

Manual

Duo Pack



August 2016

Washing

The washing instructions below apply to the cleaning of all CurTec packaging products that are made of polyethylene and polypropylene.

- Best results will be achieved with a washing installation that is equipped with spray nozzles or a so-called Ultra-Sonic installation.
- Best qualified detergent is a low-foaming alkaline substance with a PH-value of 10 to 12 (solvents.)
- The recommended temperature of the washing water lies between 40°C and 50°C.
- The temperature of the rinsing water can only be up to 65°C.
- Washing at maximum temperature can only take up to 35 seconds and rinsing at maximum temperature only up to 20 seconds. It prevents the plastic from warming up and shrinking.
- Increased drying of products can be effected by means of applying cold air. If warm air will be used the drying can only last up to 30 seconds at a maximum temperature of 65°C.
- The blowing and drying part of the installation needs to be adjusted to the product, so those difficult spots of the kegs can also be dried.
- For specific technical information CurTec would like to refer to the various suppliers of washing installations.

Attention! Check the thermostat and programmed times of your equipment regularly.

/ Closing

Duo Pack is suitable for the transport of hazardous goods if you apply the UN clamp (4706-00-000) following steps 3 - 5 after closing the container.



1. First fill the insert. Put the lid on the insert and press it on.



2. Secondly fill the container. Put the closed insert on the container and press it on from back to front. Duo Pack is now closed.



3. Position the clamp. Make sure that the notch for the handgrip is in the correct position.



4. Position the other clamp-half.



5. Close the clamp. Make sure that the two halves are buckled. Duo Pack is now suitable for the transport of hazardous goods.

2 Opening



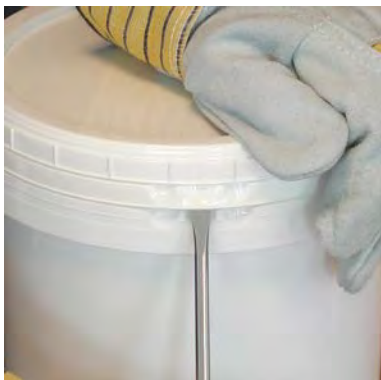
1. Break the buckle on the clamp by using a screw-driver. Insert the screw-driver into the buckle from your right-hand side.



2. Insert your screw-driver from your left-hand side and lift the right clamp-end from the buckle.



3. Remove the clamp.



4. Always remove the closed insert first! Use a screw-driver to lift the insert from the container.

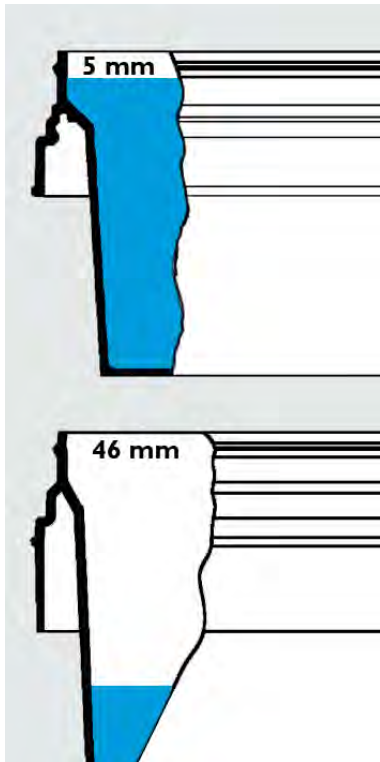


5. Gently lift the closed insert to avoid spillage of contents.



6. Again use a screw-driver to open the insert, Keep it at all times horizontal to avoid spillage.

3 Use



Filling

The temperature of the content cannot exceed 70°C. The content has to cool down to 30°C before the container can be closed. A container can be filled to a maximum of 46 mm below the rim. An insert can be filled to a maximum of 5 mm below the rim. The container can be closed according to instruction 2.

Emptying

The packaging can be opened according to instruction 2. Use the handgrip and the bottom to tilt the container and pour the contents.

Lifting

Lift and move the container by using the handgrip

Attention! Please consider the HSE regulations regarding weight and frequency restrictions for lifting.

Freezing

The plastic of which the packaging is made is resistant to temperatures of minimum -25°C. Shock load on the containers must be avoided at temperatures below -5°C.

Attention! A container filled with a water based content can only be filled up to 90% of its capacity when frozen. This prevents the contents from expanding and the container from distorting.



Air transport

CurTec advises to ship packaging in pressurized cargo holds during air transport. We also recommend a minimum filling level of 95%. Following these instructions can reduce the risk of implosion and product loss considerably.

CurTec has no control over customer applications of its packaging. It is the responsibility of the end user to test whether a filled packaging complies with relevant transport regulations. CurTec refers to the regulations mentioned in the UN certificates.

4 Static load

When stacking packaging for storage in e.g. a warehouse or cold store it is important to know what the maximum stacking load can be on the bottom pack. The stacking load depends strongly on: the keg weight, the number of packs to be stacked, the weight of interlayers and pallets, surrounding temperature, the duration of the load and the surface beneath the bottom packs. The table below shows the maximum stacking load (in kg) at a given surrounding temperature during a certain period of time placed on a flat and closed surface or pallet.

Temperature	Months	4705
≤ 0°C	0,5	115
	1	105
	3	90
	6	85
	12	75
15°C	0,5	75
	1	70
	3	60
	6	55
	12	50
25°C	0,5	55
	1	50
	3	45
35°C	0,5	40
	1	37
	3	32

The number of packs that may be stacked can be calculated on the basis of the table. It is the stacking load mentioned reduced by the carrying part of the pallet's interlayers, divided by the packaging weight. This number, with figures behind the comma smaller than eight, rounded off + 1 = total number of packs.

