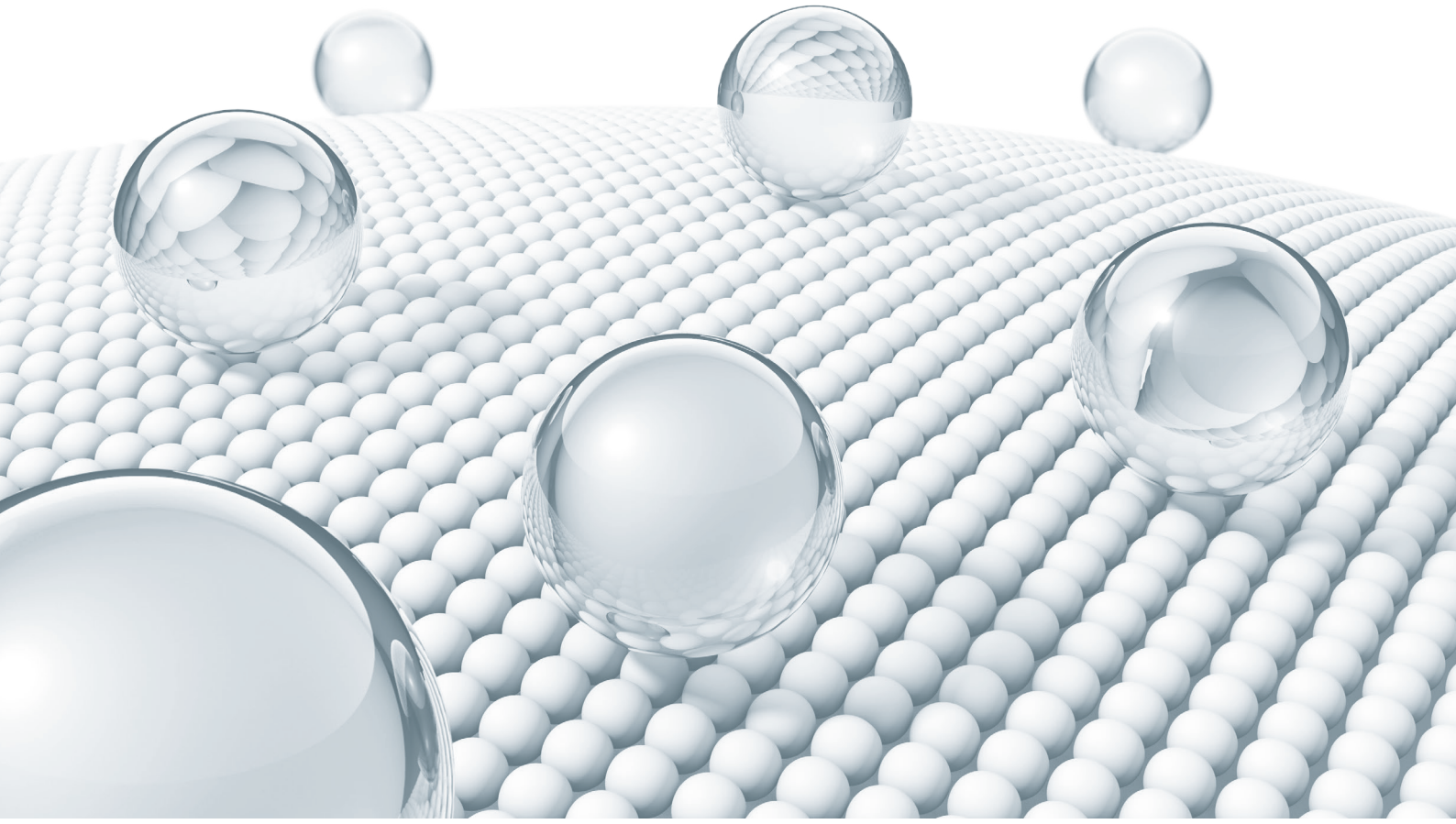
HB SiO2 Coating Technology
Fluorine Free
Liquid Glass Coatings



www.ccm-liquid-glass.com

The Situation

In the early 2000s it became apparent that there was an "issue" with Perfluorooctanoic acid, also known as PFOA or C-8 or any number of branded coatings. This technology is present in nearly every home in the "modern world". Used to create everything from non-stick pans, to contact lenses, C-8 is everywhere and it is exceptionally effective. However…

The issue with this technology was that it was proven that items coated with PFOA technology degraded over time and the particulates within these coatings found their way into all aspects of our home, working environments and also into the organs within our bodies. So far so bad, but what is worse is that these agents are known as Forever Chemicals as, in essence, they persist for 10s of thousands of years.

Despite this knowledge C-8 based coatings are still being used and supplied by thousands of organizations.

CCM HAVE NEVER USED C-8 TECHNOLOGY WITHIN ANY COATINGS.

Why do we use C-6 within our coatings?

Having been aware of the problems associated with C-8 agents, CCM chose a better route. In order to establish stain proofing CCM chose to follow prevailing guidance and to use C-6 technology within the coatings. We use **exceptionally small amounts** of C-6 agents within our coatings in order to establish stain proofing. The amounts are measured in a few PPM (parts per million).

