

JOINT PRESS RELEASE

**ADHETEC AND PYLOTE PARTNER TO MARKET NEW ANTIMICROBIAL
TECHNICAL FILMS EFFECTIVE AGAINST CORONAVIRUSES AND BACTERIA**

**Launch of cabin antimicrobial adhesive films ADHECAL®
and ADHEFILM® activated with Pylote's antimicrobial technology**

Toulouse/Tarbes (France), July 2 2020 - ADHETEC, a technical adhesive solution expert in the aerospace industry, launches a range of adhesive films embedding PYLOTE's natural antimicrobial technology, effective especially against coronaviruses and bacteria. PYLOTE is a specialist in mineral and ceramic industrial chemistry.

These new antimicrobial technical films are now available to airlines for use in their aircraft cabins. Initially, ADHETEC will propose to its customers: airlines, manufacturers or aeronautical subcontractors, transparent or customizable adhesive films to protect tray tables, IFE screens, armrest, handles or seat shells. The purpose of these extended ranges of antimicrobial adhesive films is to respond to the current concern of airlines - as they resume operations - to create a safe and confident environment and thus insure the passengers' well being on board.

The ADHETEC decorative and protective self-adhesive film range for the cabin (ADHECAL® /ADHEFILM®) will now have effective microbiological properties during the entire period of use on the surfaces to which they are applied. They do not present any risk for users, including very young children. Activated by PYLOTE's technology, they have an immediate, stable and permanent microbial decontamination action (no loss of effectiveness over 4 years), particularly against viruses and bacteria. With this certified antimicrobial protection, ADHETEC and PYLOTE intend to participate in fighting against the spread of COVID-19 as well as hand-carried bacteria, sources of many infections.

A customizable version - ADHECAL® 13423-AM - and two transparent films - ADHEFILM® 10801 and 10447-AM- have been industrially qualified and tested against coronaviruses and bacteria in the Fonderephar laboratory (COFRAC certification) according to the ISO 21702 standard adapted for the human coronavirus strain 229E and those of the JIS Z 2801 standard adapted for the Escherichia coli CIP 53.126 bacteria. Surfaces of ADHECAL® 13423-AM, ADHEFILM® 10447-AM and 10801 adhesive films containing PYLOTE's technology were thus compared to control surfaces of the same nature over the same periods of time but without the technology:

- After only one hour of activation of the PYLOTE's technology into the surface, results on ADHECAL® 13423-AM as well as ADHEFILM® 10801 & 10447-AM films showed a log reduction in viral load of 1,54 log, corresponding to a disappearance of more than 90 % of infectious virions.
- After 24 hours of activation, the log reduction in viral load was 3,46 log, corresponding to a disappearance of more than 99,9 % of infectious virions.
- After 24 hours of activation, the results showed a logarithmic reduction in the number of Escherichia coli CIP 53.126 bacteria of 5,28 log, corresponding to a disappearance of more than 99,999 % of the bacteria present on surfaces.

ADHECAL® 13423-AM or ADHEFILM® 10801 / 10447-AM films are now available for sale. For more information, please contact: commercial@adhetec.com

Loïc Marchin, PYLOTE's CEO, commented on this announcement: *« I am very happy and proud to see that our natural antimicrobial protection technology has seduced a player as solidly established in the aviation industry as ADHETEC, leader in aeronautical decoration and adhesive protection. The combination of our expertise and ADHETEC's is a big step forward in providing airlines fully operational, responsible and safe adhesive solutions, with an immediate impact on Hygiene and comfort of passengers and aircrew. Our technology is already qualified in paint applications for commercial aircraft. All of our employees are very proud to participate, with a technology we have been developing for 10 years, in controlling the risk of transmission of viruses and bacteria in aircraft and to play an active role in the fight against the COVID-19 pandemic.*

Alexis Gabillon, ADHETEC's CEO stated: *« The passenger experience is at the heart of ADHETEC's developments, we already offer solutions to our customers that enable cabin personalization and protection of the interior surfaces. The COVID-19 pandemic has turned our lives upside down and called into question our travel habits. The innovation that we are launching on the market today responds to this additional safety need in the cabin by adding an additional function to our products thanks to PYLOTE's technology: the maintenance of microbiological hygiene. From now on, the main surfaces constituting the main points of contact (shelves, handles, IFE...) can be protected and become, on request, a communication support thanks to the printing possibilities offered by our products. Very soon, we will apply the technology to all our interior product range, particularly ADHESKIN®, which will open the way to optimized cabins in terms of microbiological hygiene without any compromise on other elements like uniqueness and aesthetics aiming at an enhanced passenger experience.*

ABOUT ADHETEC'S PATENTED ADHESIVE FILMS

ADHETEC is the leader in adhesive decoration and an expert in aeronautical protection. Its patented exterior decoration adhesive films (ADHECAL®) are qualified by all aircraft manufacturers. With a wide range of products for aircraft interiors including ADHEMARK®, ADHECAL® and ADHESKIN®; ADHETEC can now add one more string to its bow and incorporate the antimicrobial properties of the PYLOTE's technology directly into its products, & respond to the new "Clean materials" focus from airlines /OEM or cabin manufacturers.

