



TECHNICAL DATA BOOK

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TECHNICAL DATA

HMD

Heavy Duty Marine Degreaser

PRODUCT DESCRIPTION

Biodegradable, solvent-based, heavy-duty degreaser that easily cuts through, emulsifies and removes oil, grease and grime. Cleans and dissolves heavy soils on inboard & outboard motors, engine, machinery and dock equipment. Will not generate acid components.

RECOMMENDED USE

As a remover of grease, oil and sludge from engine parts, air tools, mechanical brakes, clutches, chains, wire ropes, motors, molds, parts, bearings, generators and compressors.

KEY FEATURES

- No Flash or Fire Point. Significantly reduces the risk of fire caused by incidental contact with live electrical equipment or solvents trapped by insulating materials.
- Fast Evaporation. Minimizes downtime associated with “clean-in-place” cleaning methods.
- No Class I or II Ozone Depleting Chemicals. Alternative to 1,1,1 Trichloroethane products while complying with the EPA regulations on the use of ozone depleting chemicals.

APPLICATION

Spray liberally and allow running off. Use extension tube for hard-to-reach areas. Allow equipment to fully dry and vent before using. Using a dry, absorbent cloth can accelerate drying time. Do not use on plastics such as acrylic, ABS and polycarbonate. If uncertain, check with the manufacturer or test on a small area before using. Not for use on sensitive electronics, computers, tape decks or VCRs. For personal safety, do not use while equipment is energized.

AVAILABLE PACKAGING

5L & 20L canisters, 200L metal barrels

HEC

Heavy Duty Electric Cleaner

PRODUCT DESCRIPTION

High performance cleaner for electric components that suffer from dirt built-up. It can dislodge foreign elements and clean components. Prevents electric contact failure. It does leave no residues. Quick-drying formulation. Use on any exposed sensitive electronic components and contacts (engine controls, data sensors and wiring).

RECOMMENDED USE

As an electrical contact and parts cleaner to remove grease, dirt, oil, flux and other surface contaminants from sensitive electrical/electronic devices. Applicable to clean motorized instruments, control panels, electrically driven parts, motors, and other electronic devices requiring a fast acting, low residue degreasing agents. Recommended for switches, ac or dc contacts, relays, PC boards, electrical motors and sensors.

KEY FEATURES

- Fast Evaporation. Minimizes downtime associated with “clean-in-place” cleaning methods.
- No Class I or II Ozone Depleting Chemicals. Alternative to 1,1,1 Trichloroethane products while complying with the EPA regulations on the use of ozone depleting chemicals.

APPLICATION

Spray liberally and allow running off. Do not apply to active equipment or where there is a residual electrical potential from a component such as a capacitor. Spray surface to be cleaned using 15 second bursts. For stubborn residues, repeat application. For difficult applications, swabs or lint free cloths may be used. Allow to dry completely before re-activating system.

AVAILABLE PACKAGING

5L & 20L canisters, 200L metal barrels

TECHNICAL DATA

HPS

Penetrating Oil

PRODUCT DESCRIPTION

HPS Penetrating Oil is designed to pierce inside metal threads and free rusted or frozen parts. Additionally, this heavy-duty formulation provides corrosion resistance and lubrication for a long period of time.

RECOMMENDED USE

As a lubricating, penetrating and cleaning formula for metal parts like nuts, bolts, locks, hinges, screws, clamps, shafts, pulleys, scales and more.

KEY FEATURES

- **Penetrates:** Wicks through tight spaces and loosens frozen, seized, and rusted parts.
- **Lubricates:** Minimizes friction and wear with a low viscosity and long lasting oil blend.
- **Protects:** Prevents rust with corrosion inhibitors, and provides a preservative film.
- **Displaces Moisture:** Repels water due to its high hydrophobicity.
- **Reduces friction and wear** leading to greater machine efficiency.
- **Removes** tar, sap, oils, greases, adhesives, label residues and more.

APPLICATION

Spray liberally and allow running off. To prevent injury hazards, do not apply to engaged or operating equipment. For stubborn residues, repeat application. For difficult applications, swabs or lint free cloths may be used. Allow drying completely before re-engaging a mechanical system.

AVAILABLE PACKAGING

5L & 20L canisters, 200L metal barrels

HBG

Bilge Cleaner

PRODUCT DESCRIPTION

HBG Bilge Cleaner formulation is a biodegradable, heavy-duty bilge cleaner. It disperses sludge and grime in the bilge so it can be pumped out (follow local disposal guidelines and legislation). It effectively emulsifies fuel or grease residues. Leaves bilge clean and odor-free. It contains no phosphates and has a refreshing odor.

RECOMMENDED USE

As a bilge cleaner. Effective wherever slime and oily contaminants are accumulating. To facilitate fuel dispersion and prevent oil spilling.

KEY FEATURES

- Biodegradable & non-toxic.
- Multi-purpose: Tanks, bilges, engine rooms.
- Sanitizes while cleaning and emulsifying.
- Non-corrosive to metal surfaces or engine parts.

APPLICATION

Apply on surface, let stand for 5 minutes (longer dwell time for heavy build up and stains), agitate with a brush or cloth if needed, and rinse with fresh or seawater.

Enclosed bilges and tanks: Apply 2-10L for each cubic meter of enclosed bilge or tank, let stand for 24 hours, drain and rinse tank. Engine vibrations reduce the let stand time interval.

