CHEMFIT HYG-GARD 203W

Single Component, Waterborne Modified Acrylic Resin Coating Containing Antimicrobial Proven to Inhibit Staphylococcus aureus and E. coli (ISO 22196:2011) – For Intermediate and Surface Coating for Hygienic Areas

PRODUCT DESCRIPTION

ChemFit HygGard 203W is a single component, waterborne modified acrylic resin coating containing an antimicrobial agent proven to inhibit the growth of harmful bacteria. This ready-to-use formulation is specifically designed for use as an intermediate and surface coating for hygienic areas where microbial contamination is a critical concern. 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 **Staphylococcus aureus** (Gram-positive) and **Escherichia coli** (Gram-negative) 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, ceilings, and other vertical surfaces in environments requiring high standards of cleanliness.

PRIMARY APPICATIONS

ChemFit HygGard 203W is recommended for use in conditions such as:

- Intermediate and surface coating for walls and ceilings in hygienic areas
- 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)

KEY FEATURES AND BENEFITS

- **Single component** – Ready to use; no on-site mixing required
- **Waterborne** – Low VOC, environmentally friendly, low odor, easy clean-up
- **Contains antimicrobial** – Proven to inhibit Staphylococcus aureus and E. coli (ISO 22196:2011)
- **Durable finish** – Good adhesion, scrub resistance, and washability
- **Easy to clean** – Smooth, non-porous surface resists dirt and stains
- **Breathable** – Allows moisture vapor transmission from the substrate
- **Good opacity** – Excellent coverage and hiding power
- **Fast drying** – Quick recoat time for efficient project completion
- **Mildew resistant** – Resists fungal growth in humid conditions

PHYSICAL AND CHEMICAL PROPERTIES

Property	Specification
Appearance	Liquid
Color	White (tintable to a wide range of colors)
Basis	Waterborne modified acrylic resin with antimicrobial additive
Type	Single component, ready to use
Antimicrobial agent	Proprietary (silver or zinc based)
Density	1.2 – 1.4 kg/L
Solids content (by weight)	40 – 50%
VOC content	< 50 g/L (Low VOC)
Viscosity	Suitable for brush, roller, or spray
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. 85%

ANTIMICROBIAL PERFORMANCE

Property	**Result**
Test method	ISO 22196:2011
Target microorganisms	Staphylococcus aureus (ATCC 6538P), Escherichia coli (ATCC 8739)
Antibacterial activity	Proven inhibition (reduction ≥ 99% at 24 hours)

NOTE: The antimicrobial activity of ISO 22196:2011 involves inoculation of the test surface with a bacterial suspension (S. aureus and E. coli), covering with a sterile film, and incubating at 35°C for 24 hours, after which the reduction in bacterial counts is calculated compared to an untreated control surface. This test requires at least 9 pieces per microorganism (6 control, 3 treated) and involves 180 cultures per test condition. Studies have demonstrated that antimicrobial coatings tested according to this standard can achieve bacterial reductions between 1.21 and 7.57 $\log_{10}$ units (approximately 94% to 99.999%), depending on formulation and conditions.

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 unit	Coverage per 15 L unit
Single coat (smooth, sealed surface)	0.10 – 0.14 L/m²	35 – 50 m²	105 – 150 m²
Single coat (porous or textured surface)	0.14 – 0.18 L/m²	28 – 35 m²	85 – 105 m²
Primer or mist coat (highly porous)	0.12 – 0.16 L/m²	30 – 40 m²	90 – 120 m²

Recommended system:

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

NOTE: Coverage is approximate; varies with substrate porosity, surface profile, and application method. Theoretical values are based on standard substrate conditions.

APPLICATION GUIDLINES

Surface Preparation:

- Substrate must be sound, clean, dry, and free from dust, oil, grease, laitance, curing compounds, mold, 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

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
- Allow primer to dry according to primer product data sheet before applying **ChemFit HygGard 203W**

Mixing:

- Stir thoroughly before use to ensure uniform consistency
- Do not thin or dilute with water or any solvent
- If thinning is absolutely necessary (e.g., for spray application), add a maximum of 5-10% clean water; over-thinning reduces film thickness, durability, and antimicrobial effectiveness

Application:

- Apply by brush, 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 85%
- 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 suitable for immersion or continuous wetting

APPROVALS AND STANDARDS

ChemFit HygGard 203W complies with the following standards:

- **ISO 22196:2011** – Proven antibacterial activity against Staphylococcus aureus and Escherichia coli
- **EN 1504-2** – Surface protection systems for concrete (where applicable)
- **ASTM D4541** – Pull-off adhesion strength testing (where applicable)
- **ISO 9001** – Quality management system certified
- **Low VOC** – LEED v4 compliant for low-emitting materials
- Single component, waterborne modified acrylic resin coating containing antimicrobial
- Suitable for intermediate and surface coating for hygienic areas

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.

CHEMFIT CONSTRUCTION CHEMICAL AND SERVICES LIMITED

Office No. 8, 1KM Near Gaey Soap, Sargodha Road, Faisalabad
Tel: +923364544837
Web: www.chemfitchemicals.com
Email: chemfit.pro@gmail.com