



Personal  
Care

## AQFRESH™ PURE

**INCI NAME:**

Cucurbiturils

**APPLICATION:**

- Deodorants
- Antiperspirants

**APPEARANCE:**

Off-white powder

**SOLUBILITY:**

Dispersible in water

**USE LEVEL:**

0.05% to 2%

**Enhanced  
Performance**  
Through Applied  
Innovation



## AqFresh™ Pure Smart body odor control

The new and patented AqFresh™ Pure technology developed by Aqdot® is the next generation of smart odor control. Named after Cucurbita, the Latin word for pumpkin, its unique structure enables supramolecular capture of molecules such as malodors and VOCs (Volatile Organic Compounds). The pumpkin-like shape hereby allows AqFresh™ Pure to release preloaded molecules such as fragrances upon the presence of malodors.

AqFresh™ Pure has shown excellent odor removal in a wide range of pH formulations without the need for any masking fragrance. In the area of fragrance longevity, AqFresh™ Pure has demonstrated to maintain the fragrance character and intensity. The AqFresh™ Pure complexation mechanism is highly versatile and works in powder as well as liquid form, making it the ideal choice for a variety of AP/Deo application formats.

AqFresh™ Pure has undergone human health and environmental safety testing and has been registered without any hazardous classification or labelling. It is not bioaccumulating, hazardous to fish, aquatic invertebrates, or microorganisms in sewage plants (OECD 202, 203, 209, 211) and considered as not persistent in the environment. AqFresh™ Pure has been awarded the Cradle to Cradle Platinum Material Health Certificate.

### Key Performance Benefits

- **Unique pumpkin-like shape to entrap malodors**
  - Clinically proven deodorant performance over 48 hours
- **Enables malodor activated fragrance release**
  - Upon contact with malodors, the smart fragrance release mechanism of AqFresh™ Pure is entrapping the malodor while releasing pre-loaded fragrance
- **Not persistent or hazardous to environment or human health**
- **Awarded Cradle to Cradle Platinum Material Health Certificate**





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**AQFRESH™  
PURE**

**North America**

Elementis  
469 Old Trenton Road  
East Windsor  
NJ 08512, USA  
Tel: +1 609 443 2500

**Europe**

Elementis UK Ltd  
c/o Elementis GmbH  
Stolberger Strasse 370  
50933 Cologne, Germany  
Tel: +49 221 2923 2066

**Asia**

Deuchem (Shanghai)  
Chemical Co., Ltd.  
99, Lianyang Road  
Songjiang Industrial Zone  
Shanghai, China 201613  
Tel: +86 21 5774 0348

[elementis.com](http://elementis.com)

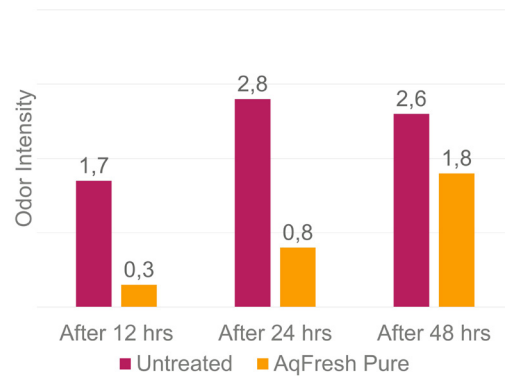
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AqFresh™ Pure can be formulated into products with fragrances to give a longer lasting experience and improved hedonic tones. The fragrance release can be accelerated by a variety of triggers including malodors and humidity. Fragrance molecules are weaker binders to AqFresh™ Pure. In the presence of a stronger competitive binder (such as a malodor molecule), AqFresh™ Pure readily releases the fragrance to bind strongly to the malodor and remove it.

Table 1: Malodor activated fragrance release

Sample	Odor Character	Odor intensity (Scale 0 to 6)	Hedonic tone (Scale -4 to +4)
Sweat malodor		4.1	-2.3
Citral + AqFresh™ Pure		1.5	0.0
(Citral + AqFresh™ Pure) + Sweat malodor		4.0	+1.9

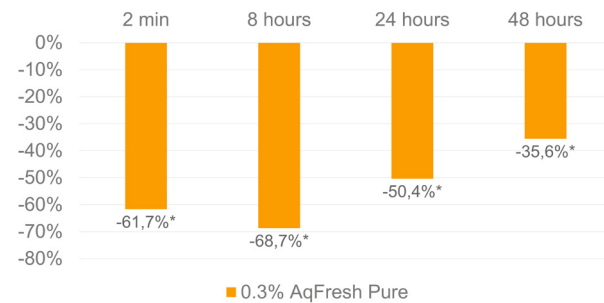
Graph1: Deodorant home test over 48 hours



The deodorant efficacy was confirmed by assessing the clinical efficacy by three expert odor evaluators on 12 panelists. It could be proven that the inclusion of 0.3% AqFresh™ Pure provides immediate (after 2 minutes) and long-term (up to 48 hours) odor reduction at a very high significance level of p<0,005. In this test AqFresh™ Pure reduced the odor perception from perceptible to not or barely perceptible.

An AqFresh™ Pure-containing glycol deodorant stick reduced significantly the malodor creation when tried during a Home Use Test. Seven volunteers (2 female, 5 male) tested a basic formula containing 1% active AqFresh™ Pure and compared against the untreated control. The panelists could not perceive any malodor after 12 hours on the AqFresh™ Pure treated side, while on the control axillae already weak malodor was found. After 24 hours all panelists could perceive a noticeable malodor on the untreated side, while the treated side remained at a very weak malodor level. Even after 48 hours a perceivable performance of AqFresh™ Pure was recorded by reducing the noticeable malodor to a weak level.

Graph 2: Clinical Evaluation of AqFresh™ Pure Deodorant



**Formulation**



**48 Hr Odor Protection Deodorant Stick**

A high performing, easy to produce deodorant stick formulation with acceptable consumer aesthetics. The formula contains 0.3% AqFresh™ Pure which was clinically tested to provide 48 hr odor protection.

Phase A	
Isopropyl Myristate <sup>2</sup>	35.36
Finsolv TN (C12-15: Alkyl Benzoate) <sup>3</sup>	22.79
Lanette 18 (Stearyl Alcohol) <sup>4</sup>	24.00
FANCOL® POLYISO 800-CG (Hydrogenated Polyisobutene) <sup>1</sup>	9.18
FANCOR® MEADOWFOAM SEED OIL (Limnanthes Alba (Meadowfoam) Seed Oil) <sup>1</sup>	0.50
PHASE B	
THIXCIN® R PC (Trihydroxystearin) <sup>1</sup>	7.87
PHASE C	
AqFresh™ Pure (Cucurbiturils) <sup>5</sup>	0.30

1 Elementis 2 Croda 3 Innospec 4 BASF 5 Elementis/Aqdot