In case of gasoline or diesel was put into the water system follow enclosed tank directions with a triple rinse. Apply proper disposal directions of the emulsified yield.

AVAILABLE PACKAGING

4L & 30L canisters, 200L plastic barrels

ARC

Acidic Rust & Deposits Cleaner

PRODUCT DESCRIPTION

ARC is an acidic, hydrochloric/phosphoric acid free, heavy-duty rust, salt deposits and iron scales cleaner. Its low toxicity and ecotoxicity make it suitable for use in marine environment. ARC efficiently removes rust from surfaces to prepare them for modification (e.g. priming -painting). It contains flash rust inhibitors to protect early corrosion effects.

RECOMMENDED USE

As general use rust, hard-water deposits and iron scales cleaner from metal surfaces. Applicable for stainless steel boilers, heat exchangers and piping cleaning or descaling.

KEY FEATURES

- 100% Biodegradable, non-toxic, zero VOC, non-flammable and water based.
- Fast reaction for rust removal.
- Contains no phosphoric, phosphates, hydrochloric or chloride ingredients.
- Multi-purpose: From metal surfaces to stainless steel boilers, heat exchangers or pipes.
- Qualified even in Food and Beverage applications as a phosphoric acid substitute.

APPLICATION

Apply on surface, let stand for 5 minutes (longer dwell time for heavy build up), agitate with a brush or cloth if needed, and rinse with fresh water. Once rust or deposits have been removed, it is important to treat metal with protective coating(s).

Stainless steel, boilers and heat exchangers: Dilute up to 1:9 v/v with fresh water. Recirculate cleaner for 30min before disposing properly. Apply triple rinse with fresh water.

AVAILABLE PACKAGING

4L & 30L canisters, 200L plastic barrels

WRS

Water Repelling Shine Protection

PRODUCT DESCRIPTION

WRS is a nano-engineered product to preserve the shine of polished and wax treated yachting hulls. It prevents the adhesion of salt deposits by repelling seawater. Thus, the deteriorating action of salts is eliminated and the shiny appearance of a hull is preserved for long.

RECOMMENDED USE

As a shine protection formula for gel-coated, fiberglass or plastic surfaces.

KEY FEATURES

- Long-lasting shine of white or even dark-shaded surfaces.
- Leaves no residues.
- Water repelling action prevents accumulation of water droplets and sea-salt deposits.
- Nanotechnology driven formula provides protection against the sun's harmful rays by diffusing Ultra-Violet (UV) radiation that causes fading, drying and cracking.

APPLICATION

Apply evenly with a soft cloth to avoid streaking. Wipe off excess to avoid splatter on painted surfaces and non-painted plastic panels.

AVAILABLE PACKAGING

4L & 30L canisters

TECHNICAL DATA

PTC

Polyurethane Top Coating

PRODUCT DESCRIPTION

A high-gloss protective, film-forming coating for the application on bare metal or inox surfaces. Prevents the accumulation of salt deposits and makes it easier to clean. Does not yellow or flake, even after prolonged exposure to UV and marine environment. Can be applied on wooden surfaces as well, with reduced abrasion resistance.

RECOMMENDED USE

As a permanent, glossy finish coat for most severe marine or industrial exposure. Protects by preventing salt accumulation. Anti-corrosive barrier.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	50	100	75
Wet Film Thickness (µm)	100	300	150
Coverage Rate (m ² /L)	7	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Acrylic aliphatic PU	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Base A & Hardener B	DRY THROUGH TIME ▶	1h @ 20°C
COLOR ▶	Transparent	FULL CURING ▶	24h
THINNER ▶	NanoPhos Thinner C	MIN. RECOAT INTERVAL ▶	6h @ 20°C
MIXING RATIO ▶	4:1 A:B per volume	VOC ▶	<450 g/L
SOLIDS (%wt.) ▶	53±3	FLASH POINT ▶	20°C
SOLIDS (%vol.) ▶	40±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous. If necessary, add up to 10% by volume NanoPhos Thinner C to thin for spray application. Maximum pot life: 6-8h 20°C.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .018 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

PTC Polyurethane Top Coating

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

- 5L unit (4L Base A in a 5L container and 1L Hardener B in 1L canister)
- 20L unit (16L Base A in a 20L container and 4L Hardener B in 5L canister)

TECHNICAL DATA

HDO

Deck Oil

PRODUCT DESCRIPTION

Unlike conventional teak oil, HDO is a penetrating protecting formulation, ideal for marine hardwood surfaces, like decks. The deep penetrating formula feeds wood, restoring the natural oils lost through weathering. It penetrates the wood leaving a natural looking finish and the deck both nourished and protected. Scuff resistant formula. HDO prevents water ingress and reduces “silvering” due to UV action.

