



alve-one®

Sustainable foaming solutions for the AUTOMOTIVE INDUSTRY



Alve-One® foaming agent solutions, bringing more value for your footwear foamed applications



Matching the technical performances of the market reference with a cost-competitive solution



Enhancing sustainability performance for footwear products with a compliant and safe foaming agent



Simplifying logistics through a safe- to-use foaming agent, delivering foams containing no odor

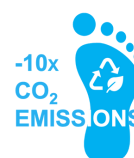


Improving competitiveness by optimizing formulations or manufacture processes (if desired)

Alve-One® characteristics

Chemical composition	Mineral based, endothermic decomposition	Granulometry range	Adapted to your process: From 5 µm to 50 µm
Physical form	Powder, Masterbatch *	Processing temperature range	Adapted to your process: From 140° to 210 °C
Resins	Elastomers, linear & crosslinked Polyolefins, rigid & flexible PVC, Rubber	Packaging	Supporting your needs

*Available on demand depending on your region



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THE LIGHTEST COMFORT EVER

Alve-One® foaming agent solutions are based exclusively on **safe raw materials combinations**, 100% compliant with REACH regulations, deliver efficient foaming results ensuring greater comfort for all passengers

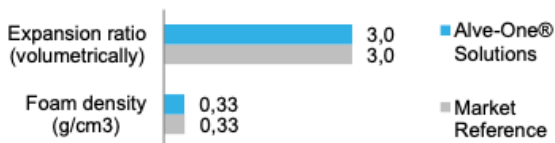


Fig 1. Characteristics comparison of two elastomeric foams produced with ADCA & Alve-One® solutions

✓ Under the same processing conditions range, Alve-One® solutions are at least as efficient as the market reference for density reduction & expansion ratio.

✓ Compared to ADCA, Alve-One® has greater UV resistance and does not emit VOCs or fog

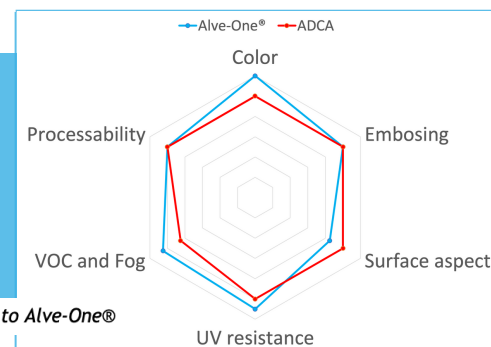


Fig 2. ADCA compared to Alve-One®

ALVE-ONE® SOLUTIONS, A PERFECT EXAMPLE OF ECO-DESIGN

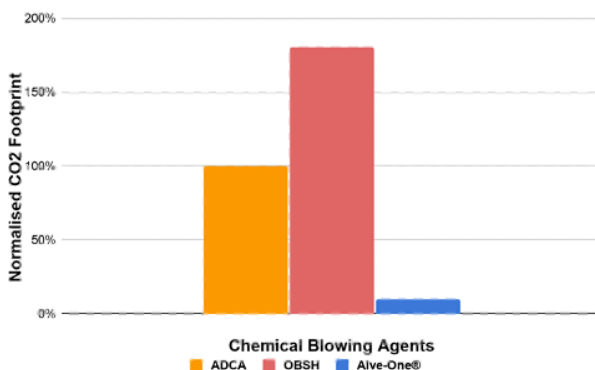


Fig 3. Comparative LCA study of chemical blowing agents: Alve-One vs ADCA and OBSH during the full LCA from production of raw materials until the end of life of the final products

✓ Alve-One® is 10x less impacting than ADCA in terms of CO2-eq emissions in full car part life cycle. Replacing 1 kg of ADCA by +/- 1 kg of Alve-One® we will be saving on average 10 kg of CO2-eq.



IMPROVED VIAQ – BREATHING THE FRESH AIR OF ALVE-ONE®

When foamed with Alve-One® solutions, car parts **do not emit any strong gas smell (ammonia)** and contain **negligible quantities of VOC** (volatile organic compounds). These foamed car parts will contribute to a significantly improved Vehicle Indoor Air Quality.

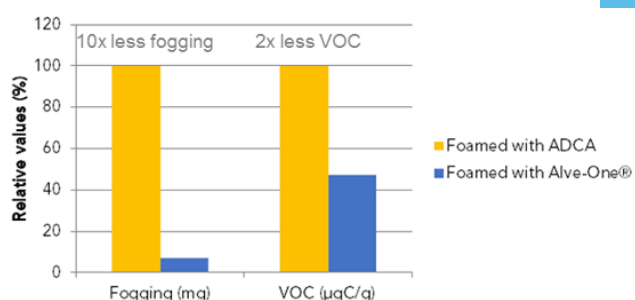


Fig 4. Measurements according to DIN 75201 (2011) and VDA 277:1995

- ✓ Car parts produced with Alve-One® comply with the BGIA and GADSL and do not emit ammonia or any of its derivatives.
- ✓ One less SVHC to declare in the production of car parts as demanded by article 33, paragraph 1 from Reach.

- ✓ With a more efficient kinetic process than the market reference's, Alve-One® solutions can reduce cycle times, leading to potential savings and higher outputs.

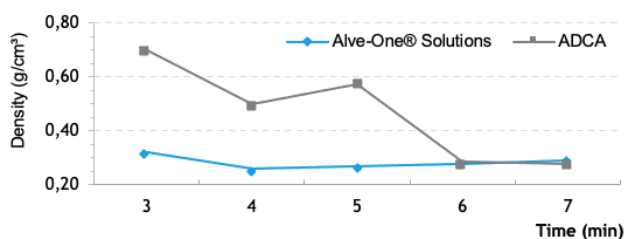


Fig 5. Evolution of crosslinked EVA foams' density during the manufacturing process when using ADCA and Alve-One® products.

Alve-One® answering the Automotive needs:

- ✓ Free of any GADSL or SVHC substance
- ✓ Reducing the CO2 equivalent foot print of vehicles
- ✓ VOC emissions and fogging reduction
- ✓ Avoids the 'new car smell'
- ✓ Vehicle parts light weighting and improved recyclability
- ✓ Foams' production optimization may be achieved
- ✓ Reliability of supply and consistency of processing



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