FUSION®

The PFOA- & PTFE-free sol-gel nonstick from Whitford

The line of improved sol-gel "ceramic" nonstick coatings from Whitford

How new Fusion compares with conventional and other sol-gel nonstick coatings

Whitford launched Fusion in 2011 with important advantages over other "ceramic" nonsticks, such as a simpler, more user-friendly chemistry that makes preparation easier. *Fusion is a coating system based on sol-gel technology, a hybrid of organic and inorganic chemistry (see other side).*

Fusion vs conventional nonsticks

1. Fusion is totally free of any PTFE and PFOA, the two ingredients which, however unfairly, have received negative publicity recently (all so-called ceramic coatings are free of these).

2. Fusion (like other sol-gel nonsticks) can be taken to extreme temperatures (455˚C/850˚F). If for any reason a fry pan, for example, is left on high heat with nothing in it, the coating is far more likely to survive than conventional nonsticks, which begin to decompose at 345˚C/650˚F.

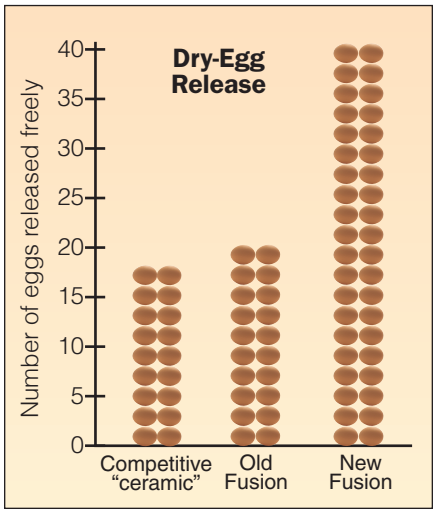
3. It is waterborne: handling, mixing and cleanup are accomplished with water.

4. It cures at a lower temperature, using less energy and saving money.

Fusion vs other "ceramic" nonsticks

Whitford research and development chemists have been working to improve the original version, and have now done so in three important ways:

1. Better release: Sol-gel nonsticks by definition of their unique chemistry have never had the release of today's PTFE-based nonsticks, but Fusion is getting close. New Fusion has significantly better release than all other sol-gel nonsticks we've tested.



2. Better stain resistance: Ceramic coatings tend to have good stain resistance. But new technology has taken Fusion's ability to resist staining of all kinds even further.

3. Improved gloss: Fusion's improved technology enables an extra-dense surface that offers several benefits. One is the improved stain resistance mentioned. Another is a surface so compact, so devoid of surface irregularities, that it gives a higher gloss than all other "ceramic" nonsticks tested. This means that any pots or pans coated with Fusion have more eye-catching shine at point of sale.

Total regulatory compliance: *As far as we can tell, Fusion is the only sol-gel nonstick with a legal letter verifying that it is compliant with the EU and US FDA for food contact.*

For more information, please contact us.

Whitford

Where good ideas come to the surface

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What is Fusion®?

A more detailed and technical explanation of this remarkable coating system.

In its simplest terms, Fusion is a coating system based on sol-gel technology, a hybrid of organic and inorganic chemistry.

This is why, in the coatings industry, such sol-gels have come to be known as "ceramic" coatings, a term used primarily in marketing communications to describe Fusion and other coating systems with similar composition or performances.

The sol-gel process is a chemical synthesis technique widely used in the fields of materials science and ceramic engineering.

The applications for such products are numerous. For example, scientists have used them to produce the world's lightest materials as well as some of its toughest ceramics.

One of the largest application areas is coatings. Protective and decorative coatings can be applied to glass, metal and other types of substrates with these methods. It is in this area that Whitford developed Fusion as a nonstick coating.

A "sol" is a solution in which particles are suspended. These particles undergo hydrolysis and condensation polymerization to form a "gel". This occurs when the different components of Fusion are mixed together prior to application.

When this gel is applied as a coating and is subsequently dried, a hard, glass-like film is created. The matrix of Fusion is a polymer network made up of both organic and inorganic components. Moreover the Fusion coating system has some physical characteristics (hardness, thermal resistance, chemical resistance, appearance) similar to those of some categories of ceramic enamels.

The unique engineering behind Fusion allows us to get the best out of the inorganic and the organic worlds of ceramics and polymers: the material is tough, impermeable and thermally stable as a ceramic, yet it provides the chemical inertness and nonstick properties of a polymeric material.

For more information, please contact your Whitford representative or contact Whitford directly (see addresses below).