



FAKOLITH[®]
chemical systems

a Fakolith Group Company

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Painting of metal tanks for food, beverages and drinking water, with certified epoxy foodgrade paint for direct and indirect contact with food and drinks.

Description of the problem

Painting and/or repairing metal tanks, so that they are suitable for contact with food, beverages, drinking water used in food processing, in the agricultural industry, or water for human and animal consumption, is a very serious matter that requires suitable products that meet the requirements and tests that the EU Regulation 10/2011 and or FDA CFR21 175.300 specifies, both for the producer and for each marketed product suitable for contact with food. In any case, the manufacturer must provide the customer the detailed Declaration of Conformity (Compliance Declaration), Performance Declaration and CE marking test, of each product.



Fakolith, with Sanitary Registration ES-39.005259/T for the manufacture of materials in contact with food, is periodically inspected by the health authority, and has FoodGrade paints, varnishes and coatings with all the documentation and tests that guarantee their suitability for direct and indirect contact, with solutions tested for all food groups, liquids or solids, and for prolonged storage. In addition, when we talk about tanks, we must not forget that we are generally talking about confined spaces, so the application company, apart from adequately preparing the base, must follow specific PPE procedures and mandatory safety measures. Thanks to the high performance food contact epoxy paints [FK-45 FoodGrade](#) (epoxy 90% solids EU certified), [FK-45 FoodGrade Hygienic](#) (epoxy-novolac 95% solids EU certified) or [FK-100 FoodGrade](#) (100% solids EU and FDA certified) we have a wide range of options, which are complemented by the sometimes necessary [FAKOPUR FoodGrade](#) (2-component polyurethane). All Fakolith FoodGrade food contact coatings are treated with BioFilmStop Green antimicrobial food technology, which helps to inhibit the nesting of bacteria, biofilm and viruses that cause foodborne illnesses, thus increasing food and sanitary safety. We recommend consulting our "[High Solids Epoxy Application Guide](#)" before starting work with these paints. Regardless of major repairs, the painting or repainting of a mineral food tank, as a minimum and in general, would take into account the following basic options.

Summary of the most common basic solution and procedure

The ideal pre-treatment to ensure maximum adhesion to the iron-steel base (ask other metals), is the complete removal of existing paint layers by sandblasting SA 2.5 Rz>50, so we get to the base metal clean of rust and with

adequate roughness to ensure the best possible adhesion of the primer and / or paint. In addition, you can use chemical stripping (e.g. with [Oxystrip](#)). If this ideal preparation of the base is not feasible, and you opt for repainting, you should alternatively proceed to sand the existing paint, checking the correct adhesion of the existing paint to the base with Class 0 grating test. Finally proceed to a general cleaning with [FK-111](#) and the elimination of corrosion and rust spots with [FK-9 Gel](#). Once the base has dried, proceed to painting with one of the following paints from our FoodGrade food range:

1. ANTICORROSIVE PRIMER:

According to the technical data sheet, it is always necessary for not sandblasted metals, galvanized or aluminum, in any case.

- [FK-44 POX](#): Apply 1-2 coats of water-based epoxy anticorrosive primer Fakolith epoxy food paint. Alternatively, use compatible anticorrosive epoxy primer, or paint directly on properly sanded iron SA 2,5 Rz>50, according to technical specifications.

2. SURFACE PAINTING:

Final painting between 2 to 4 coats with Fakolith FoodGrade food grade epoxy or polyurethane paint, whichever is more convenient in each case. Depending on the application, environmental and environmental conditions, we recommend diluting the epoxy range up to 10% with [FK-45 OEM Solvent FG](#), a food grade solvent, to provide better wetting, leveling and pot-life extension if necessary. See application details in its Technical Data Sheet.

- **Option A - [FAKOLITH FK-100 FOODGRADE](#)**: The best technical option, with the best physical and chemical resistance and the best corrosion protection in its category. The only one with double EU and FDA food contact certification. In addition, FK-100 FoodGrade as a bio-hybrid epoxy paint has an exemption for not being considered dangerous goods for transport by road, sea or air. It is especially suitable for use where there is a higher risk of corrosion, i.e. on non-solid food and beverages.

- **Option B - [FAKOLITH FK-45 FOODGRADE](#)**: The use of this pioneering high solids food contact epoxy paint, with wide color range is yet another option to consider.

