



Certificate

16-2567-0

Quality Seal for
Allergy-Friendly Products and Services

Approved quality of the

**Air Cleaning System
„Vivenso“**

of

PRO-AQUA International GmbH

is certified by ECARF.

Initial certification in September 2016. Certificate valid until 30.09.2018.

A handwritten signature in blue ink, appearing to read "T. Zuberbier".

Berlin, 08.09.2016

Prof. Dr. med. Dr. h.c. T. Zuberbier, Head of ECARF

Criteria for allergy-friendly Vacuum Cleaners

1. Basic Situation

Allergens do not stop at the front door. Pollen, mould spores and bacteria can find their way into indoor areas despite precautions such as opening windows only in special times of the day or washing one's hair before going to bed.

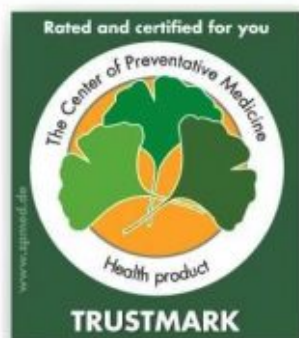
Special vacuum cleaners can broadly eliminate allergens from floors, surfaces and the indoor air, significantly reducing allergy symptoms in people with hay fever or allergic asthma. The European Centre for Allergy Research Foundation (ECARF) certifies allergy-friendly vacuum cleaners that, with normal everyday use, are able to achieve a measurable reduction in the allergen load in indoor areas and securely trap the removed allergens.

The ECARF Seal is awarded if the criteria are fulfilled. The criteria underlie the assumption that less exposure to allergens is generally beneficial and depict the currently highest technical standards.

2. Criteria

- Dust Emission of the vacuum cleaner according to DIN EN 60312 with mineral dust Type 1
Limit:
Dust reemission < 0,02% for particle sizes
0,3 µm, 0,5 µm, 0,7 µm, 1 µm, 1,5 µm, 2 µm, 2,5 µm, 3 µm, 3,5 µm, 4 µm, 5 µm, 6 µm, 7 µm, 8 µm, 9 µm, 10 µm
- Hints within the manual on how to handle the device and on the necessity of regular filter changes.
Indication on possible inner contamination of the device on disregard.
- Vacuum cleaners, that contain neither dust bag nor water filtration, are not suited for the ECARF Seal of Quality due to their construction. Consumers are presented to large amounts and high concentrations of dust while emptying the dust bin.

CERTIFICATE



ACN: 869 - 1417

The Center of Preventative Medicine – ZPmed®

certifies that the product:

VIVENSO Room Cleaning System

from the product category:

Room Cleaning Systems

by the company:

PRO-AQUA International GmbH

complies with the requirements of preventative medicine

as being a health product.

This product is considered suitable for health care.

This certificate will be valid until: December 2017




Dr. med. Herbert Schulze
Facharzt für Orthopädie,
Konsiliararzt


Fritz-Peter Eckstein
ZPmed®

Evaluation of the dust retention capacity of the “PRO AQUA” air and room cleaning system

Device: Vivenso air and room cleaning system

1 Task

The dust retention capacity of a “PRO AQUA” room cleaning system shall be determined for three different operation modes (“Air”, “Clean”, and “Wet”).

2 Procedure

House dust was collected, homogenised and sieved so that the resulting material had a particle size of 2 mm. 20 g portions of the house dust were doped with approximately 30 mg DEHP (di-2-ethylhexyl phthalate). A carpet was coated with the DEHP-enriched dust and cleaned with the „PRO AQUA“ Vivenso cleaning system within 30 s.

The water tank of the cleaning system was filled with 2 to 3 liters of water. Dust which was not held back by the cleaning system was collected at the air exhaust outlet using a membrane filter with a pore size of 0,45 µm. The content of dust which was not held back by the cleaning system was determined by means of gravimetric techniques. Also the concentration of the DEHP was determined using gas chromatographic techniques.

Both, the amount of 20 g house dust and the cleaning time of only 30 s resulting in a high load of the cleaning system, represent “worst case” conditions.

3 Results

The results of the gravimetric and gas chromatographic quantification of the dust and DEHP which was not held back are given in the report B173383 (see attachment). The data were used to calculate the dust and DEHP retention capacity in percent (table 1).

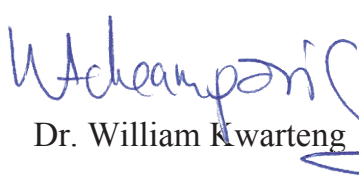
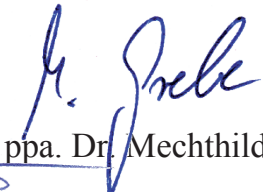
Table 1: Dust and DEHP retention capacity of the Vivenso cleaning system in percent.

Operation mode	Dust retention capacity	DEHP retention capacity
Vivenso	[%]	[%]
Air	99,9994	99,9998
Clean	99,9996	99,9999
Wet	99,9995	99,9999

The quantification of the dust and DEHP that was collected at the air exhaust outlet on the membrane filter under the described conditions results in a dust and DEHP retention capacity in the range of 99,9994 % to 99,9999 %.

Wenden-Hünsborn, Germany, March 14, 2017

HuK Umweltlabor GmbH

Dr. William Kwarteng ppa. Dr. Mechthild Grebe