



Blue Power DEF (Diesel Exhaust Fluid)

PRODUCT DESCRIPTION

Blue Power DEF is a diesel exhaust fluid manufactured with 32.5% high purity synthetic urea and 67.5% deionized water designed for use in diesel powered passenger vehicles, trucks, construction, mining, marine and agricultural equipment. It is compatible with all Tier 4 final compliant diesel engines that utilize Selective Catalytic Reduction (SCR) technology. Blue Power DEF prevents SCR breakdown and helps reduce harmful nitrogen oxide emissions by 90%. It is a simple-to-use, low cost, clean solution for meeting the 2010 EPA Clean Air Act requirements for diesel engines.

APPLICATION INFORMATION

Blue Power DEF is a stable, colorless, nonflammable, and non-toxic fluid conforming to ISO 22241-1 standards for DEF. It is API Certified DEF product that meets most OEM requirements and specifications for DEF usage.

When used properly, Blue Power DEF will help maximize the life of SCR filters on diesel engines and allow for conversion of exhaust NOx into harmless nitrogen and water.

STORAGE & HANDLING GUIDELINES

- DO NOT MIX WITH DIESEL FUEL
- Avoid direct exposure to sunlight
- Optimal storage temperature is: 23° F to 77° F
- DEF will freeze at 12° F
- ISO 22241 standards require the use of only stainless steel or High Density Polyethylene (HDPE) to store DEF to prevent contamination and SCR failure
- There are no DOT restrictions, other than weight, to transport UREA solutions
- Consult Blue Power DEF SDS for more specific information about chemical hazards

PROPERTIES	BLUE POWER DEF
UREA, % by weight	31.8 - 33.2
Boiling Point	> 212° F
Crystallization (Freeze) Point	12° F
Specific Gravity (Water = 1)	1.1
Water Solubility	100%
Evaporation Rate	<1
Vapor Density (Air = 1)	0.6 H2O >1
Vapor Pressure (mm of Hg)	Not Applicable
Appearance	Colorless, Clear Liquid
Odor	None to Slight Ammonia

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When you see this logo you can be assured of getting API Certified, clean diesel exhaust fluid that will help maximize the life of your SCR Filters and achieve lower operating costs.

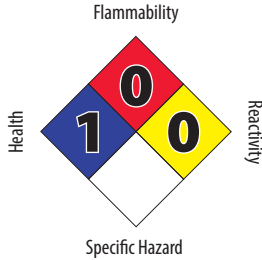


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NFPA:



SECTION 1. PRODUCT IDENTIFIER

Product Name Blue Power Diesel Exhaust Fluid (DEF)

Relevant Use Urea Solution for NOx reduction in SCR Systems

Company Identification Valley Pacific - Headquarters
152 Frank West Circle, Suite 100
Stockton, CA 95206-4098
1-800-266-3782
www.vpps.net

Emergency Contact CHEMTREC: 1-800-424-9300 or 703-527-3887

SECTION 2. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of the product.

Classification (GHS-US) Not Classified

Label Elements **GHS-US Labeling** No labeling applicable

Other Hazards **Hazards Not Otherwise Classified (HNOC)**
None known

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Water	(CAS No) 7732-18-5	60 - 68	Not classified
Urea	(CAS No) 57-13-6	32 - 40	Not classified



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Name	Product Identifier	% (w/w)	Classification (GHS-US)
Ammonia	(CAS No) 7664-41-7	< 0.1	Flam. Gas 2, H221 Liquefied gas, H280 Acute Tox. 3 (Inhalation:gas), H331 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 2, H411

Ingredients, other than those mentioned above, as used in this product are not hazardous as defined under current Department of Labor regulations, or are present in de minimus concentrations (less than 0.1% for carcinogens, less than 1.0% for other hazardous materials).

SECTION 4. FIRST AID MEASURES

Eye Contact

Immediately flush with large amounts of water, including under the eyelids. If pain or irritation persists seek medical attention. Speed and thoroughness in rinsing eyes are important to avoid permanent injury.

Inhalation

Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact

Remove contaminated clothing. Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

Ingestion

Do not induce vomiting. Get medical attention immediately.

Most Important Symptoms and Effects Both Acute and Delayed

General: No known significant effects or critical hazards.

