

HEALTHIER MOBILITY™

ANTIVIRAL & ANTIBACTERIAL DISINFECTION BY NEBULISATION

SURFACE DISINFECTION FROM BACOBAN™ TRANSPORT WITH ALSTOM WORK INSTRUCTION

PRODUCT
SHEET



Disinfection of interior surfaces within rolling stock, such as buttons and handrails, is crucial to ensuring the health and safety of passengers during the pandemic. This solution from Bacoban™ Transport actively disinfects surfaces for several days, using a manual spray, and nebulisers to diffuse disinfectant. When following Alstom's tested work instruction, this solution effectively and efficiently kills bacteria and viruses, including COVID-19.

KEY BENEFITS

- Active for up to 10 days (in laboratory)*
- Kills viruses and bacteria in only 5 minutes*
- Fast application and even distribution
- Alcohol free*
- Disinfection costs +5 to +25% compared to standard cleaning

CERTIFIED EFFICIENCY

- Efficiency verified by a third-party laboratory specialised in microbiological sampling
- 99.99% virus reduction (EN 14476)*
- 99.99% bacteria reduction (EN 13697)*
- Tested to International Standards : EN 14476, EN 13697 and others *

AVAILABLE ON STATIONONE

- Full package available on [StationOne](#) (nebuliser, solutions, work instruction)
- Preferred price available on [StationOne](#)

STATIONONE
The railway marketplace

* Data communicated by the supplier

ANTIVIRAL & ANTIBACTERIAL DISINFECTION BY nebulisation

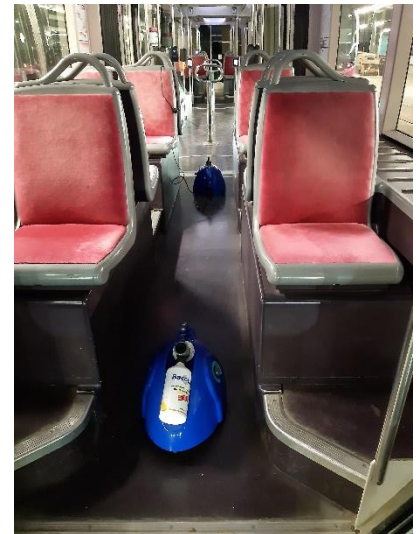
The rail industry has taken a significant hit from the COVID-19 pandemic, with low ridership numbers seen around the world. Around 70% of commuters are less likely to use public transportation during the pandemic. This tested and verified solution for antiviral & antibacterial disinfection by nebulisation responds to our customers' challenges by quickly and effectively disinfecting rolling stock interiors. First the spray solution is used to disinfect high touch points, and then the disinfectant is diffused into the train interior through the nebulisers.

Kills viruses and bacteria in 5 minutes

The surface disinfection solution from Bacoban™ Transport kills 99.99% of both viruses and bacteria in only five minutes. In addition, the product was proven to be persistent in lab tests for up to 10 days.

Alstom's effective work instruction

The work instruction developed by Alstom aims at ensuring operators and users effectively disinfect rolling stock interiors, including bars, handrails, doors, buttons, seats and windows to ensure public transport is safe for passengers around the world.



Verified in field conditions

Alstom's cleaning and disinfection method is designed to achieve a high level of efficiency. Our work instruction was tested in various conditions to prove the effectiveness of the product and guarantee antiviral and antibacterial disinfection. The protocol is based on the following key factors:

- Experience testing the solution on trams in operation
- Contamination testing from a specialised laboratory
- Product knowledge and expertise from the supplier

ANTIVIRAL & ANTIBACTERIAL DISINFECTION BY NEBULISATION

KEY CHARACTERISTICS *

- Alcohol-free solution
- Antiviral, antibacterial and antifungal coating that can be applied to any surface
- Active for up to 10 days after application in laboratory environment
- Kills the most common germs and viruses including CORONAVIRUS (COVID-19), MRSA, HIV, Hepatitis B & C and Norovirus
- Nebulisers release disinfection solution in a dry form, thus there is no risk of damaging train components



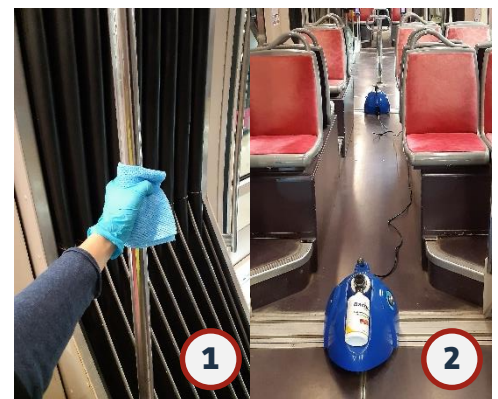
EASY AND SAFE IMPLEMENTATION

Using the disinfection solution and nebulisers is simple, following our two-step process.

First, the cleaning and disinfecting solution is sprayed on a cloth and applied on high-touch surfaces of the rolling stock, including buttons and handrails (1).

Next, the disinfectant bottles are inserted into the nebulisers, which are then placed in the rolling stock vehicles. Set the train interior size on the control dial and the nebulisers do the rest of the work, diffusing the disinfectant solution throughout the train interior (2). After five minutes, bacteria and viruses are destroyed, effectively and safely disinfecting surfaces. There is no exposure of the staff during the nebulisation.

Disinfection by nebulisation offers considerable time savings in comparison to pure manual disinfection.



CUSTOMER REFERENCES

Various industries around the world are seeing the benefits of this solution. Nebulisers have been used on several fleets of rolling stock due to their ability to quickly and effectively disinfect large areas and they are easily applicable across different vehicle types.