- **Option C - [FAKOLITH FK-45 FOODGRADE HYGIENIC](#)**: Due to its excellent characteristics, this epoxy-novolac is recommended both in general and in certain special situations, for >10.000 l. tanks

- **Option D - [FAKOPUR FOODGRADE](#)**: 2-component polyurethane paint, especially recommended for outdoor situations or exposed to UV light.

Application process

1.- [FK-44 POX \(Improved formulation\)](#)

PRODUCT SUMMARY: FK-44 Pox is a 2-component waterborne epoxy primer, providing excellent adhesion on a wide range of metals and alloys in general, adding miscellaneous anticorrosive properties of zinc and aluminum phosphate, lamellar fillers and organic anticorrosive agents. It is a low voc primer, easy to apply, low odor, low thickness, very fast drying, able to start drying even at low temperatures.

FIELDS OF USE: Primer recommended mainly for open surfaces of iron, steel, stainless steel, copper, galvanized and aluminum, sandwich panel, metal structures, equipment, etc.. It is also recommended for partial repairs of open surfaces, since it can be applied over remains of other compatible primers and paints, properly prepared, well adhered to the base and in good condition. Compatible and recommended for metal surfaces that can be finished with 1 and 2 component Fakolith paints and coatings. For use as an initial waterborne epoxy primer in anti-corrosion systems based on ISO 12944. Used as a regulating and adherence primer it can be applied on mineral bases and other compatible surfaces.

STANDARD COLOR: Light Gray RAL 7035 (White, on request)

APPLICABLE by brush, roller, Airmix or Airless.

AVERAGE YIELD: It is variable, depending on the recommended layer thickness, the texture and absorption of the surface and application method, and its average yield can range between 6.25 and 12.5 m² per liter.

- For a thickness of 40 µm dry - 80 ml/m² are consumed - yielding 12.5 m²/L.
- For a dry thickness of 80 µm - 160 ml/m² - yielding 6.25 m²/L.

For a correct application follow the indications in the technical data sheets, application guides and safety data sheets. In case of doubt, please contact our technical service.

2.- OPTION A - FK-100 FoodGrade

PRODUCT SUMMARY: FK-100 FoodGrade is a 100% solid, 2-component epoxy food contact bio-hybrid paint, with double certification for direct contact with food and beverages, the European EU 10/2011, and the American FDA 21 CFR 175.300. High performance paint, low Voc, low bio-based odor, gloss finish, with CE marking tests and excellent anticorrosive and physicochemical resistance in its category. Especially indicated for the protection and painting of surfaces in direct, occasional and indirect contact with food, beverages, water for food processing and drinking water.

Product treated (BPR Art 3 and 58) with BioFilmStop FG antimicrobial technology, specific FoodGrade version, highly effectiveness tested against bacteria and other pathogenic microorganisms such as coronavirus, and always according to EU 10/2011 and FDA 21 CFR 175.300 regulations. ISO 22196 and ISO 21702 effectiveness test (Escherichia coli, Listeria monocytogenes, Bacillus subtilis, Pseudomonas aureginosa, Staphylococcus aureus, Salmonella enteritidis, Legionella pneumophila, Coronavirus Feline). The paints and coatings of the Fakolith FoodGrade range contribute to the positive compliance with CE 852/2004, are manufactured under HACCP and Good Manufacturing Practices (GMP) according to CE 2023/2006 and/or FDA 21 CFR 174.5, improving the hygiene, food and health safety of surfaces and environments.

FIELDS OF USE: Following the technical indications for each system, FK-100 FoodGrade can be applied inside silos, tanks and pipes, walls, ceilings, skirting boards, floors, metal structures, machinery and equipment, large aquariums and fish farms, cold and freezing rooms, food warehouses, panels, food transport, etc., always indoors. Especially in the food industry and healthcare sectors, hospitals and clinics, and also in industry, civil works and public and private buildings in general. Compatible with most mineral surfaces, concrete, sandblasted metals SA 2,5 Rz>50, metals properly primed, lacquered panels and on other paints and / or compatible primers well bonded and other surfaces resistant to cut-cross test Class 0-1 UNE-DIN EN ISO 2409:2007 and traction EN ISO 4624:2016 Rigid Systems: ≥1,0 (0,7) b N/mm². (Without traffic loads) and: ≥2,0 (1,5) b N/mm² (With traffic loads).

STANDARD COLORS: Pearl White RAL 1013, Oxide Red RAL 3009 and Grey RAL 7004 (Please check availability, price and minimum required quantity for other colors from our FoodGrade chart or other RAL colors, except white which is not available in this product).

APPLICABLE with brush, roller, Airless or AirMix preferably heated.

