CHEMFIT HYG-GARD 215W

Single Component Waterborne Modified Acrylic Resin Coating with Silver Ion Based Antimicrobial – For Surface Coating for Hygienic Areas Requiring Silver Ion Antimicrobial

PRODUCT DESCRIPTION

ChemFit HygGard 215W is a single component, waterborne modified acrylic resin coating incorporating advanced silver ion based antimicrobial technology. The silver ion technology provides a unique dual-action mechanism, allowing for the ultra-slow, controlled release of active ingredients into the coating film throughout its service life, even where harsh cleaning regimes are followed. This ready-to-use formulation is specifically designed as a surface coating for hygienic areas where microbial contamination is a critical concern.

The silver ion additive homogeneously distributed throughout the coating pro-actively prevents and disrupts the growth of bacteria on treated surfaces. Natural silver is renowned for its ability to protect against bacteria, making it an environmentally friendly alternative to chemically manufactured antimicrobials. The waterborne, low-VOC formulation provides a durable, easy-to-clean, and aesthetically pleasing finish that actively contributes to surface hygiene.

This product is proven to be effective against a broad spectrum of microorganisms, including **Staphylococcus aureus** (Gram-positive) and **Escherichia coli** (Gram-negative), as demonstrated by testing according to **ISO 22196:2011**, the international standard for measurement of antibacterial activity on plastic and other non-porous surfaces. It is ideal for use on walls and ceilings in environments requiring high standards of cleanliness.

PRIMARY APPICATIONS

ChemFit HygGard 215W is recommended for use in conditions such as:

- Surface coating for walls and ceilings in hygienic areas requiring silver ion antimicrobial technology
- Food processing facilities, commercial kitchens, and breweries
- Pharmaceutical manufacturing, laboratories, and cleanrooms
- Hospitals, healthcare facilities, clinics, and operating theaters
- Schools, daycare centers, and public buildings
- Wet areas, changing rooms, showers, and locker rooms
- Animal research facilities and veterinary clinics
- Clean manufacturing environments (electronics, medical devices)
- Facilities requiring environmentally friendly antimicrobial protection

KEY FEATURES AND BENEFITS

- **Single component** – Ready to use; no on-site mixing required
- **Waterborne** – Low VOC, environmentally friendly, low odor, easy clean-up
- **Silver ion based antimicrobial** – Proven to inhibit Staphylococcus aureus and E. coli (ISO 22196:2011) ; natural, environmentally friendly alternative to chemically manufactured antimicrobials
- **Dual-action mechanism** – Ultra-slow, controlled release of active ingredients throughout service life; remains active even when damaged or worn
- **Durable finish** – Good adhesion, scrub resistance, and washability; cross-linking acrylic micropolymer resin binder
- **Good resistance to cleaning regimes** – Withstands repeated cleaning with mild detergents and cleaning solutions
- **Breathable** – Allows moisture vapor transmission from the substrate, preventing blistering
- **Good opacity** – Excellent coverage and hiding power
- **Fast drying** – Quick recoat time for efficient project completion
- **Mildew resistant** – Resists fungal growth in humid conditions
- **Available in 5 L and 15 L containers** – Suitable for projects of all sizes

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Liquid
Color	White (tintable to a wide range of colors)
Finish	Mid-sheen / Soft sheen
Basis	Waterborne modified acrylic resin with silver ion antimicrobial
Type	Single component, ready to use
Antimicrobial agent	Silver ion based (e.g., silver ion-exchange material or silver nanoparticles)
Density	1.2 – 1.4 kg/L
Solids content (by volume)	32 – 38%
VOC content	< 30 g/L (Low VOC)
Touch dry (at 20°C/50% r.h.)	1 – 2 hours
Recoat time (at 20°C/50% r.h.)	2 – 4 hours
Full cure	7 days
Application temperature	+10°C to +35°C
Substrate temperature	+10°C to +35°C; must be ≥3°C above dew point
Relative humidity	Max. 80%

ANTIMICROBIAL PERFORMANCE

Property	Result
Test method	ISO 22196:2011 (Measurement of antibacterial activity on plastics and other non-porous surfaces)
Target microorganisms	Staphylococcus aureus (ATCC 6538P / 25923), Escherichia coli (ATCC 8739 / 25922)
Incubation conditions	24 hours at 35°C ± 1°C, ≥90% relative humidity
Antibacterial activity	≥ 99% reduction (≥ 99.9% for medical grade applications)

NOTE: The ISO 22196:2011 test method involves inoculation of the test surface with a bacterial suspension, covering with a sterile film, and incubation at 35°C for 24 hours at ≥90% relative humidity. Studies have demonstrated that antimicrobial coatings containing silver nanoparticles typically achieve ~ 4.5–5.7 $\log_{10}$ reductions in ISO 22196 assays. The antimicrobial additive works as an in-film preservative to protect the coating from colonization and degradation by bacteria, fungi, mould, yeast, and algae. The silver ion technology remains active for the lifetime of the coating, even when damaged or worn, unlike traditional surface treatments.

