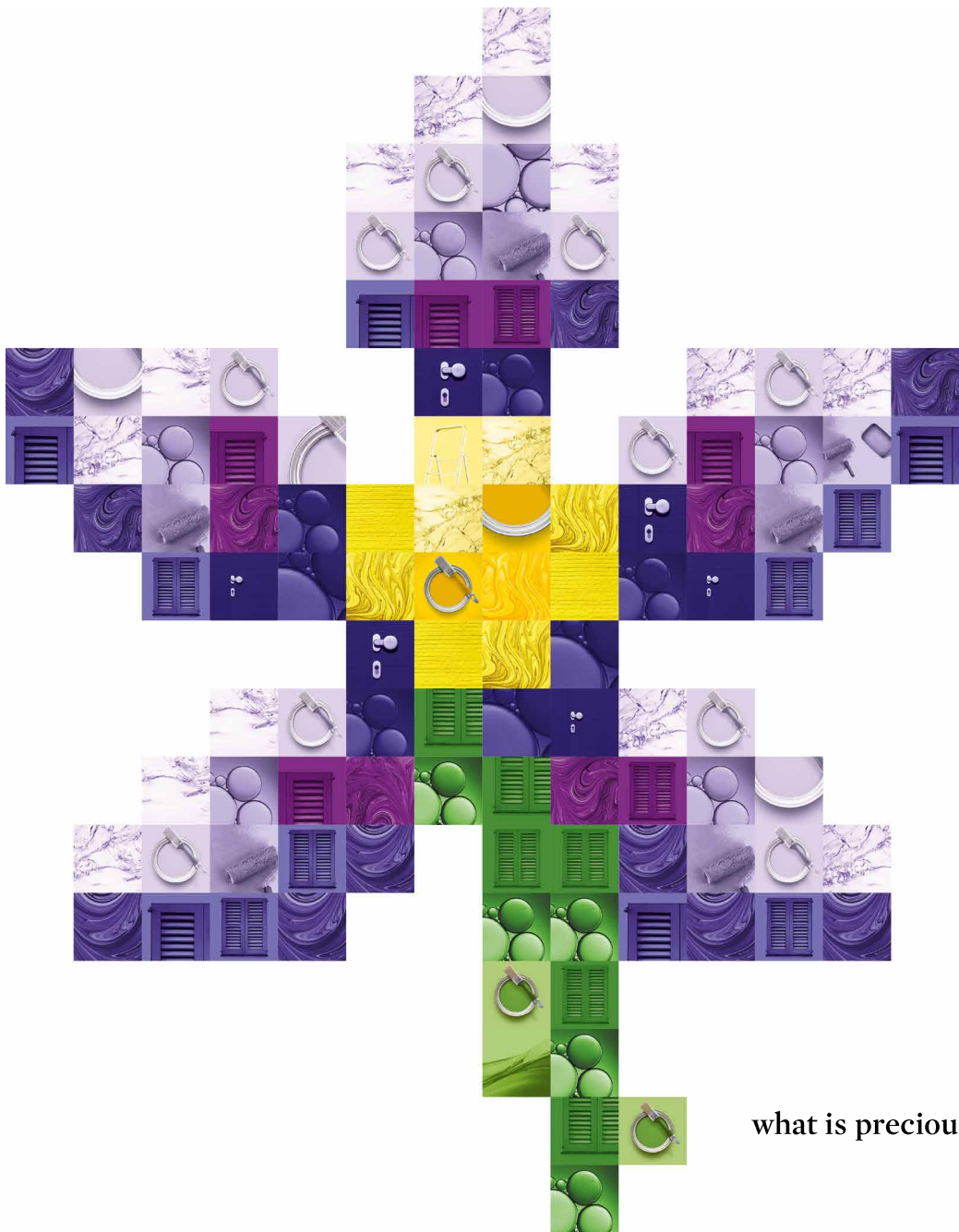


Because life can
only flourish in clean air
DISPERSOGEN® SP PLUS
FOR BIOCIDES-FREE
INDOOR PAINTS



ECOTAIN®

what is precious to you?

