# SAFETY DATA SHEET

**Issue Date: 01/01/2021**

## 1. IDENTIFICATION

**Product Name:** Vaporex Marine DEF Diesel Exhaust Fluid

**Recommended Use:** Solution for NOx reduction in SCR systems

**Company Identification**

Clear Fuel, Inc.
5909 Echo Dr.
Knoxville, TN 37919
United States

| | |
|---|---|
| **Customer Information Number:** | 865-588-4417 |
| **24-Hour Emergency Telephone Number:** | Chemtrec / 800-424-9300 |
| **Manufacturer's Name:** | Clear Fuel, LLC |
| **Manufacturer's Address:** | 5909 Echo Dr., Knoxville, TN 37919 |

## 2. HAZARDS IDENTIFICATION

| | |
|---|---|
| **Classification:** | GHS-US classification<br>Not classified |
| **Label Elements:** | GHS-US labeling<br>Signal word: None<br>Hazard statements: None<br>Precautionary statements: None |
| **Other Hazards:** | None known |
| **Unknown acute toxicity:** | No data available |

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance:** Not applicable

**Mixture:**

| Name | Product Identifier | % by Weight | GHS-US Classification |
|---|---|---|---|
| Water | (CAS No) 7732-18-5 | 60 | Not Classified |
| Urea | (CAS No) 57-13-6 | 40 | Not Classified |

## 4. FIRST AID MEASURES

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**Inhalation:** Allow victim to breathe fresh air. Allow the victim to rest.

**Skin contact:** Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

**Eye contact:** Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

**Ingestion:** Rinse mouth, DO NOT induce vomiting. Obtain emergency medical attention.

**Symptoms/Injuries:** Not expected to present a significant hazard under anticipated conditions of normal use.

## 5. FIRE FIGHTING MEASURES

**Suitable extinquishing media:** Foam. Dry powder. Carbon dioxide. Sand.

**Unsuitable extinguishing media:** Do not use a heavy water stream.

**Special hazards arising from the substance/mixture:** Not applicable.

**Firefighting instructions:** Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent firefighting water from entering environment.

**Protection during firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** The EPA has no established reportable quantity for spills for this material. Secondary containment is not specified.

**Non-Emergency personnel:** Evacuate unnecessary personnel.

**Emergency responders:** Equipment cleanup crew should wear proper protection. Ventilate area.

**Environmental precautions:** Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

**Methods for cleanup:** Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. For minor spillages wash down with excess of water. Mop up small spills.

See Section 8. Exposure controls and personal protection.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

**Conditions for safe storage, including any incompatibilties:** Keep only in the original container in a cool, well ventilated place away from direct sunlight and/or heat sources. Keep container closed when not in use.

**Incompatible products:** Strong bases. Strong acids.

**Incompatible materials:** Sources of ignition. Direct sunlight.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Personal Protective Equipment (PPE):**

**Eyes:** Chemical goggles or safety glasses.
**Hands:** Protection gloves.
**Respiratory:** Not applicable.
**Other information:** Do not eat, drink or smoke during use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical state** | Liquid |
| **Odor** | Characteristic ammonia odor |
| **Color** | Colorless |
| **pH** | 9 - 10 |
| **Relative evaporation rate (butylacetate=1)** | < 1 |
| **Freezing point** | -0° C (32° F) |
| **Boiling point** | > 100° C (212° F) |
| **Flash point** | No data available |
| **Auto Ignition temperature** | No data available |
| **Decomposition temperature** | No data available |
| **Flammability (solid, gas)** | No data available |
| **Specific Gravity** | 1.11 |
| **Solubility** | Soluble in water |

## 10. STABILITY AND REACTIVITTY

**Chemical stability:** Stable under normal conditions.

**Reactivity:** No additional information available.

**Possibility of hazardous reactions:** Not established.

**Conditions to avoid:** No data available.

**Incompatible materials:** Strong acids. Strong bases. Oxidizing agents (peroxides, chromates, dishromates).

**Hazardous decomposition products:** Carbon monoxide. Carbon dioxide. Fume.

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:** Not classified.

