

Water-conducting household appliance

The invention relates to a water-conducting household appliance, in particular a dishwasher, having a dissolving chamber disposed in a storage container for items to be washed and serving to introduce a detergent, said dissolving chamber comprising a chamber base having at least one opening.

A device to accommodate dishwasher detergents in the form of compressed powder tablets in domestic dishwashers is known from DE 3722648 A1, which allows the compressed powder tablets to be accommodated inside the dishwasher without having an adverse effect on the wash result. This is achieved by configuring the device as a dosing container that can be affixed inside the dishwasher with at least one dosing chamber accommodating the tablet, having sides and/or base surfaces that are perforated at least in parts.

It is a disadvantage however that the spray coming from a spray device only wets the compressed power tablets insufficiently, since the base surface is only perforated in parts and sufficient liquid does not penetrate into the device for accommodating dishwasher cleaning agents. The dissolving behavior of the compressed powder tablets is therefore influenced in a negative manner, so that they do not completely dissolve. This produces a poor wash result so that the item to be washed is not clean after operation.

The object underlying the invention in the case of water-conducting household appliances of the type described in more detail in the introduction is to configure the chamber base of the dissolving chamber such that after the cleaning process, the dissolving chamber is free of detergent and the item to be washed is free of spots and clean after the operation.

This object is achieved according to the invention by the opening of the chamber base being designed in the shape of a slot.

This solution is particularly characterized in that no detergent residues remain in the water-conducting household appliance after the cleaning process and this thus ensures that the detergent has completely dissolved. This arrangement also prevents the detergent coming into contact with the items to be washed and thereby prevents the formation of spots on the items to be washed.

According to a preferred embodiment, provision is made for the slot-like openings of the chamber base to be disposed longitudinally or transversely.

The advantage of this is that the detergent is dissolved essentially during operation.

The detergent is dissolved by the fluid penetrating through the openings with the result that the active agents of the detergent can dissolve better in the washing liquor during the washing process.

According to a further preferred embodiment, provision is made for the dissolving chamber to be able to be sealed with a lid.

This measure prevents the detergent from automatically falling out of the dissolving chamber and prevents residues of the detergent from remaining in the treatment compartment after operation.

According to a further preferred embodiment, provision is made for the dissolving chamber to have one filling opening for the detergent on at least one side wall and/or on the lid.

The solution is advantageous in that the detergent is supplied to the dissolving chamber in a very user-friendly manner. This solution can also be carried out very cost-effectively.

According to a further advantageous embodiment of the subject matter of the invention, provision is made for at least the lid and at least one side wall of the dissolving chamber to be configured to allow the passage of fluid.

This measure allows the cleaning fluid to reach the dissolving chamber in order to dissolve the detergent. It similarly prevents the cleaning fluid from collecting in the container, filling this and causing the detergent to be flushed out of the dissolving chamber.

The invention is described in a description which follows with reference to an exemplary embodiment shown in a simplified manner in the drawing, in which:

Figure 1 shows a segment shown from the side and in a partial section of a dishwasher with a dissolving chamber in a basket,

Figure 2 shows a segment of the basket of the dishwasher viewed from above, with a dissolving chamber disposed on its front side

Figure 3 shows a perspective view of the dissolving chamber from above and

Figure 4 shows the dissolving chamber with an arched base viewed from the front.

Figure 1 shows a first embodiment of an inventive dishwasher 1 with a door 2, having an outer door 3 and an inner door 4. Program selection buttons 6 are disposed on a door panel 5, said program selection buttons 6 being connected to an electrical electronic control and regulation unit 7 installed inside the door 2. Various programs for running a cleaning process are stored in the memory of the electronic control and regulation unit 7. Inside the door 2 is a detergent dispenser 8 to hold detergent in the form of a block 9 and a rinse aid not shown in the figure, said detergent dispenser 8 being connected to the electronic control and regulation unit 7. The detergent dispenser 8 is however also suitable for holding liquid or powder detergent. A chamber 10, to which a filling flap 11 is assigned for sealing purposes, serves to store the detergent 9 and is disposed set back in the inner door 4. A treatment compartment 12 accessible by way of the opened door 2 and with an inner shell 13 made of stainless steel has two guide rails (not shown) on its container side walls (also not shown), on which guide rails a basket configured as a storage container 14 is held for holding items to be cleaned (not shown). The body of the storage container 14 has plastic-coated metal bars 15. A dissolving chamber 16, which is integrated in the body of the storage container 14, has side walls 17 which have a grid 18 and a chamber base 19 which has slot-like openings (not shown in Figure 1). The dissolving chamber 16 can be opened using a lid 20 comprising a fine-mesh grid, said lid being mounted in a pivotable manner about a horizontal axis 21 disposed on the dissolving chamber 16. A handle 22 is disposed on the lid 20. Alternatively, the lid 20 can also be configured as a sliding lid. A filling opening 23 is disposed on the side wall 17, in order to supply detergent to the dissolving chamber 16. A spray arm configured as a spray device 24 has a number of spray nozzles 25 on its upper side and on its lower side. In the case of spray devices 24, in particular in the case of a rotating spray arm, the dissolving chamber 16 is advantageously located on a front wall 26 in the center of the storage container 14.