The best of both solutions IN A SINGLE PAINT

Dispersogen® SP PLUS adds what's been missing

Organosilicate paints are a great compromise between silicate and dispersion paints but up to now still lacked the total ease of use of the latter. Our new additive fixes this problem.

When prepared with Dispersogen® SP PLUS, organosilicate paints remain biocide-free and breathable but also acquire the more convenient flow behavior of dispersion paints. A game-changing addition to the advantages of silicate paints – and by no means the only one!

A PRODUCT PROFILE BURSTING WITH BENEFITS

INNOVATIVE



Polymeric
Anionic
50% active content
Patented cutting-edge
technology

SUSTAINABLE



VOC/SVOC-free
APEO-free
Hazard label-free
Suitable for use in
eco-labeled products

MULTIFUNCTIONAL

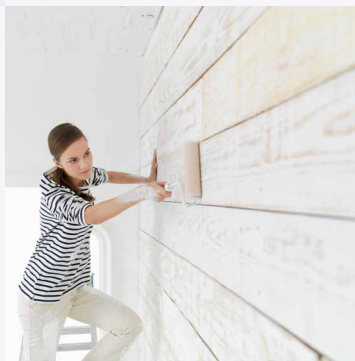


2-in-1 product
Works both as dispersant
and stabilizer
Reduces formulation
complexity

FLOW-ENHANCING



Ensures low viscosity
Increases formulation
flexibility
Enables precise rheology
adjustment



There's no place LIKE HOME

A bad time for biocides

Our home is the place we live and breathe in every day, so it's no wonder that there's growing demand for solutions that make it healthier – such as waterborne paints that neither contain air pollutants nor other hazardous substances.

One of the latest trends on the architectural coatings market is the use of biocide-free paints, which offer the benefit of being less allergenic.






Biocides are often used for in-can preservation in paints but are under scrutiny because some of them can cause sensitization and eczema. The German eco-label »Blauer Engel« has banned two very common biocides from the family of isothiazolinones from use in matte interior paints, and authorities may soon do the same.



Which kind of paints are biocide-free?

Typical biocide-free paints are silicate paints and new generation organosilicate paints. They also have the advantage of being more »breathable« than conventional dispersion paints: Due to their good vapor permeability, they are less likely to trap moisture and cause damp.

The only problem is that these paints are usually harder to use. They have a special flow behavior that makes them thicken up during storage and more difficult to stir and apply. Though consumers do increasingly ask for them, this still somewhat hinders their success.

	SILICATE PAINT	DISPERSION PAINT	ORGANOSILICATE/ BIOCIDE-FREE INDOOR PAINT without Dispersogen® SP PLUS	ORGANOSILICATE/ BIOCIDE-FREE INDOOR PAINT with Dispersogen® SP PLUS 
				
	●	●	●	●
Bicide-free	●	●	●	●
Breathable (vapor permeability)	●	●	●	●
Easy to stir	●	●	●	●
Easy to apply	●	●	●	●
TEST PARAMETERS	DISPERSION PAINT	ORGANOSILICATE/ BIOCIDE-FREE INDOOR PAINT without Dispersogen® SP PLUS	ORGANOSILICATE/ BIOCIDE-FREE INDOOR PAINT with Dispersogen® SP PLUS	
RHEOLOGY	Viscosity	●	●	●
	Thixotropy	●	●	●
	Yield stress	●	●	●
STORAGE STABILITY	Syneresis	●	●	●
	Sedimentation	●	●	●
	Preservation	●	●	●
BREATHABILITY	Vapor permeability	●	●	●

- excellent
- medium
- bad

A viscosity curve similar to dispersion paints **COMBINED WITH LOWER YIELD STRESS**