RECOMMENDED USE

As a deep penetrating, wood protecting formulation.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	40	100	50
Wet Film Thickness (µm)	80	200	100
Coverage Rate (m ² /L)	10	4	7

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Alkyd/Oil	TOUCH DRY TIME ▶	1h @ 20°C
COMPONENTS ▶	Single	DRY THROUGH TIME ▶	2h @ 20°C
COLOR ▶	Transparent	FULL CURING ▶	24h
THINNER ▶	NanoPhos Thinner B	MIN. RECOAT INTERVAL ▶	7h @ 20oC
MIXING RATIO ▶	Single Component	VOC ▶	<250 g/L
SOLIDS (%wt.) ▶	22±3	FLASH POINT ▶	45°C
SOLIDS (%vol.) ▶	24±3	WATER RESISTANCE ▶	Very Good
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Very Good

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: No priming required.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous. If necessary, add up to 10% by volume NanoPhos Thinner B to thin for spray application.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
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AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .018 to .01 orifices.
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BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.
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Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

HDO Deck Oil

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

1L, 5L and 20L metal canisters

TECHNICAL DATA

EZR

Epoxy NanoZinc Rich Primer

PRODUCT DESCRIPTION

A two component, zinc rich, epoxy primer. High levels of Zinc Dust & adhesion of Epoxy Polyamide binder results in excellent cathodic protection against rust and undercutting. Contains approximately 90% wt. Zinc Dust in the dry film. Nanostructured zinc particles exhibit high surface area to promote cathodic protection. Ideal primer in combination with advanced coating systems for below or above the waterline protection.

RECOMMENDED USE

As a zinc rich primer of blast cleaned steel. Chemical, power & water treatment plants, refineries, bridges, barges, ships, drilling rigs & paper mills.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	50	100	75
Wet Film Thickness (µm)	100	200	150
Coverage Rate (m ² /L)	7	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Epoxy Polyamide	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Base A & Hardener B	DRY THROUGH TIME ▶	8h @ 20°C
COLOR ▶	Grey	FULL CURING ▶	10d
THINNER ▶	NanoPhos Thinner A	MIN. RECOAT INTERVAL ▶	6h @ 20°C
MIXING RATIO ▶	4:1 A:B per volume	VOC ▶	<340 g/L
SOLIDS (%wt.) ▶	83±3	FLASH POINT ▶	10°C
SOLIDS (%vol.) ▶	44±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint and other foreign matters or contamination.

Immersed Bare Steel: White Metal Blasting (Sa 3, SSPC-SP5, NACE No 1)

Non-Immersed Bare Steel: Near White Metal Blasting (Sa 2.5, SSPC-SP10, NACE No2).

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

While mixing the Base A, add the Hardener B and mix until homogenous. If necessary, add up to 12% by volume NanoPhos Thinner A to thin for spray application. Maximum pot life: 6-8h 20°C.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .017 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- **EZR Epoxy NanoZinc Rich Primer**
- ETC Epoxy Tie Coat
- SeaKing Antifouling or SeaQueen Antifouling

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

- 5L unit (4L Base A in a 5L container and 1L Hardener B in 1L canister)
- 20L unit (16L Base A in a 20L container and 4L Hardener B in 5L canister)

TECHNICAL DATA

ETC

Epoxy Tie Coat

PRODUCT DESCRIPTION

A two component, tar free, epoxy tie coat. For use as a tie coat between anti-corrosive EZR primer and epoxy antifouling top coatings to ensure maximum system adhesion and performance.

RECOMMENDED USE

As a tie coat between primer and anti-fouling paints or sealer on blast cleaned steel. Recommended also for refineries, bridges, barges, ships, drilling rigs & paper mills.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	30	80	40
Wet Film Thickness (µm)	60	160	80
Coverage Rate (m ² /L)	15	5	10

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Epoxy Polyamide	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Base A & Hardener B	DRY THROUGH TIME ▶	8h @ 20°C
COLOR ▶	Reddish Brown	FULL CURING ▶	10d
THINNER ▶	NanoPhos Thinner A	MIN. RECOAT INTERVAL ▶	6h @ 20°C
MIXING RATIO ▶	4:1 A:B per volume	VOC ▶	<340 g/L
SOLIDS (%wt.) ▶	83±3	FLASH POINT ▶	10°C
SOLIDS (%vol.) ▶	44±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

While mixing the Base A, add the Hardener B and mix until homogenous. If necessary, add up to 12% by volume NanoPhos Thinner A to thin for spray application. Maximum pot life: 6-8h 20°C.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
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AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .017 to .01 orifices.
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BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.
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Substrate temperature should be minimum 7°C and at least 3°C above air dew point.

Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- EZR Epoxy NanoZinc Rich Primer
- **ETC Epoxy Tie Coat**
- SeaKing Antifouling or SeaQueen Antifouling

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

5L unit (4L Base A in a 5L container and 1L Hardener B in 1L canister)

20L unit (16L Base A in a 20L container and 4L Hardener B in 5L canister)

TECHNICAL DATA

SeaKing Antifouling

PRODUCT DESCRIPTION

The ultimate epoxy antifouling coating. Low friction, superior anti-fouling and long-lasting (60M) nanotechnology driven coating. Contains no tin (IV) or copper (I) compounds. Based on PolyDiMethylSiloxane modified epoxies, as the latest advance in marine coatings. Apart to their amphiphilic behavior and enhanced durability, they are coupled with glycol units to finely tune surface tension values that repel proteins or microorganism biological anchors. Saves fuel costs by reducing drag coefficient.

