Optic Clear Solutions	**KleGuard® EMI Coating and Anti-Corrosion**	Catalog Listing KleGuard®
Drawn by: ST	**Revision:** F **Date:** 25 Sept 26	**Scale:** None
Tolerances: See Figure	**Approvals:**	**Sheet** 1 **of** 3
Optic Clear Solutions Coatings Division Weiser, Idaho 83672		

Product Overview

Product Name: *KleGuard®*
Type: Multi-functional Protective Coating
Functionality: EMI Protection and Anti-Corrosion
Key Component: Functionalized Graphene Nanoparticles

Product Description

KLeGuard® is a one-part, solvent-based functional coating formulated with uniformly dispersed, functionalized graphene particles. The graphene forms an interconnected network within the coating matrix to support electromagnetic interference (EMI) attenuation, coating integrity, adhesion, and surface durability.

The interaction between the functionalized graphene and the surrounding coating system provides a stable, homogeneous formulation that balances functional performance with ease of application. Once properly applied and cured, KLeGuard® creates a continuous protective layer intended to reduce electromagnetic interference and improve the shielding performance of coated components, surfaces, and enclosures.

KLeGuard® is designed for industrial, commercial, aerospace, marine, electronics, infrastructure, and defense-related applications where EMI management and reliable surface performance are required. Its one-part formulation simplifies preparation and application while avoiding complicated multi-component mixing procedures.

Actual shielding effectiveness and coating performance depend on factors including substrate material, surface preparation, dry-film thickness, coating continuity, curing conditions, operating frequency, enclosure design, and application method. Performance should be independently tested and validated using the applicable customer, industry, or military test standard for each intended application.

Key Benefits & Features — KLeGuard®

Feature	Description
EMI Shielding	Functionalized graphene forms an interconnected conductive network within the coating matrix to help attenuate electromagnetic interference across applicable frequency ranges.
Uniform Graphene Dispersion	Engineered dispersion promotes consistent graphene distribution throughout the one-part coating, supporting repeatable surface and shielding performance.
Durable Protective Barrier	Forms a continuous coating layer that helps protect the underlying substrate while maintaining functional performance in demanding environments.
Thermal and Chemical Stability	Designed to maintain coating integrity under elevated temperatures and exposure to specified chemicals, subject to application-specific validation.
Surface Compatibility	Suitable for properly prepared metals, composites, polymers, and other approved substrates. Adhesion and compatibility must be confirmed for each substrate and primer system.
One-Part Formulation	Ready-to-use, single-component system that eliminates multi-component mixing and simplifies preparation and application.
Flexible Application	Can be applied by compatible spray equipment, brush, or roller, depending on substrate geometry, required film thickness, and finish.
Extended Service Potential	A properly applied and maintained coating may help reduce EMI-related performance risks and maintenance requirements. Actual service life depends on operating and environmental conditions.

Applications

- Electronic and electrical enclosures
- Aerospace and defense systems
- Automotive and electric-vehicle components
- RF and communication equipment
- Telecom and data-center infrastructure
- Control cabinets and instrumentation housings
- Marine and industrial electronic systems
- Sensitive equipment requiring EMI-management support
- New construction, retrofit, and maintenance applications

Specification note: EMI shielding effectiveness depends on frequency, substrate, grounding, coating continuity, dry-film thickness, application method, and enclosure design. Performance must be verified under the applicable customer, industry, or military test standard.

Technical Specifications

Property	Value / Range	Test Method
Appearance	Brown	Fully cured
Graphene Content	8.34% wt.	Internal method
Corrosion Resistance	PASS	ASTM G85 Method A2
Flash Point	34°C	ASTM D93/EPA 1010
Attenuation	*Low Range* *Mid-Range* *High Range*	1MHz to 30MHz → 10dB 100 MHz to 999 Mhz → 15dB 1 GHz to 5 GHz → 15dB
VOC Content	352 g/L	ASTM D2369
Volatile Organic	Negative	EPA 8260D
Vapor Pressure	1.2 psi	ASTM D323
Bond & Peel	Minimum 500N/cm^2	Laboratory Testing
Impact	+ 100 lb/in	ASTM D2794
Shelf Life	6 months	—

Instructions for Use

- **Surface Preparation:** Ensure surface is clean, dry, and free from contaminants.
- **Application:** Apply via brush, spray, or dip-coating depending on system.
- **Handling or 2nd Coat:** Minimum 90 min. @ ambient temperature (70°F/ 21°C)
- **Curing Time:** 24 hours @ ambient temperature (70°F/ 21°C) – fully cured
- **Coverage:** Approximately 8-10 m²/L depending on surface porosity

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Storage & Handling

- Store in a cool, dry place below 30°C.
- Avoid direct sunlight and moisture exposure.
- Refer to SDS for safety and handling guidelines.