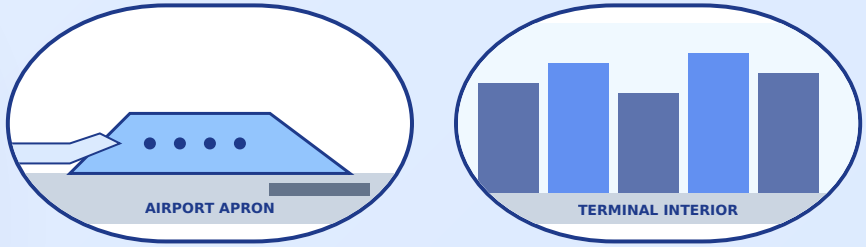
GREEN LINE
TEMİZLİK MADDELERİ VE HAM MADDE SANAYİ TİCARET LİMİTED ŞİRKETİ

AIRPORT HYGIENE CATALOG

OH HYGIENE DM

PURIFY · PROTECT · PRESERVE

Heavy-metal-free ionic disinfection technology for airports, aircraft, public transport and high-traffic environments. Produced in Türkiye by Green Line — engineered to keep people moving safely.



GREEN LINE TEMİZLİK MADDELERİ VE HAM MADDE SANAYİ TİCARET LTD. ŞTİ.
İstanbul · Sakarya · Türkiye | www.greenlineltd-tr.com

ABOUT GREEN LINE

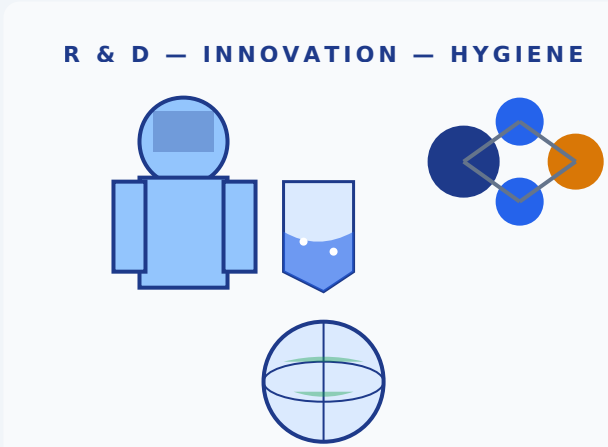
Green Line was established to develop innovative and effective solutions to biological and ecological problems, focusing on healthy products that protect human, animal and environmental health.

Building on years of national and international R&D, we produce next-generation disinfection solutions that meet modern hygiene demands without compromising safety.

We serve internationally in **environmental disinfection** — with particular expertise in hospitals, airports, shopping malls and museums — as well as food production, agriculture, animal husbandry and industry.

Healthy, effective, long-lasting hygiene — engineered from the molecule up.

20+	**5+**	**99%**
years of R&D expertise	key application sectors	efficacy on tested strains



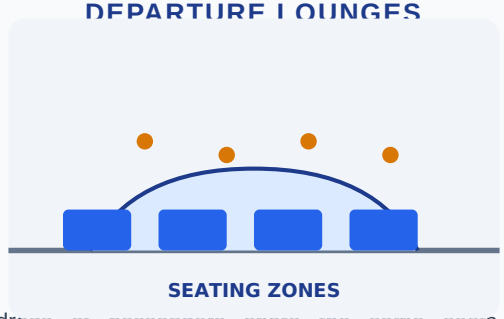
HYGIENE AWARENESS & PUBLIC HEALTH PROJECTS

Green Line partners with non-governmental organisations to run hygiene practice and awareness programmes in areas of high human density and health risk. Our goal is twofold: deliver healthier, safer conditions wherever people gather, and raise lasting public awareness about everyday hygiene.

TERMINAL HALLS

High-traffic public corridors where thousands pass daily require persistent surface protection and air-quality control.

DEPARTURE LOUNGES



Hundreds of passengers share the same seats and surfaces each day — long-lasting antimicrobial films keep them protected.

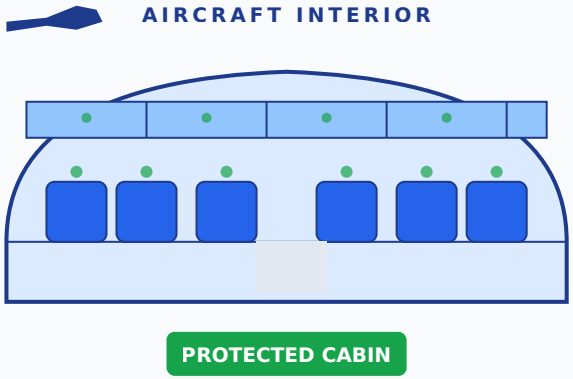
RETAIL & F&B

Food preparation areas, payment counters and washrooms demand non-toxic disinfection that is safe around food contact.