Inhalation: Overexposure may be irritating to the respiratory system. **Skin Contact:** Repeated or prolonged skin contact may cause irritation. **Eye Contact:** Direct contact with the eyes is likely irritating.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: No known significant effects or critical hazards.

Most Important Symptoms and Effects Both Acute and Delayed

General: May cause skin irritation and eye irritation.

Inhalation: May cause respiratory irritation.

Skin Contact: May cause skin irritation. **Eye Contact:** May cause eye irritation.

Ingestion: Do not induce vomiting. Get medical attention immediately.

Chronic Symptoms

None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed and feeling unwell, seek medical advice (show the label where possible).

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SECTION 5. FIREFIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing media appropriate for surrounding fire.
Unsuitable Extinguishing Media	Do not use a heavy water stream. Use of heavy stream of water may spread fire.
Special Hazards Arising From the Substance or Mixture	Fire Hazard: Not combustible but may decompose at high temperatures. Explosion Hazard: Product is not explosive. Reactivity: Hazardous reactions will not occur under normal conditions.
Advice for Firefighters	Precautionary Measures Fire: Exercise caution when fighting any chemical fire. Under fire conditions, hazardous fumes will be present. Firefighting Instructions: Use water spray or fog for cooling exposed containers. Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.
Hazardous Combustion Products	Ammonia. Nitrogen oxides.
Other Information	Refer to Section 9 for flammability properties.
Reference to Other Sections	Refer to section 9 for flammability properties.

SECTION 6. ACCIDENTAL RELEASE MEASURES**Personal Precautions, Protective Equipment and Emergency Procedures**

General Measures	Use proper hygiene practices and avoid excessive skin contact.
For Non-Emergency Personnel	Protective Equipment: Use appropriate personal protection equipment (PPE). Emergency Procedures: Evacuate unnecessary personnel.
For Emergency Personnel	Protective Equipment: Equip cleanup crew with proper protection. Emergency Procedures: Ventilate area.
Environmental Precautions	Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.
Methods and Material for Containment and Cleaning Up	For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.
Reference to Other Sections	See Heading 8, Exposure Controls and Personal Protection.

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SECTION 7. HANDLING AND STORAGE**Precautions for Safe Handling**

Store in compliance with all Federal, State, and local regulations. Store in a well-ventilated area, away from incompatible materials or sources of heat and ignition. Empty containers may contain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flames, sparks or other sources of ignition; they may evolve noxious fumes

Hygiene Measures

Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in compliance with all Federal, State, and local regulations.
Incompatible Materials: Nitric Acid, gallium, perchlorate, strong oxidizing agents, caustics and alkalis.

Specific End Use(s)

Hydraulic Fluid.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control Parameters**

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available but not required.

Personal Protective Equipment: Safety glasses, gloves and general work clothing are recommended. Where ventilation is insufficient, wear respiratory protection. Wearing of appropriate protective clothing and gloves is suggested if epidermal sensitivity develops.

Materials for Protective Clothing

Not specified.

Hand Protection

Wear chemically resistant protective gloves.

Eye Protection

Safety glasses.

Skin and Body Protection

Wear suitable protective clothing.

Respiratory Protection

Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

Environmental Exposure Controls

Collect spilled material into containers for disposal. Do not flush to surface water. Spilled chemical can be used as fertilizer (46-0-0). Follow applicable Federal, State and local reporting requirements.

Consumer Exposure Controls

Do not eat, drink or smoke during use.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**Information on Basic Physical and Chemical Properties**

Physical State	Liquid
Appearance	Colorless
Odor	Slight ammonia
Odor Threshold	Not available
pH	Not available
Evaporation Rate	Not available
Melting Point	Not available
Freezing Point	Not available
Boiling Point	Not available
Flash Point	Not applicable
Auto-ignition Temperature	Not available
Decomposition Temperature	135 °C (275 °F) (Urea)
Flammability (solid, gas)	Not applicable
Lower Flammable Limit	Not applicable
Upper Flammable Limit	Not applicable
Vapor Pressure	Not available
Relative Vapor Density at 20 °C	Not available
Specific Gravity	1.09 - 1.13 g/cc (9.1 - 9.4 lb/gal)
Partition Coefficient: N-Octanol/Water	Not available
Viscosity	Not available
Explosion Data – Sensitivity to Mechanical Impact	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	Not expected to present an explosion hazard due to static discharge.
Crystallization Temperature	-11 °C (12 °F) for 32.5% and 0 °C (32 °F) for 40% solution