The applications started in early 2020 on fleets and depots of our customers in both France and Dubai. The solution performs well, without impact on operations or comfort.



FOR MORE INFORMATION:

Contact the Vendor on
Station One
www.station-one.com

Alstom
www.alstom.com

* Data communicated by the supplier

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MATERIAL & OPERATIONAL DETAILS

NUMBER OF NEBULISERS



Note that for rolling stock composed of enclosed carriages, one or several devices shall be used per carriage. One option is use as many devices as the number of carriages. Another option is to use the same devices to treat different carriages. As an example, a rolling stock of 6 carriages can be treated with 3 devices by using twice the machines. Two sequences of disinfection are therefore needed.

| Length to Treat | Number of Nebulisers |
|-----------------|----------------------|
| 1m to 20m | 1 |
| 21m to 40m | 2 |
| 41m to 60m | 3 |
| 61m to 80m | 4 |

OPERATING TIME of a nebuliser

The table below provides the operating time for one device. Using more devices would divide the operating time by the number of devices.

| Volume to Treat | 30 m ³ | 40 m ³ | 50 m ³ | 60 m ³ | 70 m ³ | 80 m ³ | 90 m ³ | 100 m ³ | 110 m ³ | 120 m ³ | 130 m ³ |
|--------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| Operating Time of a nebuliser | 4 min 24 sec | 6 min 42 sec | 9 min | 10 min | 11 min 43 sec | 13 min 24 sec | 15 min 42 sec | 18 min | 19 min 48 sec | 21 min 36 sec | 23 min 24 sec |

PRODUCTS CONSUMPTION

The table below provides approximate values of product consumption that need **to be adjusted with empirical data** (each rolling stock design is slightly different therefore the numbers are not identical from one use case to another).

| Length to Treat | Consumption 1 * | Consumption 1 * | Consumption 2 * |
|-----------------|---|-------------------------------|----------------------|
| | bottle / nb of wipes (tram, metro, bus) | bottle / nb of wipes (trains) | (all Rolling Stocks) |
| 10m | 160 ml / 22 units | 320 ml / 44 units | 200 ml |
| 20m | 320 ml / 44 units | 640 ml / 88 units | 400 ml |
| 30m | 480 ml / 66 units | 960 ml / 132 units | 600 ml |
| 40m | 640 ml / 88 units | 1280 ml / 176 units | 800 ml |
| 50m | 800 ml / 110 units | 1600 ml / 220 units | 1000 ml |
| 60m | 960 ml / 132 units | 1920 ml / 264 units | 1200 ml |
| 70m | 1120 ml / 154 units | 2240 ml / 308 units | 1400 ml |
| 80m | 1280 ml / 176 units | 2560 ml / 352 units | 1600 ml |

*Consumption 1 refers to the consumption during the step 1 of the method. The quantity in millimeter refers to the amount of liquid needed when using a sprayer (Bacoban® Transport DL 1% / Ready to Use Cloths). The quantity in units refers to the numbers of wipes needed when using ready to use wipes (Bacoban® Transport Ready to use Cloths). Consumption 2 refers to the consumption during the step 2 of the method (Bacoban® Transport DL 3%).

Refer to the Offerings available on StationOne for more details.

FOR MORE INFORMATION:

Contact the Vendor on
Station One
www.station-one.com

Alstom
www.alstom.com

OFFERINGS ON STATION-ONE – THE RAILWAY MARKET PLACE



Vaporiser / Nebuliser
X-VAPO

VAPORIZER



DL3% 1L
X-A-DL3-6



DL3% 20L
X-A-DL3-20

DISINFECTION
(consumption 2)



Ready to Use Cloths
X-A-TUEK16



DL1% WB 5L
X-A-WB-5



DL1% WB 1L
X-A-WB-1



DL1% 20L
X-A-DL1-20



DL1% 5L
X-A-DL1-5



DL1% 500 mL
X-A-DL1K12

**CLEANING &
DISINFECTION**
(consumption 1)

Cleaning & Disinfection **Solution** – Manual & nebuliser

Starter Pack 1

WI



1 vaporiser
X-VAPO



24 x 1L
disinfectant
X-A-DL3-6



48 x 500 mL
cleaner disinfectant
X-A-DL1K12

Starter Pack 2

WI



1 vaporiser
X-VAPO



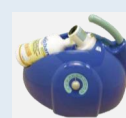
24 x 1L
disinfectant
X-A-DL3-6



4 x 5 L
cleaner disinfectant
X-A-DL1-5

Starter Pack 3

WI



1 vaporiser
X-VAPO



24 x 1L
disinfectant
X-A-DL3-6



96 x 50 cloths
cleaner disinfectant
X-A-TUEK16

Starter Pack 4

WI



1 vaporiser
X-VAPO



1 x 20 L
disinfectant
X-A-DL3-20



1 x 20 L
cleaner disinfectant
X-A-DL1-20

Starter Pack 5

WI



1 vaporiser
X-VAPO



2 x 20 L
disinfectant
X-A-DL3-20



1 x 5 L (dilute)
cleaner disinfectant
X-A-WB-5

**Work
Instruction
Provided**

Big Starter Pack A

WI



4 vaporiser
X-VAPO



4 x 20 L
disinfectant
X-A-DL3-20



2 x 5 L (dilute)
cleaner disinfectant
X-A-WB-5

Big Starter Pack B

WI



4 vaporiser
X-VAPO



60 x 1L
disinfectant
X-A-DL3-6



120 x 500 mL
cleaner disinfectant
X-A-DL1K12

FOR MORE INFORMATION:

Contact the Vendor on
Station One
www.station-one.com

Alstom
www.alstom.com