**Urea (57-13-6)**

| | |
|---|---|
| **LD50 oral rat:** | 8,471.00 mg/kg (Rat; OECD 401; Acute Oral Toxicity; Literature study; 14300 mg/kg bodyweight; Rat; Experiemental value |
| **LD50 dermal rat:** | > 3,200.00 mg/kg (Rat; Literature study) |
| **LD50 dermal rabbit:** | > 21,000.00 mg/kg (Rabbit; Literature study) |
| **ATE US (oral):** | 8,471.00 mg/kg bodyweight |
| **Skin corrosition/irritation:** | Not classified; pH: 9 - 10 |
| **Serious eye damage/irritation:** | Not classified; pH: 9 - 10 |
| **Respiratory or skin sensitization:** | Not classified |
| **Carcinogenicity:** | Not classified |
| **Aspiration hazard:** | Not classified |
| **Potential adverse human health effects and symptoms:** | None known |

## 12. ECOLOGICAL INFORMATION

**Urea (57-13-6)**

| | |
|---|---|
| **LC50 fish 1:** | > 6,810 mg/l (96 h; Leuciscus idus; Nominal concentration) |
| **EC50 daphnia 1:** | > 10,000 mg/l (48 h; Daphnia magna; Nominal concentration) |
| **EC50 fish 2:** | 17,500 mg/l (96 h; Poecilia reticulata) |
| **EC50 daphnia 2:** | > 10,000 mg/l (24 h; Daphnia magna) |
| **TLM fish 1:** | 17,500 ppm (96 h; Poecilia reticulata) |
| **Threshold limit other aquatic organisms 1:** | 120,000 mg/l (16 h; Bacteria; Toxicity test) |
| **Threshold limit other aquatic organisms 2:** | > 10,000 mg/l (Pseudomonas putida) |
| **Threshold limit algae 1:** | > 10,000 mg/l (168 h; Scenedesmus quadricauda; Growth rate) |
| **Threshold limit algae 2:** | 47 mg/l (192 h; Microcystis aeruginosa; Growth rate) |
| **Persistence and degradability:** | Inherently biodegradable. Hydrolysis in water. |
| **ThOD:** | 0.27 g $O_2$/g substance |
| **BCF fish 1:** | 1.00 (72 h; Brachydanio rerio; Fresh water) |
| **BCF other aquatic organisms 1:** | 11,700 (Chlorella sp.) |
| **Log Pow:** | < -1.73 (Experimental value; EU Method A.8; Partition Coefficient) |
| **Bioaccumulative potential:** | Not applicable |
| **Mobility in soil**: | Not applicable |
| **Effect on ozone layer:** | No data available |
| **Effect on global warming:** | No known ecological damage cause by this product |
| **Other information:** | Avoid release to the environment |

## 13. DISPOSAL CONSIDERATION

**Waste disposal recommendations:** As a non-hazardous liquid waste, it should be solidified with stabilizing agents such as sand, fly ash, or clay absorbent, so that no free liquid remains before dispoal to an industrial waste landfill.

**Ecology - waste materials:** Avoid release to the environment.

## 14. TRANSPORT INFORMATION

| | |
|---|---|
| **DOT hazard class:** | Not dangerous. Not regulated. |
| **ADR - UN-No. (ADR):** | Not regulated |
| **Transport by sea - UN-No. (IMDG)** | Not regulated |
| **Air transport - UN-No. (IATA):** | Not regulated |

## 15. REGULATORY INFORMATION

**VAPOREX DEF**

**EPA TSCA Regulatory Flag:** Toxic Substances Control Act (TSCA): Ingredients listed.

**RQ (Reportable quantity, section 304 of EPA's List of Lists):** None. Non-hazardous.

**S.A.R.A. Section 302 Threshold Planning Quantity (TPQ):** No extremely hazardous substances are in this product.

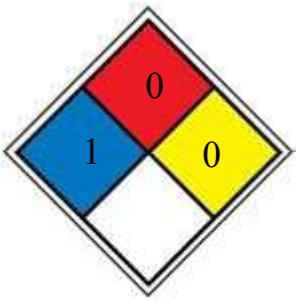
**S.A.R.A. Section 311/312 Hazard Classes:** Urea. No hazards resulting from the material as supplied.

**UREA (57-13-6)**

**EPA TSCA Regulatory Flag:** Toxic Substances Control Act (TSCA): Ingredients listed.

**S.A.R.A. Section 311/312 Hazard Classes:** Immediate (acute) health hazard.

## 16. OTHER INFORMATION




**NFPA:** 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

**NFPA fire hazard:** 0 - Materials that will not burn.

**NFPA reactivity:** 0 - Normally stable, even under fire exposure conditions and are not reactive with water.

**HMIS III Rating:**

**Health:** 1 - Slight hazard - Irritation or minor reversible injury possible.

**Flammability:** 0 - Minimal Hazard - Materials that will not burn.

**Physical:** 0 - Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

**Personal Protection:** B - Safety glasses and gloves.

*Clear Fuel, Inc.has provided the information in this SDS in good faith, but we make no representation to its comprehensiveness and/or accuracy. It is the user's responsiblity to determine the safety, toxicity, and suitability for his or her own use of the product described. Since the actual use by others is beyond our control, no guarantee, either expressed or implied, is made by Clear Fuel, Inc.. Clear Fuel, Inc. will not be responsible for damages resulting from the use or reliance upon this information. The user assumes all risk and responsibility.*