With Declaration of Compliance, Performance and CE marking.

AVERAGE YIELD: according to recommended coat thickness, depending on use of FK-100 FoodGrade

- Dry thickness = Wet thickness: 200 µm - consumption is 265 gr/m² - a yield of 3,77 m²/kg.
- Dry thickness = Wet thickness: 300 µm - consumption is 395 gr/m² - a yield of 2,53 m²/kg.
- Dry thickness = Wet thickness: 350 µm - consumption is 463 gr/m² - a yield of 2,16 m²/kg.
- Dry thickness = Wet thickness: 400 µm - consumption is 530 gr/m² - a yield of 1,89 m²/kg.
- Dry thickness = Wet thickness: 500 µm - consumption is 660 gr/m² - a yield of 1,51 m²/kg.
- Dry thickness = Wet thickness: 795 µm - consumption is 925 gr/m² - a yield of 1,08 m²/kg.

For a correct application follow the indications in the technical sheets, application guides and safety data sheets. In

case of doubt consult our technical service.

2.- OPTION B - FK-45 FoodGrade

PRODUCT SUMMARY: FK-45 FoodGrade is a 2-component epoxy food contact paint or varnish, with very high solids content, certified for direct and indirect contact with food, according to the European regulation EU 10/2011. High performance paint, low Voc, low odor, gloss finish, with CE marking tests and excellent physicochemical resistance in its category. Especially indicated for the protection and painting of surfaces in direct and indirect contact with food, beverages, water for food processing and drinking water.

Product treated (BPR Art 3 and 58) with BioFilmStop FG antimicrobial technology, specific FoodGrade version, highly effectiveness tested against bacteria and other pathogenic microorganisms such as coronavirus, and always according to EU 10/2011 and FDA 21 CFR 175.300 regulations. ISO 22196 and ISO 21702 effectiveness test (Escherichia coli, Listeria monocytogenes, Bacillus subtilis, Pseudomonas aureginosa, Staphylococcus aureus, Salmonella enteritidis, Legionella pneumophila, Coronavirus Feline). The paints and coatings of the Fakolith FoodGrade range contribute to the positive compliance with CE 852/2004, are manufactured under HACCP and Good Manufacturing Practices (GMP) according to CE 2023/2006 and/or FDA 21 CFR 174.5, improving the hygiene, food and health safety of surfaces and environments.

FIELDS OF USE: Following the technical instructions for each system, FK-45 FoodGrade can be applied inside silos and tanks and pipes, and given its high physical-chemical resistance, it is also highly recommended for direct indirect and occasional contact on walls, ceilings, skirting boards, floors, metal structures, machinery and equipment, cold and freezing rooms, food warehouses, panels, food transport, objects, etc., always indoors. Especially in the food industry and healthcare sectors, hospitals and clinics, and also in industry, civil works and public and private buildings in general. Compatible with most mineral surfaces, concrete, sandblasted metals SA 2,5 Rz>50, metals properly primed, lacquered panels and on other paints and / or compatible primers well bonded and other surfaces resistant to cut-cross test Class 0-1 UNE-DIN EN ISO 2409:2007 and traction EN ISO 4624:2016 Rigid Systems: $\geq 1,0$ (0,7) b N/mm². (Without traffic loads) and: $\geq 2,0$ (1,5) b N/mm² (With traffic loads).

STANDARD COLORS: Transparent varnish, White RAL 9003, Light Ivory RAL 1015, Oxide Red RAL 3009 and Grey RAL 7004, Green RAL 6002, Blue RAL 5012, Yellow RAL 1003 and Black RAL 9017 (Please check availability, price and minimum required quantity for other colors from our FoodGrade chart or other RAL colors).

APPLICABLE: with brush, roller, Airless or AirMix preferably heated.

With Declaration of Compliance, Performance and CE marking.

AVERAGE YIELD PAINT: according to recommended coat thickness, depending on use of FK-45 FoodGrade

- Dry thickness 200 μm = wet 302 gr/m² (222 ml/m²) - yield 3,31 m²/kg (4,5 m²/L).
- Dry thickness 300 μm = wet 453 gr/m² (333 ml/m²) - yield of 2,21 m²/kg (3,00 m²/L).
- Dry thickness 350 μm = wet 528 gr/m² (389 ml/m²) - yield of 1,90 m²/kg (2,57 m²/L).
- Dry thickness 400 μm = wet 604 gr/m² (444 ml/m²) - yield of 1,66 m²/kg (2,25 m²/L).
- Dry thickness 500 μm = wet 755 gr/m² (555 ml/m²) - yield of 1,32 m²/kg (1,80 m²/L).
- Dry thickness 700 μm = wet 1058 gr/m² (778 ml/m²) - yield of 0,95 m²/kg (1,28 m²/L).