Safer public spaces through consistent, science-based hygiene practice

AIRCRAFT CABIN HYGIENE

- Air traffic is relentless — aircraft load, fly and return with only a short window for cabin cleaning. Deeper cleaning often requires taking an aircraft out of service.
- **OH Hygiene DM** shortens turnaround maintenance with fast action and simple application — no rinse, no residue, no long dwell times.
- Studies show that flight crews get sick more often than most other professions, and air travel is a major route for cross-continental virus transmission.
- Passenger seats, overhead bins, tray tables, armrests, and foot-area surfaces are disinfected quickly between flights.
- Also safe for use in galley/catering compartments and — most critically — aircraft toilets, where its long-lasting film continues to protect between cleanings.



Quick turnaround, sustained protection

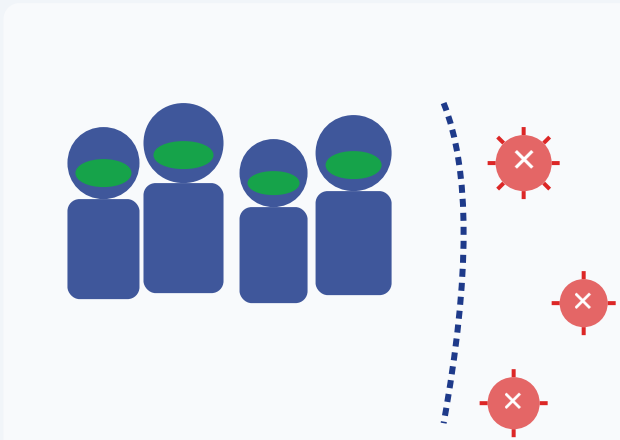
Spray → evaporate → invisible antimicrobial film remains on every treated surface for days, not minutes.

STRATEGIC PURPOSE OF OUR PROJECTS

- In high-density public areas, we help to **protect and strengthen ecological balance** — reducing contamination from disease-causing microorganisms while preserving the beneficial microbiota of the environment.
- Our objective is always to lower microbial risk without replacing one hazard (infection) with another (toxic residue).

Soap and water alone are not enough for hygiene — effective disinfection is essential.

Hand-washing matters, but viruses, mould spores and resistant bacteria survive on surfaces and in air handling systems far longer than a typical cleaning cycle can reach. Persistent, non-toxic surface protection closes that gap.



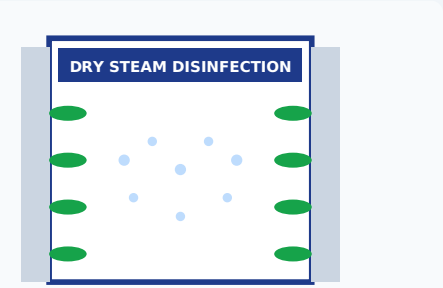
Protection for people in shared spaces

MAIN PROJECT OBJECTIVES

- Guide hygiene standards in both the private and public sector.
- Raise overall hygiene standards.
- Establish high-standard hygienic zones that complement service comfort in public life and residential areas.
- Increase consumer understanding of disinfection.
- Raise public awareness of holistic hygiene.
- Prevent epidemic infectious diseases.
- Ensure project activities are continuous, not one-off.
- Increase workplace productivity by reducing sickness.
- Lower the carbon footprint by reducing unhealthy chemical use and natural-resource consumption.

AIRPORT HYGIENE PROJECTS

COLLECTIVE AREA ENTRANCE DISINFECTION DOORS



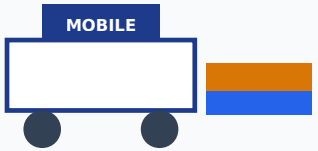
OH Hygiene DM is dispersed as a fine dry mist through the door frame, giving instant disinfection against viral, bacterial and fungal contamination at every entry and exit. Staff and passengers are protected from infectious disease and the transport of pathogens.

LUGGAGE DISINFECTION TUNNELS

LINE-TYPE FIXED

Static tunnel placed along the conveyor line.

VEHICLE-MOUNTED

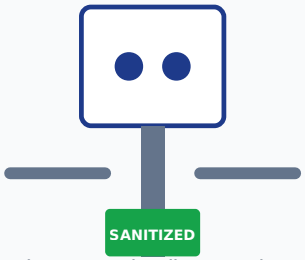


Portable unit for airside or operational use.

OH Hygiene DM is sprayed as a dry mist through the tunnel. Luggage is disinfected before it reaches the terminal or the aircraft hold — preventing harmful microorganisms from travelling with the bag. Staff and passengers are shielded from the transport of pathogens.

