obligation to offer reusable tableware for food and beverages in plastic packaging in take-away from 2023.

When purchasing multi-use plastic tableware for take-away, we at AK GGS can only recommend that all gastronomes use items that bear the voluntary multiway sign ^[9] as well as are made of materials that are designated as dishwasher-safe in chapter 10 PLASTIC ITEMS – DETAILED SPECIALIST KNOWLEDGE of the AK GGS practical handbook ^[8].

Sources:

[1] German Act on the Product Placing on the Market, the Take-Back and the High-quality Reutilisation of Packaging (Packaging Act - VerpackG) of 5 July 2017 (BGBl. I p. 2234)
Original version: <https://www.gesetze-im-internet.de/verpackg/index.html>

[2] Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02011R0010-20200923>

[3] DIN EN 12875-1 Mechanical dishwashing resistance of utensils - Part 1: Reference test method for domestic articles; German version EN 12875-1:2005
<https://www.din.de/en/getting-involved/standards-committees/nmp/publications/wdc-beuth.din21:81768883?destinationLanguage=&sourceLanguage=>

[3a] zurückgezogener Entwurf zur DIN-Norm 50275-1:1985 zur Prüfung des Verhaltens von Spülgut in Haushalt-Geschirrspülmaschinen; Beanspruchung in der Prüf-Geschirrspülmaschine
<https://www.beuth.de/de/norm-entwurf/din-50275-1/1212513>

[3b] DIN EN 12875-1 zur Spülmaschinenbeständigkeit von Gegenständen - Teil 1: Referenz-Prüfverfahren für Haushaltwaren; Deutsche Fassung EN 12875-1:2005
<https://www.din.de/de/mitwirken/normenausschuesse/nmp/veroeffentlichungen/wdc-beuth.din21:81768883>

[4] Produktwarnungen mit Suchkriterium „Geschirr“
<https://www.produktwarnung.eu/?s=geschirr>

[5] „Finger weg von Kunststoffgeschirr mit Naturmaterialien“ - Verbraucherzentrale
<https://www.vzhh.de/themen/umwelt-nachhaltigkeit/muell-verpackungen/finger-weg-von-kunststoffgeschirr-naturmaterialien>

[6] Information of the German Federation of Food Law and Food Science (BLL) on the Declaration of Conformity (DE version)
https://www.bvl.bund.de/SharedDocs/Downloads/03_Verbraucherprodukte/lebensmittelkontaktmaterialien/Information_Konformitaetserklaerung.html

[7] DIN EN 17735
Commercial dishwashing machines - Hygiene requirement and testing; German and English version prEN 17735:2021
<https://www.beuth.de/en/draft-standard/din-en-17735/341562461>

[8] COMPENDIUM OF PRACTICE COMMERCIAL DISHWASHING <https://www.akggs.de/en/compendium-of-practice/>
or
Compendium of practice for Commercial Dishwashing published by Shaker Verlag



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[9] <https://www.mehrweg.org/mehrwegzeichen/>

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