ABOUT ADHETEC – For over 30 years, ADHETEC designs, manufactures and supplies technical adhesive films for aerospace, automotive, railway, high-tech and industry. ADHETEC is part of ALVEST Group. ADHETEC develops tailor made solutions adapted to every clients' needs thanks to its know-how:

- Knowledge of adhesives and customer specifications
- Excellence in materials processing
- Dynamic, pragmatic and inventive, with 12 specialized R&D specialists

For more information, please visit our website: <https://www.adhetec.com/en/antibacterial-and-antiviral-aerospace-films-cabin>



ABOUT PYLOTE'S BREAKTHROUGH INNOVATION

PYLOTE's breakthrough technological innovation consists in integrating mineral ceramic microspheres by mixing those with materials such as adhesive films or paints. After application, coated surfaces such as public places (bars) or office tables are activated to destroy microorganisms. These non-metallic mineral beads act as a catalyst causing microbial decontamination of the surfaces and provide continuous and stable protection against microbial contamination and keeps a very high level of safety, efficiency and hygiene during the entire life cycle. During the 10 years of development, the effectiveness of PYLOTE's technology has been tested on a very wide panel of microorganisms specific to applications in the food industry, health, industry or cosmetics.

ABOUT PYLOTE: Founded in 2009 and based in Toulouse, France, PYLOTE is a key player in mineral industrial chemistry and cleantech technologies and a recognized expert worldwide for its sustainable breakthrough innovation. PYLOTE develops, produces and supplies a unique patented natural antimicrobial solution, from process to applications, which solves the problems encountered by consumers in terms of safety, hygiene and durability. PYLOTE offers its differentiating solutions in the pharmaceutical, cosmetics, food and industrial markets, integrating regulatory, marketing and industrial steps to generate a powerful value proposition in a short time-to-market, without any investment or change in the current manufacturing process. Since 2016, PYLOTE's innovation, which complies with the American FDA regulations, international cosmetics standards, pharmaceutical, food and food contact regulations, has been awarded several times and internationally: Pharmapack Award, CPhI Pharma Award, Oscar for Packaging for Food Applications, CSR Solutions Trophy, MakeUp in New York Tree Innovation Award. For more information about PYLOTE, please visit our website: www.pylote.com



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FURTHER INFORMATION

EFFECTIVENESS OF THE ANTIMICROBIAL ACTIVITY OF PYLOTE'S TECHNOLOGY

- ❁ **Effectiveness against 229E human coronavirus according to the ISO 21702 adapted standards (1h contact time) and JIS Z2801 (24h contact time)**
 - ✓ 229E human coronavirus: 3.3 lg¹, 3,4 lg¹ and 3.9 l lg¹ (after 24 hours)
 - ✓ 229E human coronavirus: 0.95 lg¹ and 1,54 lg¹ (after 1 h)

- ❁ **Effectiveness against other viruses (>99%) according to the JIS Z2801 adapted standard (24h contact)**
 - ✓ Influenza virus A / **Influenza** (H1N1) : 2,6 lg¹
 - ✓ Human Rotavirus (**Gastroenteritis**) : 2,2 lg¹
 - ✓ **Herpes** virus type 1 (HSV-1) : 2,2 lg¹
 - ✓ Adenovirus Type 3 (**Conjunctivitis**) : 2,3 lg¹

- ❁ **Some examples of antibacterial efficiency measurements, especially on resistant bacteria (up to 99.9999%):**
 - ✓ *Escherichia coli* CIP 53.126 and clinical isolat BLSE: > to 3,8 lg¹
 - ✓ *Staphylococcus aureus* (MRSA) ATCC 33591 : > to 3 lg¹
 - ✓ *Salmonella enterica* CIP 60.62T : > to 5,8 lg¹
 - ✓ *Pseudomonas aeruginosa* CIP 82.118: > to 4,1 lg¹

¹ 1lg = 90% of germs destroyed - 2 lg = 99% - 3 lg = 99,9% - 4 lg = 99,99% - 5 lg = 99,999% - 6 lg = 99,9999%
