

# SENDING CYTOSTATIC DRUGS

Hörtig Rohrpost GmbH

## Cytostatic drugs as a special transport challenge

The overriding principle when transporting cytostatic drugs is: The substance must not leak.

It must be transported in a shatterproof, liquid-tight and tightly sealable container. If the liquid leaks out, in the case of cytostatic drugs, not only is the tube network polluted, but it is also dangerously contaminated. The pneumatic tube system stands still for days and has to be cleaned at great expense.

## Hörtig solution for the transport of hazardous substances

Due to the risk of contamination, the transport of cytostatic drugs is particularly critical. A separate pneumatic tube line is therefore often installed between the pharmacy and the oncology department to meet safety requirements. While this means that only this one line has to be stopped in the event of a spill, it does not prevent the spill per se.

Our solution for transporting cytostatic drugs therefore consists of two components: A leak-proof carrier (also known as lab carrier 350L) and a special station that checks the seal of this carrier before departure. A double bottom, so to speak, for protection one can rely on.

- + Prevent leakage
- + Avoid damages
- + Protect employees

## Leak-proof pneumatic tube carrier

### Leak-tight and shatterproof

The 350L pneumatic tube carrier is completely leak-tight. It can even withstand an overpressure inside of up to 100 millibars without leaking. Our tests have shown that the material of the carrier is very resistant to breakage.

To prevent the carrier from falling over or down in the first place, it is designed to be stable. This means that it stands securely even on a slightly inclined surface.



*Leak-proof carrier 350L: designed for conveying liquids*

### **Tight, temperature-insulated inner container**

Additional protection is provided by a leak-proof inner container that is also temperature-insulated. Depending on the type of cytostatic drug, it must not exceed a certain temperature. The inner container protects the temperature of the shipped material and has capacity for one infusion bag with tubing each.



*Transporting cytostatic drugs in the inner carrier and carrier 350L*

### **Color-coding as protection against confusion**

We offer the carrier in three different easily distinguishable colors (green, red, blue). This allows one color to be specifically assigned to the transport of cytostatic drugs. The quick identifiability of these carriers is thus guaranteed.

Furthermore, this prevents laboratory samples from traveling in the same carriers as hazardous substances. Even though the protective measures make it unlikely that contact will occur, the color coding of the carriers eliminates another possible weak point.

## **Self-contained station system**

### **Limiting stations approachable by carriers with cytostatic drugs**

Pneumatic tube carriers for cytostatic drugs can be programmed so that they can only travel to the destinations for which they are intended.

For example, in the destination selection of a station in the pharmacy, only oncology would be displayed when a cytostatic carrier is entered. If unused cytostatic drugs need to be returned, the only destination option would be a station in the pharmacy.

This way, the dangerous liquids do not reach people who are not trained in their handling.

### **Station that checks correct closing of the carrier lid**

Any carrier closure mechanism is only as good as its user. If employees do not close it correctly. Therefore, in addition to the liquid-tight carrier, we recommend our matching station. After inserting the carrier, the station checks whether it is correctly sealed. Only then, it is added to the pneumatic tube system.

1. The station recognizes whether it is a carrier of cytostatic drugs and then automatically gives the user only targets assigned to cytostatic drugs on the display.
2. It then checks whether the carrier is correctly sealed and in a good condition.
3. Only then, it is added to the pneumatic tube system.

Of course, the station can also handle other container types and lengths. The station is a cooperation with the university hospital düsseldorf and will be used there as of the end of 2021.



**Only authorized removal of cytostatic drugs from the pneumatic tube station**

Caution is required not only when sending, but also when receiving hazardous liquids. We therefore recommend that only authorized persons are allowed to remove the cytostatic carriers. Only after authorization by PIN or Mifare card is the carrier given out of the station. Typically, this is realized with a receiving station with a gentle reception bowl.

*Left: Cytostatic drugs station 231 closed, Right: Cytostatic drugs station 231 opened and ready for inserting a carrier*

## Integrated solution for sending cytostatic drugs via pneumatic tube

1. Leak-proof carrier with two protection layers
2. Colour-coding the dedicated carriers for the use of cytostatic drugs
3. Limit destination selection for the dedicated carriers to cytostatic drugs destinations
4. Cytostatic drugs station that checks correct closing of the carrier lid
5. Limit carrier removal to authorized staff

