



MATERIAL SAFETY DATA SHEET (MSDS)

Fortivene® NavalShield-HX™

Manufacturer:

Graphene Solid State Group LLC

Main Location:

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Sheridan, WY 82801

Production Facility:

1349 Lynn Ave
Bethlehem, PA 18015

Phone:

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1. IDENTIFICATION

Product Name:

Fortivene® NavalShield-HX™

Recommended Use:

Advanced marine and defense protective coating designed for corrosion resistance, anti-fouling performance, impact durability, and stealth enhancement on naval vessels.

Restrictions on Use:

For professional and military maritime application only.

2. HAZARDS IDENTIFICATION

Classification (per OSHA 29 CFR 1910.1200):

- Flammable Liquid – Category 3 (if solvent-based)
- Skin Irritation – Category 2
- Eye Irritation – Category 2A
- Specific Target Organ Toxicity (Single Exposure) – Category 3 (Respiratory)

Signal Word:

WARNING

Hazard Statements:

- Flammable liquid and vapor (if solvent-based)
- Causes skin irritation
- Causes serious eye irritation
- May cause respiratory irritation

Precautionary Statements:

- Keep away from heat/sparks/open flames
 - Use explosion-proof equipment where applicable
 - Avoid breathing vapors, mist, or spray
 - Wear protective gloves, clothing, and eye protection
 - Wash thoroughly after handling
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3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS Number	Concentration (% by weight)
Graphene Nanomaterial	Proprietary	Proprietary (Trade Secret)
Marine-Grade Polymer Resin System	Proprietary	Proprietary
Functional Mineral Fillers	Proprietary	Proprietary

Component	CAS Number	Concentration (% by weight)
Solvent Blend (if applicable)	Proprietary	Proprietary

Note: Exact formulation is proprietary and protected by trade secret law. Additional details may be provided to health professionals or regulatory authorities upon request.

4. FIRST AID MEASURES

Eye Contact:

Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present. Seek medical attention if irritation persists.

Skin Contact:

Wash thoroughly with soap and water. Remove contaminated clothing. Seek medical advice if irritation develops.

Inhalation:

Move person to fresh air. Seek medical attention if symptoms occur.

Ingestion:

Rinse mouth. Do not induce vomiting. Seek medical advice if discomfort persists.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Foam, dry chemical, or carbon dioxide. Water spray for cooling only.

Hazardous Combustion Products:

Carbon oxides, nitrogen oxides, and trace volatile organic compounds.

Protective Equipment:

Self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Eliminate ignition sources if flammable. Avoid breathing vapors or mists. Use appropriate PPE.

Environmental Precautions:

Prevent release into waterways, harbors, or sewers.

Cleanup Methods:

Absorb with inert material. Collect in properly labeled containers for disposal.

7. HANDLING AND STORAGE

Handling:

- Avoid ignition sources.
- Use only with adequate ventilation.
- Wear PPE.
- Wash hands after handling.

Storage:

- Store in a cool, dry, well-ventilated area.
 - Keep containers tightly closed.
 - Keep away from heat and flame.
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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

No established limits for proprietary components. Handle solvents as for general organic solvents.

Engineering Controls:

Provide local exhaust ventilation.

PPE:

- **Eye Protection:** Safety goggles or face shield
 - **Skin Protection:** Protective gloves and clothing
 - **Respiratory Protection:** NIOSH-approved respirator if airborne concentrations exceed exposure limits
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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Grey or dark marine-grade liquid

Odor: Mild solvent odor

pH: Not applicable

Flash Point: >23 °C (>73 °F) for solvent-based formulations

Boiling Point: >100 °C

Solubility: Insoluble in water

Density: ~1.2–1.5 g/cm³

10. STABILITY AND REACTIVITY

Reactivity:

Stable under recommended use conditions.

Chemical Stability:

Stable.

Hazardous Reactions:

None expected under normal conditions.

Decomposition Products:

Carbon oxides, nitrogen oxides, and trace volatile compounds.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:

Inhalation, skin contact, eye contact

Acute Effects:

- Skin and eye irritation
- Respiratory irritation from vapors

Chronic Effects:

Prolonged inhalation of solvent vapors may affect the central nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Not expected to be acutely hazardous when fully cured.

Persistence:

Non-biodegradable.

Bioaccumulation:

Not expected.

13. DISPOSAL CONSIDERATIONS

Dispose in compliance with all federal, state, and local regulations. Do not discharge to marine environments without appropriate permits.

14. TRANSPORT INFORMATION

UN Number:

UN1263 (Paint) if flammable

Hazard Class:

3 (Flammable Liquid)

Packing Group:

III

15. REGULATORY INFORMATION

OSHA: Hazardous under Hazard Communication Standard

TSCA: All components listed or exempt

California Proposition 65: May contain trace substances known to the State of California to cause cancer or reproductive harm

16. OTHER INFORMATION

Revision Date:

07/01/2025

Disclaimer:

The information herein is believed to be accurate but is provided without warranty. Proprietary formulation details are confidential and protected under applicable trade secret law.