

## BISPHENOL-FREE EPOXY RESINS FOR COMPOSITE MATERIALS

Specific Polymers is developing bisphenol-free epoxy resins based on substances derived from lignin (e.g. vanillin<sup>1</sup>) or sugar.

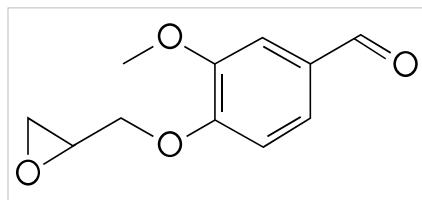


Figure 1/ Vanilline (n°CAS 22590-66-5)

As part of the VIBES project, Specific Polymers has developed (in collaboration with other project partners) composite materials based on bisphenol-free epoxy resins:

- / carbon fiber/vitrimer<sup>2</sup> epoxy resin composite panels for the aerospace industry (in collaboration with IDEC);
- / carbon fiber (from lignin)/ epoxy resin/natural linen reinforcement composite panels for the construction sector

(in collaboration with Juno Composites for resin infusion moulding, DITF and the University of Limerick for carbon fibers and FLIPTS & Dobbels for woven linen reinforcement textiles);

- / infusion-moulded fiber glass/ epoxy resin composite panels (in collaboration with Acciona).

According to Juno Composites, the mechanical performance of carbon fiber panels used in construction can meet or exceed that of traditional composites.

For more information:  
<https://vibesproject.eu/juno-composites-achieves-milestone-with-new-carbon-fibre-panel-featuring-bisphenol-free-epoxy-resin/>

Introduction of the First Composite Panel

<https://vibesproject.eu/first-successful-infusion-attempts-of-our-vitrimer-aeronautic-resin-performed-by-idec/>

<https://specificpolymers.com/bisphenol-free-epoxy-resins-to-substitute-dgeba/>

<sup>1</sup> In 2013, on the bisphenol substitution website, we mentioned an epoxy resin synthesized with vanillic acid derived from lignin as an alternative to BPA.

<sup>2</sup> Vitrimeres are plastics that are both solid and resistant like thermosetting compounds but remain shapable and malleable like glass when heated. They can be obtained by transesterification of epoxy monomers (e.g. limonene, terpenes, furfural derivatives).

## INGENIOUS PLANK: PLASTICISER-FREE FLOOR COVERINGS

HF Products has launched a new range of phthalate-free floor coverings: the Ingenious Plank range.

Ingenious Plank floor coverings are made from wood fibres encapsulated in a high-performance resin incorporating renewable raw materials (the exact nature of this resin has not been disclosed by HF Products).

According to HF Products, these products contain no PVC, phthalates, halogens, plasticisers or heavy metals.

Intended for residential or commercial use (in low-traffic areas), the coverings in the Ingenious Plank range are, according to their manufacturer, waterproof, scratch-resistant and 40% lighter than conventional products.

For more information:  
<https://www.ahfproducts.com/en-us/press/ahf-products-launches-the-next-generation-of-hybrid-sustainable-resilient-flooring-introducing-ingenious-plank.html>

## SUBSTITUTION OF PFAS: NOF METAL COATINGS OFFERS A NEW RANGE OF TOPCOATS

NOF Metal Coatings has developed a range of topcoats for metals. Based on a water-based silicate and acrylate resin, the composition is free from PFAS<sup>3</sup> and nonylphenols.

This range, which comprises three products (PLUS® XL 2 Silver, PLUS® VLh 2 Silver and PLUS® ML 2 Silver), offers good performance, according to its manufacturer:

- / tribological<sup>4</sup> ;
- / chemical resistance to industrial solvents and automotive fluids ;
- / multi-tightening stability with various counterpart materials<sup>5</sup> (cataphoretic paint, aluminium alloys, cast iron and steel).

NOF Metal Coatings points out that these coatings have applications in a wide range of sectors: industry, automotive and shipbuilding, construction, wind and solar energy, etc.

According to their manufacturer, these coatings can be applied by dipping or centrifuging in bulk or in racks, by simple spraying or by electrostatic spraying (these non-electrolytic application processes, according to NOF Metal Coatings, avoid the phenomenon of hydrogen embrittlement that causes cracking in metals).

The addition of aluminium pigments provides a silver colour for assemblies where the fasteners may be visible. In addition, fluorescent pigments have been incorporated into the products to make it easier to identify treated parts.

For more information:  
<https://www.nofmetalcoatings.com/app/uploads/sites/2/2024/06/EN-PFAS-free-topcoats-Ahead-of-regulation-for-more-environmentally-friendly-coatings-NOF-Metal-Coatings-Group.pdf>

<https://www.nofmetalcoatings.com/europe/product/?n=plus-xl-2-silver>

<https://www.nofmetalcoatings.com/europe/product/?n=plus-vlh-2-silver>

<https://www.nofmetalcoatings.com/europe/product/?n=plus-ml-2-silver>

<sup>3</sup> The PFAS generally used for the production of coatings are fluoropolymers, the most commonly used being PTFE.

