Manual

Nestable drums

120/150 litre

January 2018

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.*

01 Close

The UN marking on a drum is only valid if the following closing instruction is applied.

1. Place the drum on a stiff surface. Place the lid on the drum.

2. Bring the lid into the correct position by turning it counter-clockwise until it drops over the screwthread visibly and tangibily.

3. Put some downward pressure on the lid and turn it, in one move, 90° clockwards until the end of the screwthread.

4. If the notches of lid and drum barrel are facing each other, the drum is closed and can be sealed tamper evident. CurTec advises you to use Unisto Compact seals.

5. Put the tail of the sealing strip into the sealing loops of the lid and drum. Push the tail trough the eye of the sealing strip and pull close.

6. The drum is now sealed.

Remark: *Sealing the drum is not a requirement for the validity of the UN marking*

02 Open

1. When a drum is sealed, remove the sealing strip by using a pair of scissors or pliers and remove it from the sealing loops.

Attention! *Do tear the sealing strip loose. This might damage the sealing loop on the drum.*

2. Turn the lid counter-clockwise.

Unstacking
Due to the weight of the stack on top, the rubber gasket can get compressed and needs time to recover. After unstacking, CurTec strongly advises users to leave the drums in an upright position for at least 15 minutes prior to opening. This allows the the rubber gasket to return to its original shape and guarantee an optimal closure.

03 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. The drum can be closed according to instruction 1.

Lifting
The drum can be lifted with the mounted handgrips.

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

Charging the handgrip
The mounted handgrips have been designed for manual displacement of drums only. They are are not suitable for mechnical handling, such as lifting a drum with a hoist. The handgrip is suited for a brief, controlled charge of maximum 80 kg and a couple of minutes, during which the handgrip canot be torqued.

Freezing
The drums are made of plastic which is resistant to a minimum temperature of -25°C. As of -5°C, shock load on the drums should be avoided.

Attention! *The volume of drums filled with water-based contents can increase by 10%. The chances that drums will distort is real and it will reduce the stability of a drum stack on a pallet. Please maintain a maximum filling level of 90% and test the stability of a pallet stacking.*

Air transport

During air transport, the pressure drops inside a plane's cargo hold, which causes air inside a package wanting to escape. After landing, normal atmospheric pressure prevails again which, depending on the amount of escaped air*, can cause the drum wall to cave in.

CurTec packaging has not been designed to compensate large pressure differences short-term. The construction is such that a correctly closed packaging alllows air to escape relatively fast, but does not allow it to return easily.

Since CurTec has no influence on the use of its packaging by end users, they advise to test each transport mode.

It remains the responsibility of end users tp verify whether a package and content comply with relevant transport regulations. CurTec refers to the regulations mentioned in the UN certificates.

** The quantity depends on the content type (the shape and air between) and the filling degree/ level*

04 Static load

When stacking drums for storage in e.g. a warehouse or cold store, it is important to know what the maximum load on the lowest drum in a stack can be.

The stacking load depends strongly on: the weight of a drum, the number of drums to be stacked, the weight of interlayers and pallets, the ambient temperature, the duration of the load and the surface beneath the lowest drum.

The following table shows the maximum stacking load (in kg) at a given ambient temperature, during a certain period of time, for a drum placed on a flat, closed surface or pallet.

Attention! *Drums cannot be stacked into the lids: a solid intermediate layer must be placed between all layers of drums, which founds upon the lid edges and suffciently supports the drum bases.*

Max. temp in °C	0	0	0	15	15	15	25	25	25	35	35
No. of months	1	4	12	1	4	12	1	4	12	0,5	6
7512	340	340	340	310	260	227	232	195	170	190	139
7515	340	340	340	310	260	227	232	195	170	190	139

Attention! *The weights mentioned in the table have been established after simulation and can only serve as indications. CurTec recommends users to perform tests at all times.*

The table allows you to calculate the number of drums that can be stacked: Reduce the stacking weight mentioned with the relevant share of the weight of intermediate layers and devide by the weight of the drum with content. This number, with a figure after the decimal point lower than 8, rounded down is the total amount of drums that can be stacked on the lowest drum of a stack.

Example
How many 120 litre Nestable Drums (art. no. 7512) with a content weighing 80 kg can be stacked on a pallet at 15°C during 1 month?
The relevant weight share of intermediate layers is 5kg, so (310-5)/ 80 = 3.81. The number of drums that can be stacked on the lowest drum is 4.

In case of a different duration or temperature, please choose the next appropriate column. For shorter stacking durations, the table of instruction 5 (Dynamic load) can be of service.

Attention points
Before stacking the drums, the temperature of the contents must be equal or lower than the ambient temperature.

The maximum stacking time is reduced considerably at temperatures above 35°C. The stacking load in the table is at 50°C only 75% of the last mentioned value and at 60°C only 50%.

When a stack is higher than 2.5 metres, the floor angle cannot exceed 0.5%.

CurTec strongly discommends stacking drums horizontally, lying on the side.

When changing transport mode, from storage to shipping or vice versa, the lowest drums of a stack must always be placed highest in a new stack.

05 Dynamic load

When stacking drums for transport, it is important to know what the maximum load on the lowest drum in a stack can be.