RECOMMENDED USE

As a biocide-free, Tin(IV)-free and Copper(I) free antifouling coating for maintenance & repair or new-built vessels.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	50	100	75
Wet Film Thickness (µm)	100	200	150
Coverage Rate (m ² /L)	7	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Silicone modified Epoxy Polyamide	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Base A & Hardener B	DRY THROUGH TIME ▶	8h @ 20°C
COLOR ▶	Reddish Brown, Black, Blue	FULL CURING ▶	10d
THINNER ▶	NanoPhos Thinner A	MIN. RECOAT INTERVAL ▶	6h @ 20°C
MIXING RATIO ▶	4:1 A:B per volume	VOC ▶	<340 g/L
SOLIDS (%wt.) ▶	83±3	FLASH POINT ▶	10°C
SOLIDS (%vol.) ▶	44±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

While mixing the Base A, add the Hardener B and mix until homogenous. If necessary, add up to 12% by volume NanoPhos Thinner A to thin for spray application. Maximum pot life: 6-8h 20°C.

APPLICATION

CONVENTIONAL SPRAYING ▶ Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.

AIRLESS SPRAYING ▶ Graco 30:1 pump, spray gun with .017 to .01 orifices.

BRUSH ▶ Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point.

Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- EZR Epoxy NanoZinc Rich Primer
- ETC Epoxy Tie Coat
- **SeaKing Antifouling** or SeaQueen Antifouling

HEALTH AND SAFETY

(A) Use normal precautions such as gloves, facemasks.

(B) Adequate ventilation must be maintained.

(C) Explosion proof lights & electrical equipment.

(D) Non-Sparking shoes & tools for workers in area.

(E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.

(F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

5L unit (4L Base A in a 5L container and 1L Hardener B in 1L canister)

20L unit (16L Base A in a 20L container and 4L Hardener B in 5L canister)

TECHNICAL DATA

SeaQueen Antifouling

PRODUCT DESCRIPTION

Vinyl based, tin (IV) free and cuprous oxide free antifouling top coat. Nano-engineered formulation for long-term antifouling performance (36M). Conforming to the strictest IMO regulations, SeaQueen prevents biological growth regardless marine environment, temperature or salinity. Ideal for both stationary and slow-/fast-moving vessels. Protects for approximately 30-36 months when two coats (75micron DFT each) of the antifouling coating are applied. Recommended for use on barges, ships and drilling vessels. Suitable for steel, wood and fiber glass substrates.

RECOMMENDED USE

As a high-performance antifouling coating for refurbishment or new-built vessels.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	50	100	75
Wet Film Thickness (µm)	100	200	150
Coverage Rate (m ² /L)	7	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Vinyl	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Single	DRY THROUGH TIME ▶	6h @ 20°C
COLOR ▶	Reddish Brown, Black, Blue	FULL CURING ▶	8d
THINNER ▶	NanoPhos Thinner B	MIN. RECOAT INTERVAL ▶	4h @ 20°C
MIXING RATIO ▶	Single Component	VOC ▶	<450 g/L
SOLIDS (%wt.) ▶	57±3	FLASH POINT ▶	22°C
SOLIDS (%vol.) ▶	46±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Very Good

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Antifouling paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous. If necessary, add up to 10% by volume NanoPhos Thinner B to thin for spray application.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .018 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- EZR Epoxy NanoZinc Rich Primer
- ETC Epoxy Tie Coat
- SeaKing Antifouling or **SeaQueen Antifouling**

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

5L & 20L metal canisters

TECHNICAL DATA

SeaPrince

Transparent Antifouling

PRODUCT DESCRIPTION

Transparent, glossy epoxy antifouling. Low friction, superior anti-fouling and long-lasting (60M) nanotechnology driven coating. Contains no tin (IV) or copper (I) compounds. Ideal for fast moving vessels like yachts, sailing or rib boats. Improves speed performance and saves fuel by reducing drag.

RECOMMENDED USE

As a biocide-free, antifouling coating for refurbishment or new-built fast moving or performance yachting vessels.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	50	100	75
Wet Film Thickness (µm)	100	200	150
Coverage Rate (m ² /L)	7	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Epoxy Polyamide	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Base A & Hardener B	DRY THROUGH TIME ▶	8h @ 20°C
COLOR ▶	Transparent	FULL CURING ▶	10d
THINNER ▶	NanoPhos Thinner A	MIN. RECOAT INTERVAL ▶	6h @ 20°C
MIXING RATIO ▶	4:1 A:B per volume	VOC ▶	<340 g/L
SOLIDS (%wt.) ▶	83±3	FLASH POINT ▶	10°C
SOLIDS (%vol.) ▶	44±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

While mixing the Base A, add the Hardener B and mix until homogenous. If necessary, add up to 12% by volume NanoPhos Thinner A to thin for spray application. Maximum pot life: 6-8h 20°C.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .017 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- No priming on fiber glass or rib boats
- **Transparent SeaPrince Antifouling**

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

- 5L unit (4L Base A in a 5L container and 1L Hardener B in 1L canister)
- 20L unit (16L Base A in a 20L container and 4L Hardener B in 5L canister)

SeaHermes

Transparent Racing Antifouling

PRODUCT DESCRIPTION

Super-hydrophilic, transparent coating, based on titanium dioxide nanoparticles. It creates a short living (6M) but extremely low surface tension coating to reduce boundary effect and boost speed performance. Apart from surface tension, nanoparticles shape a unique micro-roughness to reduce friction or drag coefficient. Ideal for application on fiberglass gel-coat whenever a split of a second makes a difference.