AVERAGE YIELD TRANSPARENT VARNISH:

- Dry thickness 50 μm = wet 58 gr/m² (53 ml/m²) - yield of 17,27 m²/kg (18,87 m²/L).
- Dry thickness 75 μm = wet 87 gr/m² (79 ml/m²) - yield of 11,49 m²/kg (12,66 m²/L).
- Dry thickness 100 μm = wet 116 gr/m² (105 ml/m²) - yield of 8,63 m²/kg (9,52 m²/L).

For a correct application follow the indications in the technical sheets, application guides and safety data sheets. In case of doubt consult our technical service.

2.- OPTION C - FK-45 FoodGrade Hygienic

PRODUCT SUMMARY: FK-45 FoodGrade Hygienic is an Ultra-high solid food contact paint, mainly based on 2-component epoxy-novolac resin (alternative to epoxy-BPA), with certification for direct and indirect contact with food, according to the European Regulation EU 10/2011. High performance paint, low Voc, low odor, gloss finish, with CE marking tests and excellent physicochemical resistance in its category. Especially indicated for the protection and painting of surfaces in direct and indirect contact with food, beverages, water for food processing and drinking water.

Product treated (BPR Art 3 and 58) with BioFilmStop FG antimicrobial technology, specific FoodGrade version, highly effectiveness tested against bacteria and other pathogenic microorganisms such as coronavirus, and always according to EU 10/2011 and FDA 21 CFR 175.300 regulations. ISO 22196 and ISO 21702 effectiveness test (Escherichia coli, Listeria monocytogenes, Bacillus subtilis, Pseudomonas aureginosa, Staphylococcus aureus, Salmonella enteritidis, Legionella pneumophila, Coronavirus Feline). The paints and coatings of the Fakolith FoodGrade range contribute to the positive compliance with CE 852/2004, are manufactured under HACCP and Good Manufacturing Practices (GMP) according to CE 2023/2006 and/or FDA 21 CFR 174.5, improving the hygiene, food and health safety of surfaces and environments.

FIELDS OF USE: Following the technical instructions for each system, FK-45 FoodGrade Hygienic can be applied inside silos and tanks (>10,000 L.) and pipes, and given its high physical-chemical resistance, it is also highly recommended for indirect contact on walls, ceilings, skirting boards, floors, metal structures, machinery and equipment, cold and freezing rooms, food warehouses, panels, food transport, etc., always indoors. Especially in the food industry and healthcare sectors, hospitals and clinics, and also in industry, civil works and public and private buildings in general. Compatible with most mineral surfaces, concrete, sandblasted metals SA 2,5 Rz>50, metals properly primed, lacquered panels and on other paints and / or compatible primers well bonded and other surfaces resistant to cut-cross test Class 0-1 UNE-DIN EN ISO 2409:2007 and traction EN ISO 4624:2016 Rigid Systems: $\geq 1,0$ (0,7) b N/mm². (Without traffic loads) and: $\geq 2,0$ (1,5) b N/mm² (With traffic loads).

STANDARD COLORS: White RAL 9003, Light Ivory RAL 1015, Oxide Red RAL 3009 and Grey RAL 7004 (Please check availability, price and minimum required quantity for other colors from our FoodGrade chart or other RAL colors).

APPLICABLE with brush, roller, Airless or AirMix preferably heated.

With Declaration of Compliance, Performance and CE marking.

AVERAGE YIELD: according to recommended coat thickness, depending on use of FK-45 FoodGrade Hygienic

- Dry thickness 200 μm = wet 285 gr/m² (211 ml/m²) - yield 3,51 m²/kg (4,74 m²/L).
- Dry thickness 300 μm = wet 427 gr/m² (316 ml/m²)- yield of 2,34 m²/kg (3,16 m²/L).
- Dry thickness 350 μm = wet 497 gr/m² (368 ml/m²)- yield of 2,01 m²/kg (2,70 m²/L).
- Dry thickness 400 μm = wet 568 gr/m² (421ml/m²)- yield of 1,76 m²/kg (2,38 m²/L).
- Dry thickness 500 μm = wet 710 gr/m² (526 ml/m²)- yield of 1,41 m²/kg (1,90 m²/L).
- Dry thickness 700 μm = wet 995 gr/m² (737 ml/m²)- yield of 1,00 m²/kg (1,36 m²/L).

