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ISTRAŽIVANJE & RAZVOJ

Kandidat

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ATEST

Predmet: HYLA GST
SISTEM ZA PREČIŠĆAVANJE PROSTORIJA I VAZDUHA U NJIMA

Osnovne analize i na njima zasnovane definicije

Analiza sistema za prečišćavanje zatvorenog prostora, njegovih performansi i djelotvornosti u vezivanju prašine iz određenog okolnog vazduha i redukciji substanci koje izazivaju alergije.

Izvadak

HYLA GST mehanički proizvodi aerosol-čestice profila $< 5 \mu\text{m}$. One omogućavaju izdvajanje i usisavanje najveće moguće količine prašine ili zagađivača vazduha iz okolnog vazduha pod uglom usisavanja koji, zahvaljujući povećanoj površini vode, ima kovitlajući efekat sa 20.000 ROT u minuti. Tokom ovog procesa, volumetrijsko punjenje čestica profila do $< 2 \mu\text{m}$ se koncentrisano uvećava tokom usisavanja, tako da se čestice prašine sa adaptiranim sporama i štetnim mikrobima otklanjaju iz sobnog vazduha. Čestice i mikrobi ostaju u vodi u posudi za vodu koju treba isprazniti u javni kanalizacijski odvod odmah nakon upotrebe GST-a.

Supstance, organskog ili sintetičkog porijekla, koje izazivaju alergije a utvrđeno je da se nalaze u sobnom vazduhu u kojem su se adaptirale spore (kao i molekule mirisa / smrada), predisponirane su za vezivanje aerosola u HYLA-i GST sa $> 1 \text{ Mln} / \text{čestica profila } < 5 \mu\text{m} / \text{sec}$ za vrijeme upotrebe. Protok kapaciteta $2,5 \text{ m}^3/\text{min}$ odgovara količini $> 50 \text{ M}$ vezivnih aerosol-čestica u GST-ovoj posudi za vodu.

Nasuprot tome, prostor za testiranje u kojem se obavlja mjerenje prema referentnoj tački ima na raspolaganju kontaminirano volumetrijsko punjenje od oko $10.000 \text{ cfu}/\text{m}^3$ (cfu = jedinice koje formiraju koloniju/-e). Nakon primjene HYLA-e GST, dijagonalna osa prostora x-y je prilikom mjerenja pokazala $< 50 \text{ cfu}/\text{m}^3$.

Analiza čvrste materije i vode (uzorak uzet iz vodenog spremnika nakon upotrebe) pokazala je postojanje spora i mikroba patogene prirode (mikrobi štetni po zdravlje). Demonstriran je visok nivo djelotvornosti metoda za prečišćavanje vazduha HYLA GST-ovim sistemom za fizičko čišćenje.

HYLA GST sistem za prečišćavanje vazduha prečišćava preko 90 % vazduha za određeno vrijeme rada u određenom prostoru, $15,3 \text{ sec}/\text{m}^3$, a naročito prečišćava VOC (= eterični organski ugljikovodik) i supstance koje izazivaju alergije.

Oberägeri, 16.02.2010.

Manfred Frischke
Rukovodilac tehnološkog odjela

Prof. Dr Dr Hans Georg Obert
Savjetodavno naučno vijeće

Applicant

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CERTIFICATION REPORT

Object: HYLA GST
AIR AND ROOM CLEANING SYSTEM

Conceptual definition and analysis foundation

Analysis of a room cleaning system related to its performance and efficiency regarding the bonding of respirable dust in a defined ambient air for reduction of „allergy causing substances“.

Abstract

The HYLA GST mechanically produces aerosol Ø particles < 5 µm. Those allow a highest possible amount of loading of the respirable dust or pollutants in a suction angle of the ground position due to the enlarged water surface at the swirling effect of 20,000 ROT/min. In this process, volumetric loadings up to Ø particles < 2 µm are concentratedly collected in the suction flow, so that respirable dust particles with adapted spores and harmful germs are removed from the air of the room. Particles and germs keep bond in the water of the water pan and need to be poured out to a public sewer system directly after usage of the GST.

Allergy causing substances of organic or synthetic origin that had beforehand been measured in the room air via its adaption to spores (also odour molecules), are liable to the surface aerosol bonding in the HYLA GST with > 1 Mln / Ø particles < 5 µm / sec operation time.

Converted to the flow capacity of 2.5 m³ / min it corresponds to > 50 M aerosol particles, able for bond, in the GST water pan.

In contrast, the test room for a reference point measurement, had available a contaminated volumetric loading of approximately 10,000 cfu / m³ (colony-forming units).

After the application of the HYLA GST, the diagonal space axis x-y showed < 50 cfu / m³ at the measuring points.

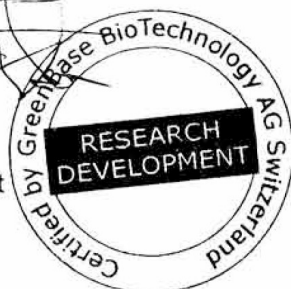
The solid matter and water analysis (extraction from the water tank after application) showed the existence of spores and germs of pathogen nature (germs harmful to health). The high level of efficiency regarding the air cleaning method of the HYLA-GST physical cleaning system is demonstrated.

The HYLA GST air cleaning system performs a degree of purification of > 90% at an ascertained operation time of 15.3 sec / m³ room volume, especially in terms of allergy causing substances and VOC (volatile organic hydrocarbon).

Oberägeri, 16th February 2010

Manfred Frischke
Chief Technology Officer

Annexe: Certification Report




Prof. Dr. Dr. Hans Georg Obert
Scientific Advisory Council