



# MATERIAL SAFETY DATA SHEET (MSDS)

**Fortivene® AquaShield–UD™**

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**Manufacturer:**

Graphene Solid State Group LLC

**Main Location:**

30 N Gould St STE R  
Sheridan, WY 82801

**Production Facility:**

1349 Lynn Ave  
Bethlehem, PA 18015

**Phone:**

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## 1. IDENTIFICATION

**Product Name:**

Fortivene® AquaShield–UD™

**Recommended Use:**

Advanced coating for unmanned underwater vehicles (UUVs) and submersible equipment, providing corrosion resistance, anti-fouling properties, drag reduction, and stealth performance.

**Restrictions on Use:**

For professional and defense marine application only.

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## 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 only in well-ventilated areas
  - Avoid breathing vapors, mists, or spray
  - Wear protective gloves, clothing, and eye protection
  - Wash thoroughly after handling
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## 3. COMPOSITION / INFORMATION ON INGREDIENTS

<b>Component</b>	<b>CAS Number</b>	<b>Concentration (% by weight)</b>
Graphene Nanomaterial	Proprietary	Proprietary (Trade Secret)
Submersible-Grade Polymer Resin System	Proprietary	Proprietary
Mineral Fillers and Functional Additives	Proprietary	Proprietary

<b>Component</b>	<b>CAS Number</b>	<b>Concentration (% by weight)</b>
Solvent Blend (if applicable)	Proprietary	Proprietary

*Note: Exact formulation is proprietary and protected by trade secret law. Information will be disclosed to qualified health professionals or regulatory authorities upon request.*

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## **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 attention if discomfort persists.

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## **5. FIRE-FIGHTING MEASURES**

### **Suitable Extinguishing Media:**

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

### **Hazardous Combustion Products:**

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

### **Protective Equipment:**

Self-contained breathing apparatus and full protective clothing.

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## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal Precautions:**

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

### **Environmental Precautions:**

Prevent release into waterways or sewers.

### **Cleanup Methods:**

Contain spill with inert absorbent material. Collect in labeled, sealed containers for disposal.

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## 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. Solvent vapors should be treated as 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:** Dark grey or black 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/cm<sup>3</sup>

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## 10. STABILITY AND REACTIVITY

**Reactivity:**

Stable under recommended use conditions.

**Chemical Stability:**

Stable.

**Hazardous Reactions:**

None under normal conditions.

**Decomposition Products:**

Carbon oxides and trace volatiles on combustion.

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## 11. TOXICOLOGICAL INFORMATION

**Routes of Exposure:**

Inhalation, skin contact, eye contact

**Acute Effects:**

- Skin and eye irritation
- Respiratory irritation from vapors

**Chronic Effects:**

Prolonged exposure may cause central nervous system effects.

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## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:**

Not expected to be acutely hazardous when fully cured.

**Persistence:**

Non-biodegradable.

**Bioaccumulation:**

Not expected.

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## 13. DISPOSAL CONSIDERATIONS

Dispose of in compliance with all local, state, and federal regulations.

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## 14. TRANSPORT INFORMATION

**UN Number:**

UN1263 (Paint) if flammable

**Hazard Class:**

3 (Flammable Liquid)

**Packing Group:**

III

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## 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

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## 16. OTHER INFORMATION

**Revision Date:**

07/01/2025

**Disclaimer:**

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