For transport, this stacking load is called dynamic load and can be found by dividing the admissible static load by a so-called safety factor. These factors are:

3 *for air transport*
2 *for road transport*
1,8 *for rail transport*
1,3 *for maritime transport*

The stacking weights mentioned in the table below are indicative and depend on temperature and time: 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 a different duration or temperature below 40°C, please choose the next appropriate column. In case of even higher temperature, please consider that the dynamic load is at 50°C only 75% of the last mentioned value and at 60°C only 50%

Max. temp in °C		5	5	5	5	5	30	30	30	30	30	40	40	40	40	40
No. of weeks		0,5	1	2	3	5	0,5	1	2	3	5	0,5	1	2	3	5
	A	330	330	330	330	312	203	186	170	162	152	152	139	128	121	114
7512	***B***	240	240	240	240	225	146	134	123	117	110	110	101	92	88	82
7515	***C***	220	220	220	220	203	132	121	111	105	99	99	91	83	79	74
	D	140	140	140	140	135	88	81	74	70	66	66	60	55	53	49

A *Maritime transport*
B *Rail transport*
C *Road transport*
D *Air transport*

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The table allows you to calculate the number of drums that can be stacked: Reduce the stacking weight mentioned with the relevant share of the weight of intermediate layers and devide by the weight of the drum with content. This number, with a figure after the decimal point lower than 8, rounded down is the total amount of drums that can be stacked on the lowest drum of a stack.

Example
How many 150 litre Nestable Drums (art. no. 7515) with a content weighing 140 kg can be transported by road at 30°C during 2 weeks?
The relevant weight share of intermediate layers is 5 kg, so (111-5)/140 = 0.75. The number of drums that can be stacked on the lowest drum is 0.

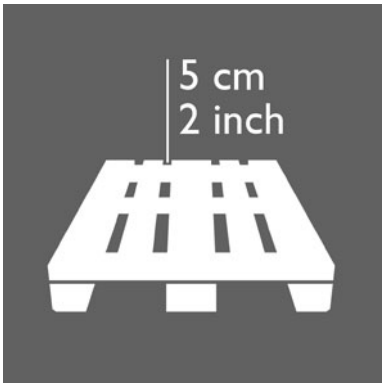
Attention points
When changing transport mode, from storage to shipping or vice versa, the lowest drums of a stack must always be placed highest in a new stack.

The drums must be stowed professionally and fixed in such a way that makes moving impossible.

For the use of pallets, see instruction 6 (Palletisation).

For stacking drums in a warehouse, see instruction 4 (Static load).

06 Palletisation



Palletisation
Each pallet should be fitted with a solid, flat intermediate layer prior to loading. A pallet should have an almost closed surface fitted with planks that are no more than 5 cm/ 2 inches apart. CurTec advises not to exceed a total stacking height of 2 metres.

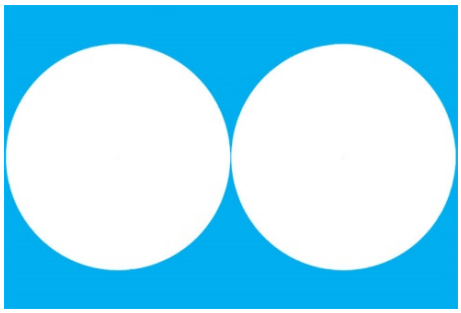
In case a pallet is placed on top of another pallet, an intermediate layer is required to enable an equal spread of the pressure. This layer should also be solid and flat.

Pallet handling
From a safety point of view, CurTec recommends to transport only one pallet at a time with a fork lift truck. In order not to disturb the stack, the forks of the truck need to be kept almost horizontal.

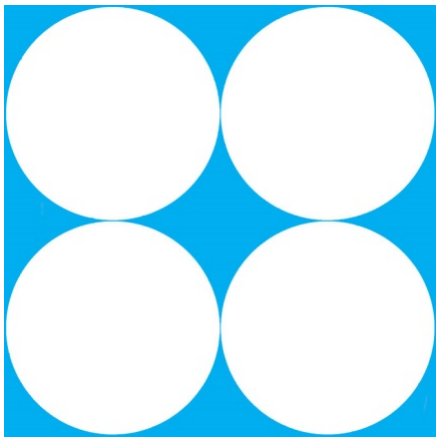
Packing
CurTec recommends the use of a shrink wrap, which needs to be shrunk around the pallet as well. In addition, the base of the pallet needs to be stretched with foil as well. The containers at the base of a stack will carry most of the load and to avoid a collapse they cannot be deformed by overstretching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

Alternatively you can use stretch foil to cover the entire pallet. Please make sure 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.

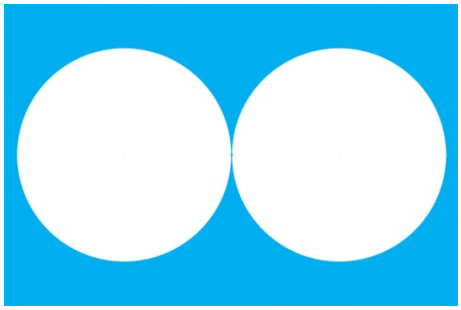
Pallet schemes
CurTec advises you to respect the following quantities per layer:



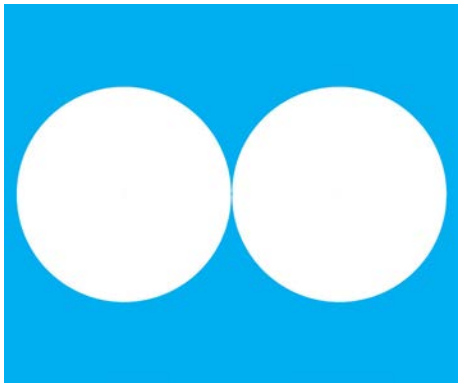
1140 x 760 mm



1140 x 1140 mm



1200 x 800 mm



1200 x 1000 mm
48 x 40 inches

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