A flow so optimized it's hard to tell the difference

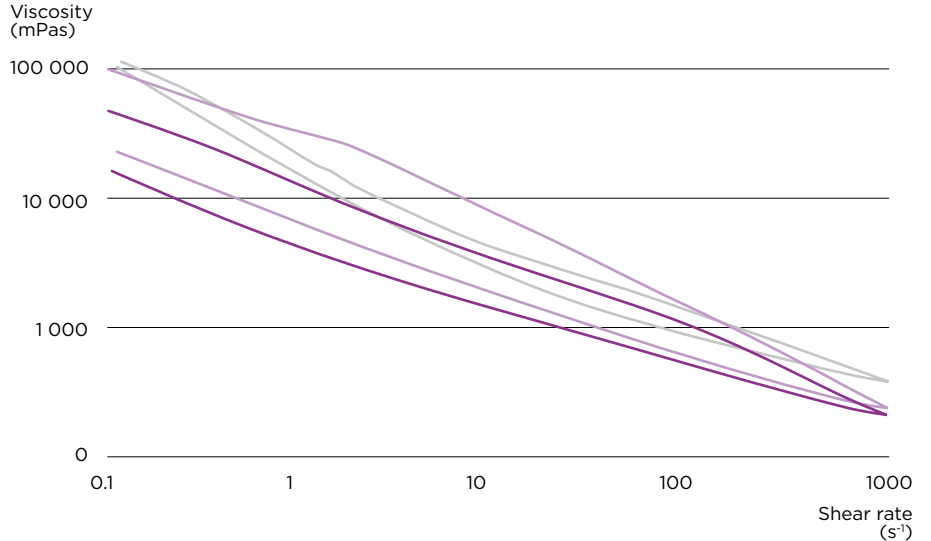
After a simulated 2-year storage (28 days of aging at 50 °C), the organosilicate paint formulated with Dispersogen® SP PLUS exhibited a very similar thixotropy to that of a standard dispersion paint. By contrast, the organosilicate paint made without our flow-optimizing additive seemed to have significantly higher thixotropy.



Low yield stress that makes painting less stressful

Meaning that not much force is required to break their structure at rest, low yield stress is desirable for paints because it ensures good processability and a good flow profile. Compared to a typical dispersion paint and standard organosilicate paint, an organosilicate paint formulated with Dispersogen® SP PLUS exhibited lower yield stress in our tests, being easier to deform and stir after a simulated 2-year storage than both other formulations.

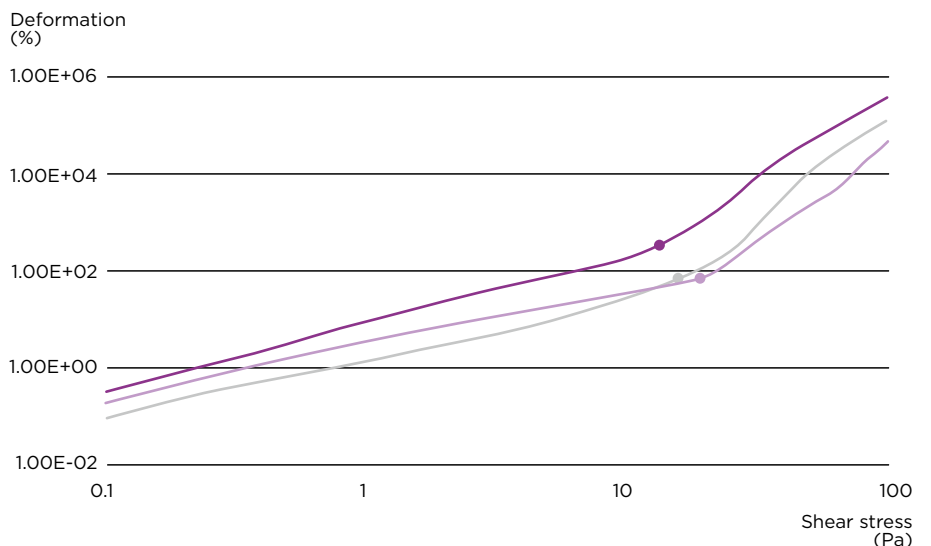
VISCOSITY CURVE AFTER STORAGE (28 DAYS, 50 °C)