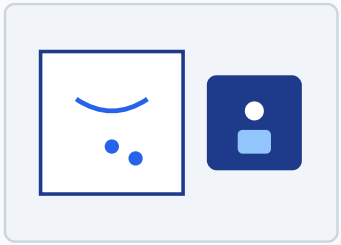
AIRPORT HYGIENE PROJECTS — HAND & EXIT POINTS

SINK / WC EXIT TURNSTILE



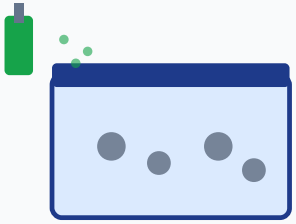
OH Hygiene DM is dispensed onto the hands at the exit; once sanitised, the barrier opens and the person passes safely.

WASHBASIN / WC AUTO-DOOR



Hands are sanitised at the washroom exit and the door opens automatically — touch-free, low-contact hygiene.

ANTIMICROBIAL BOX



Weekly spraying of collection bins with OH Hygiene DM prevents pathogen accumulation in high-touch storage.

HAND HYGIENE POINT

OH Hygiene DM hand dispenser gives staff and passengers quick, effective hand disinfection on demand.

Entry · hand hygiene · exit · storage — every touch-point covered by a single, non-toxic chemistry

AIRPORT & MEDIUM-SURFACE HYGIENE PRODUCTS

A complete portfolio of personal and facility-level hygiene products, all compatible with OH Hygiene DM chemistry — from hand disinfectants and wet wipes to PPE for staff operating in high-traffic public areas.

OH HYGIENE DM SPRAY

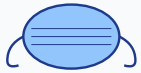
Surface & skin disinfectant with long-lasting film protection.

AEROSOL SPRAY

Fast-acting aerosol format for air and surface sanitisation in cabins and rooms.

HYGIENIC WIPES

Travel-friendly antimicrobial wipes for body and surface.



SURGICAL MASK

3-ply protective mask for staff and passengers.

BOUFFANT CAP

Disposable head covering for food & medical staff.

HYGIENIC LIQUID

Pump-bottle hand and skin disinfectant for counters and lavatories.

BABY / SENSITIVE WIPES

Gentle formulation for sensitive skin and infants.

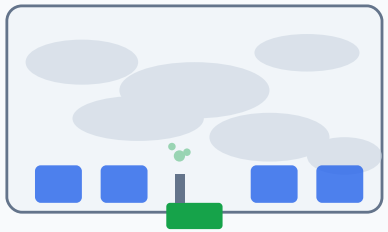
BODY CARE FIBER

Hygienic body cleaning unit for patient and caregiver use.

PUBLIC TRANSPORT — ULTRASONIC & ELECTROSTATIC DISINFECTION

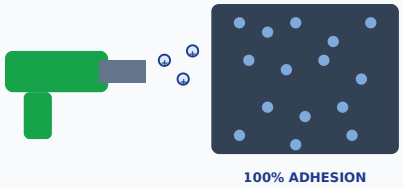
Green Line deploys **ultrasonic fogging** and **electrostatic spraying** techniques to achieve complete coverage inside buses, metros, trains and aircraft cabins. The charged droplets wrap around three-dimensional surfaces — seats, handles, overhead bins — leaving nothing behind them uncovered.

ULTRASONIC FOGGING



Ultra-fine mist fills the entire cabin volume, reaching surfaces and air without pooling or wetting.

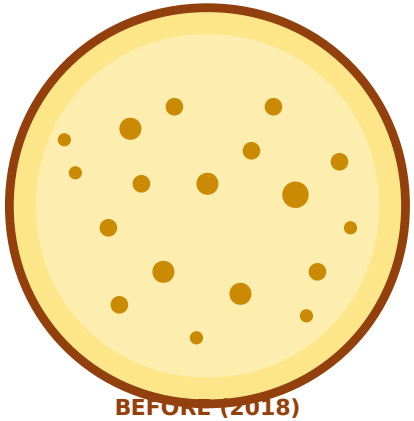
ELECTROSTATIC SPRAY



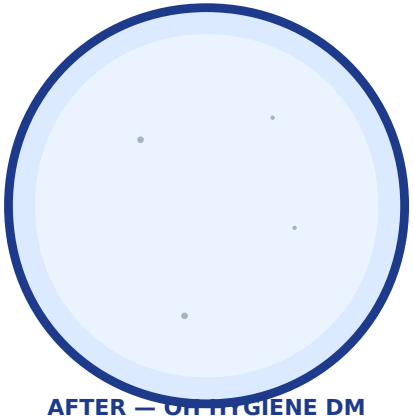
Charged droplets are attracted to surfaces, wrapping around three-dimensional objects for complete coverage.