Example

How high can a 4705 with a content of 7 kg, at 15°C, during 1 month be stacked? $70 / 7 = 10$. The number of Duo Packs that can

be stacked is 10+1=11.

In case of an unspecific time or temperature please look in the next appropriate column. If you want to know what the stacking load is with shorter periods of time, the table in instruction 5 **Dynamic load** can be of service.

- Before stacking the kegs the temperature of the contents must equal or be lower than the surrounding temperature.
- The maximum stacking time is reduced considerably at a temperature higher than 35°C. The stacking load in the table amounts at 50°C to only 75% of the value last mentioned and at a temperature of 60°C to only 50%.
- In case a stack is higher than 2.5 metres the floor angle cannot be more than 0.5%.
- CurTec strongly advises against stacking the kegs horizontally, lying on the side. Should this be unavoidable, it has to be done with closed lids. Due to a heavy and long-term load and especially a high temperature, the kegs can distort. In case the kegs are filled again the distortion must be restored before stacking.
- In transit from one transport form to another, from storage to transport or from transport to storage, the bottom kegs must be placed highest in the new stack.

Attention! *The loads mentioned in the table can only serve as indications. CurTec always advises its customers to perform additional testing.*

5 Dynamic load

Before stacking the Duo Packs for transport it is important to know what the maximum stacking load on the bottom pack of the stack is. During transport this stacking load is called dynamic load and can be found by dividing the admissible static load from the table by a so-called safety factor. These factors are:

- 3 for transport by air
- 2 for transport by road
- 1.8 for transport by rail
- 1.3 transport by water

The static load mentioned in the table depends strongly on the temperature and time indicated: 5°C is the temperature for cooled transport, 30°C is the temperature for the average transport by road or inland waterways and 40°C is the temperature for transport in warmer surroundings. In case of an unspecific time or temperature, below 40°C, please look in the next appropriate column. In case the temperature rises even more, please be aware that at 50°C the load can only be 75% and at 60°C only 50% of the load at 40°C.

Temperature	Weeks	4705
5°C	0,5	125
	1	112
	2	105
	3	100
	5	94
30°C	0,5	59
	1	53
	2	49
	3	46
	5	44
40°C	0,5	44
	1	40
	3	35

On the basis of the table the number of containers that may be stacked can be calculated. It is the stacking load mentioned divided by the product of the keg weight and the relevant safety factor. This number, with figures behind the comma smaller than 8, rounded off + 1 = total number of containers.

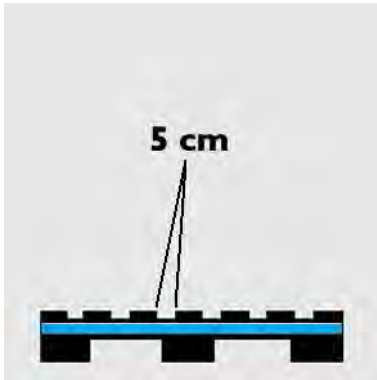
Example

How high can a 4705 with a content of approx. 7 kg, at 3°C, during 3 weeks be shipped by rail? $100 / (7 \times 1.8) = 7,9$. The number of Duo Packs that can be stacked is $8+1=9$.

- In transit from one transport form to another, from storage to transport or from transport to storage, the bottom packs must be placed highest in the new stack.
- The Duo Packs must be stowed professionally and fixed in a way that makes shifting impossible.
- For the use of pallets check instruction 6 **Palletisation**.
- For stacking and storing in a warehouse check instruction 4 **Static load**.

Attention! The loads mentioned in the table can only serve as indications. CurTec always advises its customers to perform additional testing.

6 Palletisation



Palletisation

It is important that the first layer is supported by a straight surface and that the pallet itself has an almost closed surface fitted with planks no more than 5 cm apart, which will not distort under a heavy load. Interlayers are necessary to create a solid stack. You could use e.g. a foil with a minimum thickness of 0.02 mm. We advise you not to stack any higher than 2 metres.

In case a pallet is placed on top of another pallet, the surface needs to be flat and solid to avoid pressure points on the top layer. The top (layer) needs to be flat and rigid so it can equally spread the load.



Handling of pallets

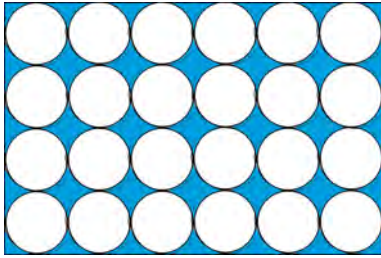
From a safety point of view CurTec recommends the transport of one pallet at a time. In order not to disturb the stack the fork of the lift truck needs to be kept almost horizontal.

Packing

We recommend the use of a shrink wrap which needs to be shrunk around the pallet as well. In addition, the bottom of the pallet needs to be stretched with foil as well. The containers at the base of a stack will carry most of the load and to avoid a collapse they cannot be deformed by overstretching the foil or over-heating the wrap.

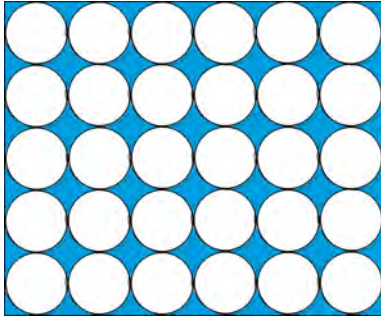
Alternatively you can use stretch foil to cover the entire pallet. Please pay attention that you use enough foil to create a stable stack and do not pull the foil too tight in order to avoid deformation of the containers.

The maximum number of filled containers per layer is:



800 x 1200 mm

24 pcs per layer



1000 x 1200 mm

30 pcs per layer

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