2.- OPTION D - FAKOPUR FoodGrade

PRODUCT SUMMARY: FAKOPUR FOODGRADE is a 2-component, solvent-based, high solids, aliphatic isocyanate acrylic polyurethane food contact paint, certified for direct, indirect and occasional contact with food, in accordance with EU Regulation 10/2011. High performance paint, resistant to outdoors, satin finish, with CE marking tests and excellent physicochemical resistance in its category. Particularly suitable for the protection and painting of surfaces in direct and indirect contact with food, beverages, water for food processing and drinking water.

Product treated (BPR Art 3 and 58) with BioFilmStop FG antimicrobial technology, specific version for food contact, with high effectiveness tested against bacteria and other pathogenic microorganisms such as coronavirus, and always in accordance with EU 10/2011 and FDA 21 CFR 175.300 regulations. Effectiveness test ISO 22196 and ISO 21702 (Escherichia coli, Listeria monocytogenes, Bacillus subtilis, Pseudomonas aureginosa, Staphylococcus aureus,

Salmonella enteritidis, Legionella pneumophila, Feline Coronavirus). The paints and coatings of Fakolith's foodgrade contribute to positively comply with EC regulation 852/2004, are manufactured under HACCP and Good Manufacturing Practices (GMP) according to EC 2023/2006 and/or FDA 21 CFR 174.5, improving hygiene and food and sanitary safety of surfaces and environments.

FIELDS OF USE: Following the technical indications for each system, it is mainly applied in outdoor situations of direct, indirect and occasional contact, in silos and tanks, ponds, culture pools, hoppers, troughs, floors, walls, equipment and tools, food warehouses, panels, food transport, objects, aquaculture... or indoors where a polyurethane is more convenient than an epoxy due to its properties. Especially for use in the food industry and primary sectors of agriculture, livestock and fisheries. Its excellent insulating qualities and vapor barrier effect, make it work as an excellent waterproofing on concrete, as a protective finish for metals in combination with anticorrosive primers compatible. FAKOPUR FoodGrade has in general good adhesion on various consistent bases and suitable roughness, concrete, mineral bases, properly primed metals, wood, compatible primers... Compatible with most consistent surfaces: Tensile strength EN ISO 4624:2016 Rigid Systems: ≥ 1.0 (0.7) b N/mm². (No traffic loads) and: $\geq 2,0$ (1,5) b N/mm² (With traffic loads), Surfaces with adequate roughness $R_z > 50$, both on mineral bases, as well as properly sandblasted (SA 2,5) or primed metals, Lacquered panels and compatible previous paints and/or primers, well adhered and resistant to the ISO 2409:2007- Class 0-1 grating shear test.

SERIAL COLORS: White RAL 9003, Red RAL 3009, Grey RAL 7004, (Consult availability, price and minimum quantity for other FoodGrade colors or other RAL colors).

APPLICABLE with brush, roller, Airless or Air-Mix preferably heated.

AVERAGE YIELD: according to recommended film thickness depending on the use of FAKOPUR FoodGrade.

-For a dry film thickness of 50 μm - 100 ml/m² are consumed - yielding 10 m²/l.

-For a thickness of 100 μm dry - 200 ml/m² are consumed - yielding 5 m²/l.

-For a dry thickness of 150 μm - 300 ml/m² are consumed - yielding 3.3 m²/l.

For a correct application follow the indications in the technical data sheets, application guides and safety data sheets. In case of doubt consult our technical service.

IMPORTANT NOTE:

This application guide is a general recommendation. On particular cases there may be additional recommendations or variations. Consult your doubts and recommended plan of subsequent maintenance with our Technical Department through the contact form of this web. If you want a Personalized Technical Prescription, [contact us](#) and send us the completed Check List of the Food-Health Industry available in the section "Application Guides".

APPLICATION GUIDES LEGAL ADVICE:

FAKOLITH CHEMICAL SYSTEMS, S.L.U. (FCS) applies a quality management system, and manufactures under HACCP for the food industry and health sectors, among others. Fakolith is certified by TÜV Rheinland Cert GmbH for ISO 9001: 2015 standard. FCS is a company of the FAKOLITH group in Spain, dedicated to developing, manufacturing, importing and commercializing paints and special industrial treatments. As our corporate purpose reflects, the legal responsibility for the application of the products is always out of our reach. FCS has a policy of R.C. of products with international coverage, except USA and Canada, of up to three million euros for damages caused by possible manufacturing defects.