SECTION 10. STABILITY AND REACTIVITY

Reactivity	Hazardous reactions will not occur under normal conditions.
Chemical Stability	Stable under recommended handling and storage conditions (see section 7).
Possibility of Hazardous Reactions	Hazardous polymerization will not occur.
Conditions to Avoid	Avoid exposing containers to heat or flame. Keep separated from incompatible materials.
Incompatible Materials	Nitric acid. Gallium. Perchlorates. Strong oxidizers. Caustic products. Alkalis.
Hazardous Decomposition Products	Ammonia. Nitrogen oxides.



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SECTION 11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity	Not classified
LD50 and LC50 Data	Not available
Skin Corrosion/Irritation	Not classified
Serious Eye Damage/Irritation	Not classified
Respiratory or Skin Sensitization	Not classified
Germ Cell Mutagenicity	Not classified
Teratogenicity	Not classified
Carcinogenicity	Not classified
Specific Target Organ Toxicity (Repeated Exposure)	Not classified
Reproductive Toxicity	Not classified
Specific Target Organ Toxicity (Single Exposure)	Not classified
Aspiration Hazard	Not classified
Symptoms/Injuries After Inhalation	May cause respiratory irritation.
Symptoms/Injuries After Skin Contact	May cause skin irritation.
Symptoms/Injuries After Eye Contact	May cause eye irritation.
Symptoms/Injuries After Ingestion	Abdominal pain, nausea, vomiting and gastrointestinal irritation may result. (Urea is a protein to ruminants, animals with the enzyme Urease in their digestive systems, but is moderately toxic to humans when ingested).
Chronic Symptoms	None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Urea (57-13-6)	
LD50 Oral Rat	8471 mg/kg
Ammonia (7664-41-7)	
LC50 Inhalation Rat	5.1 mg/l (Exposure time: 1 h)
LC50 Inhalation Rat	2000 ppm/4h (Exposure time: 4 h)

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SECTION 12. ECOLOGICAL INFORMATION**Toxicity** Not classified

Urea (57-13-6)	
LC50 Fish 1	16200 - 18300 mg/l (Exposure time: 96 h - Species: Poecilia reticulata)
EC50 Daphnia 1	3910 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
Ammonia (7664-41-7)	
LC50 Fish 1	0.44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio)
EC50 Daphnia 1	25.4 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	0.26 - 4.6 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)

Persistence and Degradability Not available**Bioaccumulative Potential**

Urea (57-13-6)	
BCF fish 1	< 10
Log Pow	-1.59 (at 25 °C)
Ammonia (7664-41-7)	
Log Pow	-1.14 (at 25 °C)

Mobility in Soil Not available**Other Adverse Effects** **Other Information:** Avoid release to the environment.**SECTION 13. DISPOSAL CONSIDERATIONS****Sewage Disposal Recommendations** Do not empty into drains; dispose of this material and its container in a safe way. Do not empty into drains. Do not dispose of waste into sewer.**Waste Disposal Recommendations** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.**SECTION 14. TRANSPORT INFORMATION****In Accordance with DOT** Not regulated for transport**In Accordance with IMDG** Not regulated for transport**In Accordance with IATA** Not regulated for transport**In Accordance with TDG** Not regulated for transport



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SECTION 15. US FEDERAL REGULATIONS

Urea (57-13-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Ammonia (7664-41-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on the United States SARA Section 302 Listed on United States SARA Section 313	
SARA Section 302 Threshold Planning Quantity (TPQ)	500
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Sudden release of pressure hazard
SARA Section 313 - Emission Reporting	1.0 % (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing)

US State Regulations

None noted

Canadian Regulations

Urea Solution, 32.5% or 40%	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Ammonia (7664-41-7)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Distillates, petroleum, hydrotreated heavy paraffinic (64742-54-7)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Class A - Compressed Gas Class B Division 1 - Flammable Gas Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class E - Corrosive Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.



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SECTION 16. OTHER INFORMATION

HMIS III Rating

Health	1 Slight Hazard - irritation or minor reversible injury possible
Flammability	0 Minimal Hazard - Materials 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, Gloves

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