RECOMMENDED USE

As a transparent, super-hydrophilic, drag reducing coating and easy foul-release coating.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	250	800	400
Wet Film Thickness (µm)	12.5	40	20
Coverage Rate (m ² /L)	80	25	50

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Water Based	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Single	DRY THROUGH TIME ▶	2h @ 20°C
COLOR ▶	Transparent	FULL CURING ▶	2d
THINNER ▶	Water	MIN. RECOAT INTERVAL ▶	1h @ 20°C
MIXING RATIO ▶	Single Component	VOC ▶	<140 g/L
SOLIDS (%wt.) ▶	10±3	FLASH POINT ▶	41°C
SOLIDS (%vol.) ▶	7±3	WATER RESISTANCE ▶	Good
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Average

SURFACE PREPARATION

All fiberglass gel-coated surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous.

APPLICATION

CONVENTIONAL SPRAYING ▶ HVLP spraying with Graco Husky 307 or 515 diaphragm pump with Acetal parts. Accuspray series 55ZZ Delrin gun. Delrin needle assembly and 0.034-0.072" Delrin fluid nozzle with suitable Delrin air cap. 6mm (¼ inch) I.D. fluid line with recirculating system should be used to minimize pigment settling.

AIRLESS SPRAYING ▶ Not a recommended application method.

BRUSH ▶ Not a recommended application method.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- No priming on fiber glass or rib boats
- **SeaHermes Transparent Racing**

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

4L & 30L plastic canisters

TECHNICAL DATA

ACQ

AntiCorrosive Quick Dry

PRODUCT DESCRIPTION

Single component corrosion inhibitive, high quality primer for steel exposed to a marine or industrial corrosive environment. Quick drying, easily applied, without dust creating. It presents excellent adhesion, flexibility and high anti-corrosive protection due to its special anticorrosive pigments of zinc phosphate and zinc oxide. It contains no lead compounds. Non-toxic, highly weathering resistant. Excellent for priming storage tanks, industrial plants, machinery, and other metal subjected to heavy industrial use and exterior exposure.

RECOMMENDED USE

As a corrosion inhibitive high quality Primer for steel exposed to marine corrosive environment. Use over alkyds to upgrade system. Excellent for priming storage tanks, industrial plants, machinery, and other metal subjected to heavy industrial use and to exterior exposure.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	40	100	50
Wet Film Thickness (µm)	80	200	100
Coverage Rate (m ² /L)	10	4	7

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Alkyd modified	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Single	DRY THROUGH TIME ▶	2h @ 20°C
COLOR ▶	Reddish Brown	FULL CURING ▶	24h
THINNER ▶	NanoPhos Thinner B	MIN. RECOAT INTERVAL ▶	7h @ 20°C
MIXING RATIO ▶	Single Component	VOC ▶	<450 g/L
SOLIDS (%wt.) ▶	67±3	FLASH POINT ▶	10°C
SOLIDS (%vol.) ▶	43±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Good

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Anticorrosive paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .018 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- **ACQ AntiCorrosive Quick Dry**
- ENM Enamel or ASD AntiSlip Deck Coating

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

5L & 20L metal canisters

TECHNICAL DATA

ENM Enamel

PRODUCT DESCRIPTION

ENM Enamel is a gloss alkyd finish coating possessing excellent color stability and gloss retention for interior and exterior applications. Ideal for outside hull, exterior application. Engineered for application over alkyd primers. ENM offers long-lasting performance and anticorrosion protection. Optimized rheology makes it easy to apply on vertical surfaces, even in presence of high moisture levels. Excellent adhesion to most conventional top-coatings. White color option is an excellent cool paint for thermal insulation, through heat (infrared) reflection.

RECOMMENDED USE

As a finish coat for bootop, topside, deck and deck equipment. A quick drying, hard, water resistant coating. Can be applied over intact existing conventional systems and over suitable primers. Good adhesion properties in wet and dry exposure conditions.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	40	100	50
Wet Film Thickness (µm)	80	200	100
Coverage Rate (m ² /L)	10	4	7

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Alkyd modified	TOUCH DRY TIME ▶	1h @ 20°C
COMPONENTS ▶	Single	DRY THROUGH TIME ▶	2h @ 20°C
COLOR ▶	Grey, Reddish Brown, Black, White, Blue	FULL CURING ▶	24h
THINNER ▶	NanoPhos Thinner B	MIN. RECOAT INTERVAL ▶	7h @ 20°C
MIXING RATIO ▶	Single Component	VOC ▶	<450 g/L
SOLIDS (%wt.) ▶	67±3	FLASH POINT ▶	20°C
SOLIDS (%vol.) ▶	43±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous. If necessary, add up to 10% by volume NanoPhos Thinner B to thin for spray application.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
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AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .018 to .01 orifices.
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BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.
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Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- ACQ AntiCorrosive Quick Dry
- **ENM Enamel** or ASD AntiSlip Deck Coating

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

5L & 20L metal canisters

TECHNICAL DATA

ASD

AntiSlip Deck Coating

PRODUCT DESCRIPTION

Slip resistant, single component deck coating. Exhibits high wearing resistance and near zero gloss. Fast drying and low-dirt pickup. Does not yellow or flake, even in harsh weathering conditions. Protects against corrosion. Applicable in adverse environmental conditions.