VISCOSITY @ 60 s⁻¹

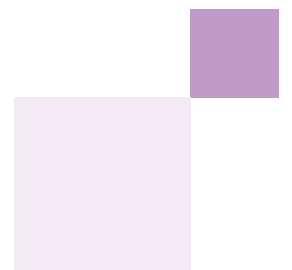
Dispersion paint	1 626
Standard organosilicate paint	2 793
Organosilicate paint with Dispersogen® SP PLUS	1 194

YIELD STRESS AFTER STORAGE (28 DAYS, 50 °C)



VISCOSITY @ 60 s⁻¹

Dispersion paint	17
Standard organosilicate paint	21
Organosilicate paint with Dispersogen® SP PLUS	12



Makes formulations less complex AND STORAGE EASIER



A 2-in-1 additive that removes the need for stabilizers

Paint formulators have to juggle with a large number of interacting ingredients, and anything that reduces that number can make their task a lot easier. Dispersogen® SP PLUS is a 2-in-1 additive that doesn't only work as a dispersant but also as a stabilizer.

This eliminates the need for adding other stabilizers to biocide-free organosilicate paints, such as quarternary compounds and amine derivatives. As a result, there are significantly fewer ingredients paint makers have to procure and worry about during formulation.

POS	INGREDIENTS	STANDARD ORGANOSILICATE/ BIOCID-FREE PAINT	ORGANOSILICATE/ BIOCID-FREE PAINT WITH NEW ADDITIVE
		STABILIZER 1 (16% ACTIVE) STABILIZER 2 (50% ACTIVE)	DISPERSOGEN® SP PLUS (50% ACTIVE)
1	Water	15.00 – 20.00%	15.00 – 20.00%
2	PU thickener	0.30%	0.30%
3	Cellulose thickener	0.08%	0.08%
4	Polyacrylate dispersant	0.30%	–
5	Stabilizer 1 (quaternary compound)	1.00 – 2.00%	–
4+5+14	DISPERSOGEN™ SP PLUS (POLYMER)	–	0.25 – 0.50%
6	Polymeric defoamer	0.40%	0.40%
7	Titanium dioxide	17.00%	17.00%
8	Talcum d50% = 10 µm	5.00%	5.00%
9	Calcium carbonate GCC d50% = 1-5 µm	27.00%	27.00%
10	VAE binder	10.00 – 20.00%	10.00 – 20.00%
11	Water	2.00%	2.00%
12	PU thickener	0.50%	0.50%
13	Water glass, potassium solution 28%	1.00 – 5.00%	1.00 – 5.00%
14	Stabilizer 2 (amine derivative)	0.40 – 0.80%	–
15	Water	ad 100.00%	ad 100.00%
		100.00%	100.00%

RHEOLOGICAL DATA	STANDARD DISPERSION PAINT	STANDARD ORGANOSILICATE/ BIOCID-FREE PAINT	ORGANOSILICATE/ BIOCID-FREE PAINT WITH DISPERSOGEN® SP PLUS
VISCOSITY (mPas) 24 h/RT	1 631	1 968	1 175
VISCOSITY (mPas) 28 days/50 °C	1 626	2 793	1 194
THIXOTROPY 28 days/50 °C	24 980	44 750	29 220
YIELD STRESS (PA) 28 days/50 °C	17	21	12



Fewer worries – and a better outcome

Dispersogen® SP PLUS not only replaces stabilizers in biocide-free organosilicate paints but does their job better. Both after 24 hours at room temperature and a simulated 2-year storage (28 days at 50 °C), the paint with our additive was a lot less viscous than a standard organosilicate paint, and even than a standard dispersion paint. It also exhibited significantly lower

yield stress than both other paints and was only slightly more thixotropic than a standard dispersion paint, outmatching the standard organosilicate paint by a wide margin. The lower viscosity achievable with Dispersogen® SP PLUS opens a wider formulation window and helps customize the rheology of finished paints with thickeners.



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