<sup>4</sup> Tribology is a science which studies the phenomena likely to occur between systems in contact, whether stationary or in relative movement (lubrication, friction, wear of components, etc.).

<sup>5</sup> Material of a part which is subject to friction with the part coated with the coating.

## SOY FLOUR-BASED FOAMS TO FIGHT FIRES WITHOUT USING PFAS

Cross Plains Solutions' SoyFoam TF 1122 fire-fighting foam, made from soya flour, is "PFAS-NI". The term 'PFAS-NI' indicates that no PFAS have been intentionally added to this product. However, this term also indicates that their presence could not be excluded: PFAS could be present, for example, as pesticides for soya cultivation. It should be noted, however, that analysis of the fluorine in this product did not reveal any detectable concentration (the detection limit being 1 µg/l).

Cocamidopropyl betaine (n°CAS 61789-40-0) is one of the wetting<sup>6</sup> and extinguishing<sup>7</sup> agents used in this foam to replace PFAS.

SoyFoam TF 1122 wetting agents are certified by the National Fire Protection Association (NFPA)<sup>8</sup> to NFPA 1<sup>8</sup> for Class A and B fires<sup>9</sup>. Tests of this standard cover extinguishing

wood box fires, depth fires, heptane fires and fire spread in fibreboard.

According to Cross Plains Solutions, this product is compatible with standard foam injectors and ventilation nozzles.

SoyFoam TF 1122 fire-fighting foam is certified:

- / GreenScreen Gold level<sup>10</sup> ;
- / biodegradable by the OECD<sup>11</sup> ;
- / 84% biosourced by the US Department of Agriculture's BioPreferred® programme.

For more information:  
<https://www.soyfoamsolutions.com/>

<https://www.soybiobased.org/success-stories/new-firefighting-soyfoam-is-first-and-only-greenscreen-certified-gold/>

<sup>6</sup> A wetting agent is a surfactant that reduces the surface tension of water, allowing it to penetrate solids more quickly.

<sup>7</sup> The purpose of an extinguishing agent is to deposit a thin film on the material, thus containing the fire by depriving it of oxygen.

<sup>8</sup> The National Fire Protection Association (NFPA) is an American organisation founded to combat the physical and material damage caused by fires. Among other things, it produces safety standards to combat this damage as well as other risks.

<sup>9</sup> Class A fires are generally caused by 'solid' or 'dry' materials (wood, paper, fabrics, certain plastics, etc.). Class B fires are fires involving liquids or liquefiable solids (petrol, hydrocarbons, solvents, etc.).

<sup>10</sup> Developed in the US by the Toxics Use Reduction Institute (TURI) at the University of Massachusetts, GreenScreen Certified™ is an independent certification standard that promotes the use of PFAS-free chemicals. The Gold level of certification requires that each chemical substance in the product is assessed using the GreenScreen for Safer Chemicals method and that its assessment reveals a satisfactory level in terms of chemical risks to chemical health and the environment.

<sup>11</sup> OECD - Organisation for Economic Co-operation and Development.

## RECENTLY PUBLISHED ON THE CHEMICALS SUBSTITUTION WEBSITE...

Ban on bisphenol A and other bisphenols in materials and articles that come into contact with foodstuffs.

<https://substitution-bp.ineris.fr/en/news/ban-bisphenol-and-other-bisphenols-materials-and-articles-come-contact-foodstuffs>

## COMING SOON

### Biobased Coatings Europe 2025

The 6th edition of Biobased Coatings Europe will be held on 4 and 5 June 2025 in Madrid (Spain) and will bring together the main stakeholders in the biobased materials and coatings industries: producers, suppliers and specialists in biobased materials, paints and coatings, resins, binders, pigments and additives.

Emerging technologies in the bio-based coatings industry presented at the event could include alternatives to bisphenols, alkylphenol ethoxylates and PFASs.

<https://www.wplgroup.com/aci/event/biobased-coatings-europe/>

### Polymers in Footwear

The Polymers in Footwear conference is returning to the US for the fourth time on 16 and 17 July 2025, in Portland. The event will focus on the latest innovations in materials for footwear applications, and alternatives to phthalates and PFAS may also be presented.

[Home - Polymers in Footwear](#)

### PFAS Workshop

The second PFAS Workshop will be held in Brussels (Belgium) from 02 to 03 June 2025. Among the main topics on the agenda will be the substitution of PFAS in plastics.

[Home - PFAS Workshop](#)

### Future of Surfactants Summit

The next edition of the Future of Surfactants Summit will bring together in London (United Kingdom) on 11<sup>th</sup> and 12<sup>th</sup> June 2025 manufacturers of surfactants and industrial cleaning products and producers and suppliers of raw material.

This meeting will be an opportunity to discuss the latest innovations in the field of surfactants that can replace alkylphenol ethoxylates.

[ACI | Future of Surfactants Summit - ACI](#)