PACKAGING AND STORAGE

Packaging:

- 5 L container
- 15 L container

Storage:

- Store in original sealed containers at +5°C to +30°C
- Protect from direct sunlight, moisture, and freezing
- Store in dry conditions

Shelf life: 12 months from date of manufacture when stored properly

DOSAGE AND COVERAGE RATE

Application	Consumption (approx.)	Coverage per 5 L	Coverage per 15 L
Single coat (smooth, sealed surface)	0.10 – 0.12 L/m²	40 – 50 m²	120 – 150 m²
Single coat (porous or textured surface)	0.12 – 0.16 L/m²	30 – 40 m²	90 – 120 m²
Two coat system (recommended)	0.20 – 0.24 L/m² total	20 – 25 m²	60 – 75 m²

Coverage: Approximately 10 – 12 m² per litre per coat, depending on substrate porosity and surface profile.

Recommended system:

- For new or highly porous substrates: one primer coat + two top coats
- For sealed or previously coated substrates: two top coats

NOTE: Coverage is approximate; varies with substrate porosity, surface profile, and application method.

APPLICATION GUIDLINES

Surface Preparation:

- Substrate must be sound, clean, dry, and free from dust, oil, grease, laitance, curing compounds, mould, mildew, and any contaminants
- Remove all loose or deteriorated material; repair cracks and holes with suitable filler
- For glossy surfaces, abrade to achieve profile
- For previously painted surfaces, ensure good adhesion and compatibility
- On new plaster or concrete, allow to cure fully (minimum 28 days) and apply suitable primer/sealer
- For substrates contaminated by mould, algae, or mildew, pre-treat with suitable biocide wash and remove visible growth

Priming:

- For porous, chalky, or highly absorbent substrates, apply compatible acrylic primer/sealer
- For new drywall or plaster, use appropriate primer to seal and equalize absorption
- For wet rooms and humid areas, apply moisture sealer primer
- Allow primer to dry according to primer product data sheet before applying **ChemFit HygGard 215W**

Mixing:

- Stir thoroughly before use to ensure uniform consistency
- Do not thin or dilute; for spray application, dilution should not exceed 5% water if absolutely necessary
- Over-thinning reduces film thickness, durability, and antimicrobial effectiveness

Application:

- Apply by brush, short-nap roller, or airless spray
- For roll application, use short-nap synthetic roller (10-12 mm nap)
- Apply uniformly at specified consumption rate
- Maintain wet edge to avoid lap marks
- For best results, apply two coats; allow minimum 2-4 hours between coats at 20°C
- For spray application, follow manufacturer's guidelines; ensure proper ventilation

Curing:

- Protect from water, condensation, and mechanical damage for minimum 24 hours
- Light cleaning after 72 hours at 20°C
- Full cure (maximum film hardness and durability): 7 days
- Do not apply below +10°C or if relative humidity exceeds 80%
- Do not apply if substrate temperature is below dew point (+3°C margin)
- Do not apply if rain or heavy condensation is expected within 24 hours

HEALTH AND SAFETY

Waterborne acrylic coating may cause mild eye and skin irritation. If eye contact occurs, rinse immediately with plenty of water for 15-20 minutes and seek medical attention if irritation persists. For skin contact, wash immediately with soap and water. If swallowed, do not induce vomiting; rinse mouth and drink water, then seek medical advice. Use gloves, safety glasses, and protective clothing during handling. Ensure adequate ventilation when using in confined spaces. Refer to the Safety Data Sheet for detailed information.

CLEAING OF TOOLS

Clean all brushes, rollers, and equipment with warm soapy water immediately after use before coating dries. Dried material requires mechanical removal. Dispose of cleaning materials in accordance with local regulations.

LIMITATIONS

- For interior use only; not suitable for exterior exposure without UV-resistant top coat
- Do not apply on substrates with rising moisture or hydrostatic pressure
- Antimicrobial properties are surface-bound; effectiveness may be reduced if coating is abraded, damaged, or covered by dirt/film
- Regular cleaning is still required; antimicrobial coating is an adjunct to, not a replacement for, good hygiene practices
- Prolonged exposure to UV light may reduce antimicrobial effectiveness
- Do not use in direct food contact applications; for food processing areas, apply to walls and ceilings (not food contact surfaces)
- Not recommended for use in HVAC duct work

APPROVALS AND STANDARDS

ChemFit HygGard 215W complies with the following standards:

- **ISO 22196:2011** – Proven antibacterial activity against Staphylococcus aureus and Escherichia coli
- **EN 13300** – Water vapour permeability, wet scrub resistance classification
- **ISO 11998** – Wet scrub resistance testing
- **ISO 9001** – Quality management system certified
- **Low VOC** – LEED compliant for low-emitting materials; meets EU 2010 Directive (Cat A/a) 30 g/l limit
- **Silver ion technology** – Environmentally friendly, natural antimicrobial agent
- Single component, waterborne modified acrylic resin coating with silver ion based antimicrobial
- Suitable for surface coating for hygienic areas requiring silver ion antimicrobial

LEGAL NOTES

All technical data provided in this Product Data Sheet is based on laboratory testing under controlled conditions. Actual field performance may vary due to differences in substrates, application methods, site conditions, and environmental factors. ChemFit makes no warranty of merchantability or fitness for a particular purpose. Users shall conduct their own trials to validate product suitability for the intended application. ChemFit reserves the right to modify product specifications without prior notice. For the most current documentation, request the latest Product Data Sheet and Safety Data Sheet from ChemFit.

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