RECOMMENDED USE

As an abrasion resistant, anticorrosive, anti-slip coating.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	40	100	75
Wet Film Thickness (µm)	80	200	150
Coverage Rate (m ² /L)	10	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Alkyd modified	TOUCH DRY TIME ▶	1h @ 20°C
COMPONENTS ▶	Single	DRY THROUGH TIME ▶	2h @ 20°C
COLOR ▶	White, Blue, Reddish Brown, Yellow, Green	FULL CURING ▶	24h
THINNER ▶	NanoPhos Thinner B	MIN. RECOAT INTERVAL ▶	7h @ 20°C
MIXING RATIO ▶	Single Component	VOC ▶	<450 g/L
SOLIDS (%wt.) ▶	67±3	FLASH POINT ▶	20°C
SOLIDS (%vol.) ▶	43±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Deck coating paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous. If necessary, add up to 10% by volume NanoPhos Thinner B to thin for spray application.

APPLICATION

CONVENTIONAL SPRAYING ▶ Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.

AIRLESS SPRAYING ▶ Graco 30:1 pump, spray gun with .018 to .01 orifices.

BRUSH ▶ Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point.

Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- ACQ AntiCorrosive Quick Dry
- ENM Enamel or **ASD AntiSlip Deck Coating**

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

5L & 20L metal canisters

TECHNICAL DATA

MTI

Metal Thermal Insulating

PRODUCT DESCRIPTION

MTI is a solvent-based paint that can be directly applied on metal surfaces for thermal insulation and corrosion prevention. Ideal for engine rooms, heat exchangers and pipes to reduce heat losses and improve energy efficiency. Additionally, it makes hot surfaces safer by reducing their temperature. Resistant up to 250°C substrate temperature. MTI provides significant reduction in thermal conductivity and high reflectance of thermal radiation (infrared).

RECOMMENDED USE

As a thermal insulating coating to prevent heat losses from heat exchangers and pipes and increase the overall energy efficiency.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	100	200	150
Wet Film Thickness (µm)	200	400	300
Coverage Rate (m ² /L)	8	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Acrylic modified	TOUCH DRY TIME ▶	1h @ 20°C
COMPONENTS ▶	Single	DRY THROUGH TIME ▶	2h @ 20°C
COLOR ▶	White, Reddish Brown, Green	FULL CURING ▶	24h
THINNER ▶	NanoPhos Thinner B	MIN. RECOAT INTERVAL ▶	7h @ 20°C
MIXING RATIO ▶	Single Component	VOC ▶	<450 g/L
SOLIDS (%wt.) ▶	47±3	FLASH POINT ▶	20°C
SOLIDS (%vol.) ▶	63±3	WATER RESISTANCE ▶	Good
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Good

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous. If necessary, add up to 10% by volume NanoPhos Thinner B to thin for spray application.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .018 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- ACQ AntiCorrosive Quick Dry
- **MTI Metal Thermal Insulating**

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

5L & 20L metal canisters

TECHNICAL DATA

EMS Electromagnetic Shielding and Electrostatic Discharge Prevention Conductive Paint

PRODUCT DESCRIPTION

EMS is a conductive paint, ideal for EMI/RFI shielding and electrostatic discharge (ESD) prevention. Conductive paint is sprayed onto the surface using an air atomizer or airless spray equipment. Conductivity achieved by multi-wall carbon nanotubes (MWCNTs) to ensure a wide range of RF covered.

RECOMMENDED USE

As electromagnetic shielding coating and safety for electrostatic discharge prevention.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	40	60	50
Wet Film Thickness (µm)	120	180	150
Coverage Rate (m ² /L)	9	5	7

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Acrylic modified	TOUCH DRY TIME ▶	1h @ 20°C
COMPONENTS ▶	Single	DRY THROUGH TIME ▶	2h @ 20°C
COLOR ▶	Grey, Black	FULL CURING ▶	24h
THINNER ▶	NanoPhos Thinner B	MIN. RECOAT INTERVAL ▶	7h @ 20°C
MIXING RATIO ▶	Single Component	VOC ▶	<450 g/L
SOLIDS (%wt.) ▶	65±3	FLASH POINT ▶	20°C
SOLIDS (%vol.) ▶	45±3	WATER RESISTANCE ▶	Good
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Good

EMS Electromagnetic Shielding and Electrostatic Discharge Prevention Conductive Paint

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous. If necessary, add up to 10% by volume NanoPhos Thinner B to thin for spray application.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .018 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- ACQ AntiCorrosive Quick Dry
- **EMS Electromagnetic Shielding and Electrostatic Discharge Prevention Conductive Paint**

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

5L & 20L metal canisters

TECHNICAL DATA

EPR

Epoxy Primer

PRODUCT DESCRIPTION

Two component, metal epoxy primer. Durable primer for the application in non-immersed metal surfaces. It contains anti-corrosive pigments. Ideal for cargo holds and off-shore platforms. Eco-friendly formulation. Ideally combined with EEN Epoxy Enamel.

