



# COLOUR-CODING OF PNEUMATIC TUBE CARRIERS

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## Colour-Coding of pneumatic tube carriers

**Colour-Coding = All pneumatic tube carriers of a specific colour are programmed to always automatically depart to a specific destination in the pneumatic tube system when entered into a station.**

For example, all red carriers can be programmed to always travel automatically to the laboratory when they are placed in a station. This does not require the user to manually enter a destination on the station's keypad.

### Speeding up the sending process

This means that the user has to perform fewer steps when sending with the pneumatic tube system. There is no need to select the destination on the station keyboard. Entering the carrier into the send slot is enough to drive it to the specified destination. The sending process is accelerated and employees have more time for more important activities.

### High user-friendliness during sending

Since the destination for the entered carrier is already automatically specified, the user cannot make any mistakes when selecting the destination at the station. This reduces the probability of false deliveries.

- **Faster sending**
- **Simpler sending process due to fewer steps**
- **Prevent cross-contamination**

### Preventing cross-contamination

Assigning specific carrier colours to specific destinations, reduces the risk of cross-contamination. Only specific carriers – namely those of one colour – are used to transport contaminated items. In the event of a spill, contamination of other sterile transport items is unlikely because they are not transported with the same carriers. It also prevents cross-contamination via particles located on the outside of the carrier.

## Example: Colour-Coding in a hospital context

### Carrier for the laboratory: e.g. Red

All red carriers are destined for the laboratory. Transport items in this category can potentially contaminate the pneumatic tube system – for example, if a sample bottle is broken. As an infection control measure, the possible route of each transport item is therefore limited to two destinations. That is, the transport item may only travel from one sending station (home station) to the laboratory and back to the home station. All other routes are blocked for red carriers.

Each station that sends laboratory samples is assigned a certain number of red carriers. To send a red carrier from the home station to the lab, the user places it in the station's send slot. The carrier will automatically travel to the lab without the user having to press a button.

After the carrier is emptied in the lab, the lab staff places it in the lab station's send slot. It automatically returns to its home station.

### Carriers for pharmaceutical items: e.g. Green

All green carriers are intended for the transport of pharmaceutical items. Items in this category should be transported as sterile as possible. For infection control purposes, carriers that transport pharmaceutical

items, never also transport laboratory samples or sent to the laboratory.

Which destinations are programmed into the carriers in this category depends largely on the organization of the hospital.

For example, if prescriptions are written on paper, they can be sent to the pharmacy via the pneumatic tube system. The pharmacy can then return the ordered items with the carrier received. In this case, the carriers are programmed to automatically travel from the sending station to the pharmacy and from the pharmacy automatically back to that station.

If prescriptions are written electronically, the pharmacy maintains a supply of green carriers and uses them to send all orders to the appropriate department. In this case, the pharmacy must enter the destination of the carriers into the station. However, to avoid errors, only matching destinations are allowed. For example, selecting the laboratory as the destination would be blocked.

Green carriers placed in any station outside the pharmacy will automatically return to the pharmacy.

<b>Transport goods</b>	Samples	Drugs	Documents, reports, general items
<b>Risk of contamination</b>	High	Low	Low
<b>Colour of carrier</b>			
<b>Start / ending</b>	<b>Laboratory</b>	<b>Pharmacy</b>	<b>Diverse</b>

*Example of colour-coding in hospital*

## Carriers for general use: e.g. blue.

All blue carriers are assigned to general use. These carriers can be sent from any station to any destination – only the laboratory is blocked as a destination.



*Laboratory in which the red carriers arrive*



*Live image of a customer benefiting from a fast and simplified shipping process thanks to colour-coded carriers. Red carriers go directly to the customer's lab when loaded – without entering the destination.*

## Technical functionality

The prerequisite for using colour-coding is the use of **carriers with RFID-chips**. All RFID carriers are equipped with a chip at each end. Both chips are assigned to one carrier identification number (ID). The carriers can therefore be placed in the stations in any direction – there is no "up" and "down".

The carriers with their ID are registered in the **Carrier Manager software** of the pneumatic tube system. There, each carrier is assigned the allowed and prohibited functions or actions – such as specific destinations.

Each station has an **RFID-reader installed in the transmit slot**. When carriers are placed in the station, it reads the chips. When a carrier ID is read in a station's transmit slot, the Carrier Manager sends the allowed destinations for that carrier to the control panel. This then executes all the automatic functions that were initially specified in the Carrier Manager. It also ensures that no unauthorized actions can be performed.

**The use of RFID and colour-coding can be tailored to the needs and organization of each customer. The above are just a few examples of the possibilities open to the customer. We are happy to discuss all individual requirements with you in detail!**