



SAFETY DATA SHEET Diesel Exhaust Fluid 50%

Section 1. IDENTIFICATION

Product Name: Diesel Exhaust Fluid 50%

Synonyms: DEF (50%), AUS-50

Recommended use: NOx Reducing Agent from diesel combustion

Restrictions on use: Use only as directed

Manufacturer: Iowa Fertilizer Company, LLC
3550 180th St.
Wever, IA 52658
319-376-4500
319-376-4700 (24 hour)

Emergency phone number: 800-424-9300 (Chemtrec)

Section 2. HAZARD(S) IDENTIFICATION

Classification:

| Physical | Health | Environmental |
|---------------|---------------|---------------|
| Not Hazardous | Not Hazardous | Not Hazardous |

Label Elements: None required

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical name | CAS No. | Concentration |
|---------------------------|-----------|---------------|
| Water | 7732-18-5 | Balance |
| Urea | 57-13-6 | 50% |
| Free Ammonia (Alkalinity) | 7664-41-7 | ≤ 0.2 % |
| Biuret | 108-19-0 | ≤ 0.3 % |

Section 4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If irritation occurs or breathing is difficult, get medical attention.

Skin contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Eye contact: Flush eyes with water while lifting the upper and lower lids. Get medical attention if irritation develops or persists.

Ingestion: Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to a person who is unconscious or convulsing. Get medical attention.

Most important symptoms/effects, acute and delayed: Contact with eyes may cause mild eye irritation. Prolonged skin contact may cause skin irritation. Inhalation of mists may cause upper respiratory tract irritation. Swallowing large amounts may cause gastric upset.

Indication of immediate medical attention and special treatment, if necessary: Immediate medical attention is not required under normal use conditions.

Section 5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use any media that is appropriate for the surrounding material on fire. DEF is not flammable.

Specific hazards arising from the chemical: Combustion may produce oxides of carbon, nitrogen, and ammonia.

Special protective equipment and precautions for fire-fighters: Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus. Cool fire exposure containers with water.

Section 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing and equipment.

Environmental hazards: Report spill as required by local and federal regulations.

Methods and materials for containment and cleaning up: Collect spilled material with inert material and place into a closable, labeled container for disposal. Wash spill area with water.

Section 7. HANDLING AND STORAGE

Precautions for safe handling: Avoid eye contact and prolonged skin contact. Avoid breathing mists or spray. Use with adequate ventilation. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Store in a cool, well-ventilated area. Protect storage container from physical damage.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

| | |
|---------|--|
| Water | None Established |
| Urea | 10 mg/m ³ TWA AIHA WEEL |
| Ammonia | 50 ppm TWA OSHA PEL 25 ppm TWA, 35 ppm STEL ACGIH TLV |
| Biuret | None Established |

Appropriate engineering controls: No special ventilation required for normal use. If use generates mists, use general ventilation or local exhaust as required to maintain exposures below the occupational exposure limits.

Individual protection measures, such as personal protective equipment:

Respiratory protection: None needed under normal conditions of use.

Skin protection: None normally needed. Wear rubber or neoprene gloves for prolonged skin contact.

Eye/face protection: Safety glasses are recommended if splashing is possible.

Other: Appropriate protective clothing as needed to minimize skin contact.



Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Colorless Clear liquid

Odor: Slight ammonia odor.

| | |
|--|--|
| Odor threshold: None | pH: 7.5-9.5 |
| Melting point/freezing point: Not available | Boiling point: 223°F (106°C) |
| Flash point: Not flammable | Evaporation rate: Not available |
| Flammability (solid, gas): Not applicable | |
| Flammable limits: LEL: Not applicable | UEL: Not applicable |
| Vapor pressure: Not available | Vapor Density: Not available |
| Relative density: 1.140 | Solubility in Water: 100% |
| Partition coefficient: n-octanol/water: Not available | Auto-ignition temperature: Not applicable |
| Decomposition temperature: Not applicable | Viscosity: Not available |

Section 10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical stability: Stable.

Possibility of hazardous reactions: None known.

Conditions to avoid: Do not mix with any other chemicals or products.

Incompatible materials: Avoid strong acids and oxidizing agents.

Hazardous decomposition products: Thermal decomposition may produce oxides of carbon, nitrogen, and ammonia.

Section 11. TOXICOLOGICAL INFORMATION

Inhalation: High concentrations of mists may cause nose, throat, and upper respiratory tract irritation.

Ingestion: Swallowing large amounts may cause gastrointestinal irritating and nausea.

Skin contact: Prolonged skin contact may cause skin irritation.

Eye contact: Mists or direct contact may cause mild irritation with redness and tearing.

Chronic effects: None known.

Reproductive Toxicity: None of the components have been shown to cause reproductive or developmental toxicity.

Mutagenicity: None of the components have been shown to cause mutagenic activity.

Carcinogenicity: None of the ingredients are listed as a carcinogen by IARC, NTP or OSHA.

Acute Toxicity Values:

Urea: Oral rat LD50 14,300 – 15000 mg/kg

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity:

Urea: 96 hr LC50 *Leuciscus idus* >6810 mg/L, 24 hr EC50 *daphnia magna* >10000 mg/L

Persistence and degradability: Urea is rapidly hydrolyzed to ammonia and carbon dioxide in environmental systems.

Bioaccumulative potential: The potential for bioconcentration in aquatic organisms is expected to be low.
Urea Log Pow -1.59 @ 25°C

Mobility in soil: Urea is highly mobile in soil.

Other adverse effects: None known.

Section 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state and federal regulations.

Section 14. TRANSPORT INFORMATION

| | UN Number | Proper shipping name | Hazard Class | Packing Group | Environmental Hazard |
|------|-----------|----------------------|--------------|---------------|----------------------|
| DOT | None | Not Regulated | | | |
| TDG | None | Not Regulated | | | |
| IMDG | None | Not Regulated | | | |
| IATA | None | Not Regulated | | | |

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions: None known.

STCC Code: 2818142

Section 15. REGULATORY INFORMATION

Safety, health, and environmental regulations specific for the product in question.

CERCLA: This product is not subject to CERCLA reporting requirements, however, many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA Hazard Category (311/312): Refer to Section 2 for OSHA Hazard Classification.

SARA 313: This Product does not contain any Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372).

EPA TSCA Inventory: All of the components of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

Canadian CEPA: All of the ingredients are listed on the Canadian Domestic Substances List.

Section 16. OTHER INFORMATION

NFPA Rating: Health = 1

Flammability = 0

Instability = 0

HMIS Rating: Health = 1

Flammability = 0

Physical Hazard = 0

SDS Revision History: New SDS

Date of preparation: November 15, 2017

Date of last revision: New SDS

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