We have used C-6 because *"These compounds do not appear to possess the biopersistence and potent systemic and reproductive toxicity that are characteristic of C-8-PFCs as a class. Instead, data from animal and epidemiological studies indicate that C6-PFCs are rapidly and completely excreted and do not appear to accumulate in biological fluids.*

(Rice. P.A Curr Envir Health Rpt (2015) 2:3 https:doi.org/10.1007/s 40572-014-0039-3)

CCM's way into the future

Having noted that CCM has never used PFOA technology it is clear that there is a possibility that all agents within the "fluorinated coatings sector" may be considered as potentially harmful and so we have created a new range of F-Zero compliant coatings. These coatings are completely free of any fluorinated agents.

Our water based "HB SiO2 coatings" offer our partners worldwide the opportunity to satisfy the demand for F-Zero coatings.

EU considers ban on, "forever chemicals", urges a search for alternatives

By Ludwig Burger

February 7, 2023, 5:56 PM (Reuters)

The European Union on Tuesday started to consider a proposal to ban widely used, potentially harmful substances known as PFAS or „forever chemicals" in what could become the bloc's most extensive piece of regulation of the chemical industry. The chemicals have been used in tens of thousands of products, including cars, textiles, medical gear, wind mills and non-stick pans due to their long-term resistance to extreme temperatures and corrosion…....Ban could take effect in 2026 or 2027.

CCM is prepared for the future.

Introducing CCM's "HB SiO2 coating technology"

(HB = hyperbranched silicon dioxide)

This stunning technology is completely fluorine free yet provides outstanding hydrophobicity.

The range is suitable for use in all areas but specifically, it is designed for use within the DIY/Retail and Commercial sectors where ease of application in a wide range of environments is essential.

The coatings perform in a very similar way to our world renowned Liquid Glass coatings in that they create a protective hydrophobic layer which is exceptionally easy to clean.

Key attributes

- Free from any form of fluorinated agents.
  This is essential for use in certain countries.
- Free from Solvents
  Alcohol can be added if required for certain applications eg. leather coating.
- Ease of application
  Easy to apply and very easy to buff when applied to auto surfaces and glass
- Excellent easy-to-clean effect.
  Shower screens, oven fronts and fridge exteriors are cleaned in seconds.
- Good durability.
  The coatings will last for approximately 1 year in areas of low abrasion.
- Biostatic effect.
  Reduces proliferation of bacteria.
- The additives used in order to create HB substrate specific coatings are often commonly used as additives to food or are used in standard domestic cleaning products.

Specifications

Application	simply wipe on, spray on, roller on or submerge
Consumption	glass approx. 5ml per m², carpet approx. 200ml per m²
Layer thickness	200nm +/- (nano meter)
Temperature stability	150°C permanent
Water repellency	contact angle between 145° and 110°
Oil repellency	not resistant to oil
Chemical/acid/alkaline resistance	between ph 1 and ph 14
Abrasion resistance (mechanical)	high
Weather/UV resistance	1000h (ISO11507 A)

HB Coatings – Product Range

HB SiO2 is supplied as a concentrate. Our F-zero range uses the same base concentrate. This concentrate is adjusted to match the target usage.

Glass painted surfaces, plastic and stainless steel

On surfaces such as windows, or car paintwork, simply wipe on and allow the coating to dry for some minutes and then gently buff the surface with a clean soft cloth or microfibe. The coating is functional within minutes but it takes some hours for the coating to become fully cured and optimally functional. The drying time will vary depending on the prevailing climate but on average buffing can be conducted after 10 minutes at 20°C. (These coatings are ideal for application in warmer climates where alcohol based coatings dry very rapidly.)

Concentrate

Content	Art. No.
1 liter	7680-1
5 liter	7680-5
20 liter	7680-20

Mixing Instruction:

10-20% HB SiO2 Concentrate
59.9-69.9% demin. water
0.1% glycoic acid
20% isopropanol

Fabrics

The HB coating is available in 2 variants these being Spray-On and Wash-In. The wash-in variant is a more concentrated variant which is designed for application to multiple garments or for application to sports jackets etc. by submersion.

Concentrate

Content	Art. No.
1 liter	7686-1
5 liter	7686-5
20 liter	7686-20

Mixing Instruction:

10% HB SiO2 Concentrate
88% demin. water
2% acetic, phosphoric, formic or glycolic acid

Wash-in

Concentrate

Content	Art. No.
1 liter	8683-1
5 liter	8683-5
20 liter	8683-20

Mixing Instruction:

20% HB SiO2 Concentrate
78% demin. water
2% acetic, phosphoric, formic or glycolic acid

Wood

Concentrate

Content	Art. No.
1 liter	698-20
5 liter	698-120
20 liter	698-IBC

Mixing Instruction:

10% HB SiO2 Concentrate
77% demin. water
0,5% acetic, phosphoric, formic or glycolic acid
12.5% butyl glycol or ethanol

Stone and mineral surfaces

Concentrate

Content	Art. No.
20 liter	7628-20
120 liter barrel	7628-120
1.000 liter IBC	7628-IBC

Mixing Instruction:

10% HB SiO2 Concentrate
89,5% demin. water
0,5% acetic, phosphoric, formic or glycolic acid

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