100% EFFECT — FULL ADHESION ON EVERY SURFACE

AIRPORT AIR — BEFORE & AFTER APPLICATION



BEFORE (2018)



AFTER — GH HYGIENE DM

Before application — airport air sample

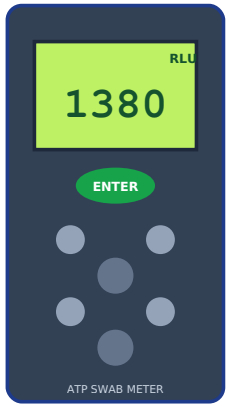
Dense microbial colonies: bacteria ≈ 1×10^{8} cfu/ml · viruses ≈ 1×10^{4} cfu/ml · mould ≈ 1×10^{6} cfu/ml · yeast ≈ 1×10^{4} cfu/ml. Extensive colony growth visible on the plate.

After application — airport air sample

Bacteria (−) · Viruses (−) · Mould ≈ 1×10^{1} · Yeast ≈ 1×10^{1}. Bacteria and viruses fully eliminated; mould and yeast reduced to near-negligible levels.

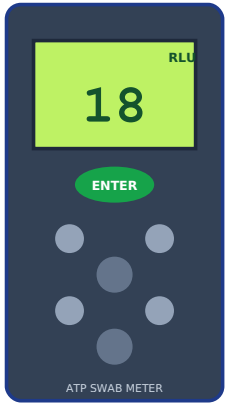
ATP SURFACE SWAB — MEASURED CLEANLINESS

ATP (adenosine triphosphate) swab measurement is an instant, objective test of biological contamination on surfaces. Lower RLU readings mean a cleaner surface. Green Line measured the same surface before and after OH Hygiene DM application — the results speak for themselves.



Before application

Surface swab reading:
1380 RLU
— well above the typical pass threshold. Surface is biologically contaminated.



After OH Hygiene DM

Surface swab reading:
18 RLU
— far below typical pass threshold. Over
98% reduction
in biological load.

MICROBIOLOGICAL EFFICACY

Laboratory-verified activity of OH Hygiene DM against a wide panel of bacteria, viruses, moulds and yeasts. All tests performed at 0.5% concentration.

Microorganism	Contact (min)	Conc. (%)	Result
Aspergillus fumigatus	5	0.5	99%
Bacillus cereus spores	5	0.5	99%
Candida albicans	5	0.5	99%
Canine parvovirus	5	0.5	99%
Erwinia carotovora subsp. carotovora	5	0.5	99%
Escherichia coli	1	0.5	99%
Lactobacillus sp.	1	0.5	99%
Legionella pneumophila	10	0.5	99%
Listeria monocytogenes	1	0.5	99%
Mycobacterium bovis	60	0.5	99%
Newcastle Disease virus	1	0.5	99%
Pediococcus sp.	5	0.5	99%
Proteus mirabilis	1	0.5	99%

Microorganism	Contact (min)	Conc. (%)	Result
Pseudomonas aeruginosa	5	0.5	99%
Pseudorabies virus	5	0.5	99%
Saccharomyces cerevisiae	1	0.5	99%
Salmonella choleraesuis	1	0.5	99%
Salmonella typhimurium	1	0.5	99%
Staphylococcus aureus	1	0.5	99%
Streptococcus faecalis	1	0.5	99%
Streptococcus faecium	1	0.5	99%
Trichophyton mentagrophytes	60	0.5	99%

22+
Strains tested

99%
Reduction across panel

1–60 min
Contact time range

0.5%
Working concentration

VIRAL LOG-REDUCTION TEST RESULTS

Comparison of log-reduction performance: distilled-water control, 5% formaldehyde control, and OH Hygiene DM against three reference viruses. Tests run at 25 °C with 5-minute contact time, FCS matrix, 30–37 °C incubation.

Virus strain	DISTILLED-WATER CONTROL		5% FORMALDEHYDE CONTROL		OH HYGIENE DM (GREEN LINE)	
	Spike (cfu/ml)	Log Reduction	Spike (cfu/ml)	Log Reduction	Spike (cfu/ml)	Log Reduction
Poliovirus Type 1	2.2×10^8	**0.0**	2.2×10^8	**7.0**	2.4×10^8	**3.9**
Adenovirus Type 5	4.6×10^8	**0.0**	4.6×10^8	**7.2**	4.3×10^8	**3.5**
Murine norovirus	4.6×10^8	**0.0**	4.6×10^8	**7.5**	4.8×10^8	**4.2**

Interpretation

Distilled water produces no meaningful reduction (control). 5% formaldehyde achieves a strong ~7-log reduction but is toxic, carcinogenic and requires post-application cleaning. OH Hygiene DM delivers a 3.5–4.2 log reduction with a **non-toxic, residue-free chemistry** that remains active on surfaces long after application — a far safer option for aircraft cabins, passenger-facing areas and food-contact zones.

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