RECOMMENDED USE

As an excellent, quick drying primer for non-immersed metal surfaces. Ideal for metal surfaces exposed to marine environment, shipyard and chemical processing industries.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	50	100	75
Wet Film Thickness (µm)	100	200	150
Coverage Rate (m ² /L)	7	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Epoxy Polyamide	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Base A & Hardener B	DRY THROUGH TIME ▶	8h @ 20°C
COLOR ▶	Reddish Brown	FULL CURING ▶	10d
THINNER ▶	NanoPhos Thinner A	MIN. RECOAT INTERVAL ▶	6h @ 20°C
MIXING RATIO ▶	4:1 A:B per volume	VOC ▶	<340 g/L
SOLIDS (%wt.) ▶	83±3	FLASH POINT ▶	10°C
SOLIDS (%vol.) ▶	44±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint and other foreign matters or contamination.

Non-Immersed Bare Steel: Near White Metal Blasting (Sa 2.5, SSPC-SP10, NACE No2).

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

While mixing the Base A, add the Hardener B and mix until homogenous. If necessary, add up to 12% by volume NanoPhos Thinner A to thin for spray application. Maximum pot life: 6-8h 20°C.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .017 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- EPR Epoxy Primer
- EEN Epoxy Enamel or FGE Food Grade Epoxy

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

- 5L unit (4L Base A in a 5L container and 1L Hardener B in 1L canister)
- 20L unit (16L Base A in a 20L container and 4L Hardener B in 5L canister)

TECHNICAL DATA

EEN

Epoxy Enamel

PRODUCT DESCRIPTION

EEN Epoxy Enamel is ideal for the marine corrosive environment, especially where high-chemical resistance is required. It results in a glossy finish. Ideal for offshore platforms or vessel holds. Easily applicable on vertical and horizontal surfaces.

RECOMMENDED USE

As a finish coat for topside and holds compartment. A quick drying, hard, chemical resistant coating. Can be applied over intact existing conventional systems and over suitable primers. Good adhesion properties in wet and dry exposure conditions.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	50	100	75
Wet Film Thickness (µm)	100	200	150
Coverage Rate (m ² /L)	7	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Epoxy Polyamide	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Base A & Hardener B	DRY THROUGH TIME ▶	8h @ 20°C
COLOR ▶	Grey, Reddish Brown, Black, White, Blue, Green	FULL CURING ▶	10d
THINNER ▶	NanoPhos Thinner A	MIN. RECOAT INTERVAL ▶	6h @ 20°C
MIXING RATIO ▶	4:1 A:B per volume	VOC ▶	<340 g/L
SOLIDS (%wt.) ▶	83±3	FLASH POINT ▶	10°C
SOLIDS (%vol.) ▶	44±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

While mixing the Base A, add the Hardener B and mix until homogenous. If necessary, add up to 12% by volume NanoPhos Thinner A to thin for spray application. Maximum pot life: 6-8h 20°C.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .017 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- EPR Epoxy Primer
- **EEN Epoxy Enamel**

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

- 5L unit (4L Base A in a 5L container and 1L Hardener B in 1L canister)
- 20L unit (16L Base A in a 20L container and 4L Hardener B in 5L canister)

TECHNICAL DATA

FGE

Food Grade Epoxy

PRODUCT DESCRIPTION

Two component, high performance, food safe, epoxy coating. Ideally formulated for application in a vessel's holds for bulk transportation of food sensitive cargo (e.g. grains). Zero migration of food contaminants. FGE can be applied on top of tie coat protective coating to ensure food safety standards.

RECOMMENDED USE

As a top coat for vessel holds. As a general protective lining for cargo carrying and ballast tanks. No recommended for immersion in ketones, esters and chlorinated solvents. All ingredients in this product are listed as FDA approved for liquid edibles.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	30	80	40
Wet Film Thickness (µm)	60	160	80
Coverage Rate (m ² /L)	15	5	10

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Epoxy Polyamide	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Base A & Hardener B	DRY THROUGH TIME ▶	8h @ 20°C
COLOR ▶	White, Grey	FULL CURING ▶	10d
THINNER ▶	NanoPhos Thinner A	MIN. RECOAT INTERVAL ▶	6h @ 20°C
MIXING RATIO ▶	4:1 A:B per volume	VOC ▶	<340 g/L
SOLIDS (%wt.) ▶	90±3	FLASH POINT ▶	10°C
SOLIDS (%vol.) ▶	50±3	WATER RESISTANCE ▶	Excellent
		ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

While mixing the Base A, add the Hardener B and mix until homogenous. If necessary, add up to 10% by volume NanoPhos Thinner C to thin for spray application. Maximum pot life: 6-8h 20°C.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .017 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- EPR Epoxy Primer
- **FGE Food Grade Epoxy**

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

- 5L unit (4L Base A in a 5L container and 1L Hardener B in 1L canister)
- 20L unit (16L Base A in a 20L container and 4L Hardener B in 5L canister)

TECHNICAL DATA

CGU

Cool Glossy Stain Resistant PU Enamel

PRODUCT DESCRIPTION

A two components, high solids Acrylic / Aliphatic polyurethane finish, which cures to a very hard, high gloss, flexible coating with outstanding color retention. This coating has exceptional resistance to weathering, staining and corrosive environment. Use for exterior or interior applications wherever a superior gloss and color retention finish is desired, such as storage tanks, structural steel, pipelines, production equipment and offshore platforms etc. Special nanostructured ingredients reflect incident heat radiation to enhance thermal insulation and provide cool properties.