Figure 2 shows a storage container 14' with the dissolving chamber 16' from Figure 1. A spray device 24' configured as a spray base with spray nozzles 25' is integrated into the body of the storage container 14'. Alternatively the spray base can also be located below the storage container 14'.

A front wall 26' and side wall 27' are assigned to the storage container. The dissolving chamber 16' is held in a detachable manner on the front wall 26' in the center of the storage container at a point predetermined therefor. To this end, the storage container 14' has a recess 28' for the insertion of the dissolving chamber 16 in order to be able to dispose the dissolving chamber 16 in a positionally accurate manner in respect of the storage container 14'. Alternatively however the dissolving chamber 16' can also be disposed on the side walls

27' of the storage container 16', nevertheless also in the manner such that the point where the dissolving chamber 16 is to be attached is predetermined by position measures on the storage container 14'.

Figure 3 shows a more detailed dissolving chamber 16' which is disposed above the spray device 21. It has, as already mentioned, four chamber walls 17' which are configured as a fine-mesh grid 18. Alternatively the chamber walls 17' can optionally also be configured as a coarse-mesh grid. The chamber base 19 of the dissolving chamber 16 has slot-like openings 19.1. The slot-like openings 19.1 are configured in a longitudinal manner in relation to the direction of the discharging jet of fluid. Alternatively, the slot-like openings 19.1 can also be configured in a transverse manner in relation to the direction of the discharging jet of fluid.

Figure 4 shows a dissolving chamber 16'' according to a second embodiment with a rectangular layout. It has four chamber walls 17'' which are configured from a fine-mesh grid 18''. Alternatively one or more small openings can be disposed instead of the fine-mesh grid 18''. Similarly a coarse-mesh grid can alternatively be used, to dissolve the detergent more quickly. A chamber base 19'' has slot-like openings (not shown) The chamber base 19'' of the dissolving chamber is arched along the longer rectangular side towards the interior of the chamber, so that the detergent, in particular powder detergent, slips down to the boundary between the chamber walls 17'' and the arched base 18''. It accumulates there, forming small piles, and cannot therefore be flushed out of the dissolving chamber 16'' immediately. This allows the detergent to be distributed more evenly during the cleaning process. Alternatively the arching of the chamber base 19'' can also be configured in a transverse manner in relation to the longer rectangular side. A filling opening 23'' is also disposed on the side wall 17'' in order to supply detergent to the dissolving chamber. A handle 22'' used for handling the dissolving chamber 16'' is provided opposite the chamber base 19'' on the exterior of a chamber lid, said handle 22''; running along the chamber base arch in the present exemplary embodiment.

The detergent 9, in particular a detergent tablet, is supplied to the dissolving chamber 16 by the user. The user seals the treatment compartment 12 using the door 2 and uses the program selection switch 6 to select a program, which essentially comprises the program steps "pre-rinse – wash – intermediate rinse – final rinse (with rinse aid) – dry" and is stored in the electronic control and regulation unit 7.

Since the chamber walls 17 comprise a fine mesh grid 18 and the chamber base 19 comprises slot-like openings 19.1, no larger detergent elements drop out of the dissolving

chamber 16 into the treatment compartment 12 and onto the item to be washed, thereby preventing the detergent 9 from being flushed out in large segments. The fine-mesh grid 18 is also configured to allow the passage of water, so the fluid can penetrate into the dissolving chamber 16 and dissolve the detergent 8.

The arch of the chamber base 19" shown in Figure 4 also ensures that the powder detergent accumulates on the side walls. This prevents the powder detergent from being flushed out of the dissolving chamber 16 already during an early phase of the washing process.

Claims

1. A water-conducting household appliance (1), in particular a dishwasher, having a dissolving chamber (16, 16', 16'') disposed in a storage container (14, 14') for items to be washed and serving to introduce a detergent (9, 9'), said dissolving chamber comprising a chamber base (19, 19', 19'') having at least one opening (19.1), characterized in that the opening (19.1) of the chamber base is slot-like.
2. The water-conducting household appliance (1) as claimed in claim 1, characterized in that the slot-like openings (19.1) of the chamber base (19, 19', 19'') are disposed longitudinally and/or transversely.
3. The water-conducting household appliance (1) as claimed in claim 1 or 2, characterized in that the chamber base (19, 19', 19'') is arched inwards.
4. The water-conducting household appliance (1) as claimed in one of claims 1 to 3, characterized in that the dissolving chamber (16, 16', 16'') can be sealed with a lid (20, 20')
5. The water-conducting household appliance as claimed in one of claims 1 to 4, characterized in that the dissolving chamber (16, 16', 16'') comprises a filling opening (23, 23') for the detergent (9, 9') on at least one side wall (17, 17') and/or on the lid (20, 20').
6. The water-conducting household appliance as claimed in one of claims 1 to 5, characterized in that at least one lid (20, 20') and at least one side wall (17, 17') of the dissolving chamber (16, 16', 16'') is configured to allow the passage of liquid.