RECOMMENDED USE

As a permanent finish coat for most severe marine or industrial exposure. Ideal for tanks or gas carrier vessels, due to its cool properties.

FILM THICKNESS

	MINIMUM	MAXIMUM	RECOMMENDED
Dry Film Thickness (µm)	50	100	75
Wet Film Thickness (µm)	100	300	150
Coverage Rate (m ² /L)	7	4	5

Drying times differentiate in minimum or maximum values. Maintain recommended values during application.

PROPERTIES

TYPE ▶	Acrylic aliphatic PU	TOUCH DRY TIME ▶	30min @ 20°C
COMPONENTS ▶	Base A & Hardener B	DRY THROUGH TIME ▶	1h @ 20°C
COLOR ▶	White, Red, Orange, Buff Yellow	FULL CURING ▶	24h
THINNER ▶	NanoPhos Thinner C	MIN. RECOAT INTERVAL ▶	6h @ 20°C
MIXING RATIO ▶	4:1 A:B per volume	VOC ▶	<450 g/L
SOLIDS (%wt.) ▶	53±3	FLASH POINT ▶	20°C
SOLIDS (%vol.) ▶	40±3	WATER RESISTANCE ▶	Excellent
RECOMMENDED COATS ▶	2	ABRASION RESISTANCE ▶	Excellent

SURFACE PREPARATION

All surfaces should be clean, dry and free from oil, grease, dirt, mill scale, rust, corrosion products, oxides and other foreign matters or contamination.

Primed surfaces: Confirm cured and clean application surfaces.

Other surfaces: Please contact NanoPhos Marine for more information.

MIXING

Paints must be stirred at intervals since the pigments may tend to settle. Power mix or box the paint until product is homogeneous. If necessary, add up to 10% by volume NanoPhos Thinner C to thin for spray application. Maximum pot life: 6-8h 20°C.

APPLICATION

CONVENTIONAL SPRAYING ▶	Paint pressure pot with power agitator, double air regulators, moisture trap, 1/2" ID fluid hose, 5/16" ID air hose, DeVilbiss 510 gun, "E" tip and needle, 74 or 78 air cap.
AIRLESS SPRAYING ▶	Graco 30:1 pump, spray gun with .018 to .01 orifices.
BRUSH ▶	Recommended application method only for stripe coating or small areas. Special care must be taken to reach the recommended dry film thickness.

Substrate temperature should be minimum 7°C and at least 3°C above air dew point. Good ventilation is required to ensure proper drying.

TYPICAL PAINT SYSTEM

- EPR Epoxy Primer
- **CGU Cool Glossy Stain Resistant PU Enamel**

HEALTH AND SAFETY

- (A) Use normal precautions such as gloves, facemasks.
- (B) Adequate ventilation must be maintained.
- (C) Explosion proof lights & electrical equipment.
- (D) Non-Sparking shoes & tools for workers in area.
- (E) This product contains flammable materials. Forbid all flames, smoking and welding in work area.
- (F) Avoid breathing of vapor, contact with skin or eyes. If product comes in contact with skin or eyes, wash thoroughly with water and obtain medical attention.

AVAILABLE PACKAGING

- 5L unit (4L Base A in a 5L container and 1L Hardener B in 1L canister)
- 20L unit (16L Base A in a 20L container and 4L Hardener B in 5L canister)

TECHNICAL DATA

NPTA NanoPhos Thinner A

PRODUCT DESCRIPTION

Organic, solvent based thinner for epoxy paint systems.

TYPICAL PROPERTIES

Density/VOC: 850-870 g.L⁻¹, Medium evaporation rate, Flash point 25°C.

AVAILABLE PACKAGING

5L, 20L metal canisters and 200L metal barrels.

NPTB NanoPhos Thinner B

PRODUCT DESCRIPTION

Organic, solvent based thinner for alkyd/acrylic/vinyl paint systems.

TYPICAL PROPERTIES

Density/VOC: 780 g.L⁻¹, Medium evaporation rate, Flash point 40°C.

AVAILABLE PACKAGING

5L, 20L metal canisters and 200L metal barrels.

NPTC NanoPhos Thinner C

PRODUCT DESCRIPTION

Organic, solvent based thinner for polyurethane paint systems.

TYPICAL PROPERTIES

Density/VOC: 870 g.L⁻¹, Medium evaporation rate, Flash point 25°C.

AVAILABLE PACKAGING

5L, 20L metal canisters and 200L metal barrels.



GENERAL NOTICE

Please observe the precautionary notices displayed on the container of each product. Use under well ventilated conditions. Do not breathe or inhale mist. Avoid skin contact. Spillage on the skin should immediately be removed with suitable cleanser, soap and water. Eyes should be well flushed with water and medical attention sought immediately. Always ask, read and comprehend health or safety hazards and precautions for use of each product, as described in the relevant Safety Data Sheet.

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY.

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that NanoPhos' products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent. NanoPhos specifically disclaims any other expressed or implied warranty of fitness for a particular purpose or merchantability. NanoPhos disclaims liability for any incidental or consequential damages. The aforementioned products are neither tested nor represented as suitable for medical or pharmaceutical uses. NanoPhos reserves the right to change the given data without any prior notice. Minor product variations may be implemented in order to comply with local requirements. If there is any inconsistency in the text the English version will prevail.

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