

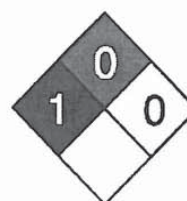
## MATERIAL SAFETY DATA SHEET

### 1. Product and Company Identification

Product Name	Diesel Exhaust Fluid /TerraCair
CAS #	Mixture
Product use	Diesel Exhaust NOx Reducing Agent
Manufacturer	CF Industries Sales, LLC 4 Parkway North Deerfield, IL 60015-2590 Phone: 847-405-2400 800-424-9300
CHEMTREC	

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	/ 1
Flammability	0
Physical Hazard	0
Personal Protection	B



### 2. Hazards Identification

<b>Emergency Overview</b>	CAUTION EYE AND SKIN IRRITANT.
<b>Potential short term health effects</b>	
<b>Routes of exposure</b>	Eye, Skin contact, Inhalation, Ingestion.
<b>Eyes</b>	May cause irritation.
<b>Skin</b>	May cause irritation.
<b>Inhalation</b>	May be harmful by inhalation. May cause respiratory tract irritation.
<b>Ingestion</b>	May cause stomach distress, nausea or vomiting.
<b>Target organs</b>	Eyes. Skin. Respiratory system.
<b>Signs and symptoms</b>	Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

### 3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Water	7732-18-5	67.5
Urea	57-13-6	32.5

### 4. First Aid Measures

<b>First aid procedures</b>	
<b>Eye contact</b>	Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.
<b>Skin contact</b>	Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.

<b>Inhalation</b>	If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention. If breathing has stopped, trained personnel should administer CPR immediately.
<b>Ingestion</b>	Do not induce vomiting. Rinse mouth with water, then drink one or two glasses of water. Obtain medical attention. Never give anything by mouth if victim is unconscious, or is convulsing.
<b>Notes to physician</b>	Symptoms may be delayed.
<b>General advice</b>	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Wear impervious gloves and safety glasses. Keep out of reach of children.

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## 5. Fire Fighting Measures

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<b>Flammable properties</b>	Not flammable by WHMIS/OSHA criteria.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Treat for surrounding material.
<b>Unsuitable extinguishing media</b>	Not available
<b>Protection of firefighters</b>	Not available
<b>Specific hazards arising from the chemical</b>	Not available
<b>Protective equipment for firefighters</b>	Firefighters should wear full protective clothing including self-contained breathing apparatus.
<b>Hazardous combustion products</b>	May include and are not limited to: Oxides of carbon. Oxides of nitrogen. Ammonia.
<b>Explosion data</b>	
<b>Sensitivity to mechanical Impact</b>	Not available
<b>Sensitivity to static discharge</b>	Not available

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## 6. Accidental Release Measures

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<b>Personal precautions</b>	Keep unnecessary personnel away. Wear appropriate protective clothing.
<b>Methods for containment</b>	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
<b>Methods for cleaning up</b>	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labeled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use.

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## 7. Handling and Storage

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<b>Handling</b>	Use good industrial hygiene practices in handling this material.
<b>Storage</b>	Keep out of reach of children. Store in a closed container away from incompatible materials.

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## 8. Exposure Controls / Personal Protection

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Exposure limits Ingredient(s)	Exposure Limits
Urea	<b>ACGIH-TLV</b> Not established <b>OSHA-PEL</b> Not established
<b>Engineering controls</b>	Ensure adequate ventilation, especially in confined areas. Use only under good ventilation conditions or with respiratory protection.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Safety glasses with side shields are recommended if splashing or contact is likely.
<b>Hand protection</b>	Impervious gloves (Nitrile, Viton, Butyl) are recommended if prolonged or repeated contact is likely.
<b>Skin and body protection</b>	As required by employer code.
<b>Respiratory protection</b>	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.
<b>General hygiene considerations</b>	Avoid breathing vapors. Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

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## 9. Physical & Chemical Properties

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<b>Appearance</b>	Clear.
<b>Color</b>	Colorless
<b>Form</b>	Liquid
<b>Odor</b>	Slight ammonia
<b>Physical state</b>	Liquid
<b>pH</b>	9.8 - 10.0
<b>Freezing point</b>	-12°C
<b>Boiling point</b>	104°C
<b>Density</b>	9.1 lbs. / USG - 4.13 kg / 3.785L
<b>Specific gravity</b>	1.087-1.093 @ 20°C
<b>Solubility (H2O)</b>	100%

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## 10. Chemical Stability & Reactivity Information

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<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Conditions to avoid</b>	Do not mix with any other chemical or product.
<b>Incompatible materials</b>	Acids. Oxidizers. Alkalis.
<b>Hazardous decomposition products</b>	May include and are not limited to: Oxides of carbon. Oxides of nitrogen. Ammonia.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

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## 11. Toxicological Information

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### Component analysis - LC50

Ingredient(s) LC50

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Urea Not available

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### Component analysis - Oral LD50

Ingredient(s) LD50

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Urea 11,500 - 13,000 mg/kg mouse; 14,300 - 15,000 mg/kg rat; 510 mg/kg cattle.

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### Effects of acute exposure

Eye	May cause irritation.
Skin	May cause irritation.
Inhalation	Not available
Ingestion	May cause stomach distress, nausea or vomiting.
Sensitization	Non-hazardous by WHMIS/OSHA criteria.
Chronic effects	Non-hazardous by WHMIS/OSHA criteria.
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.
Reproductive effects	Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.

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## 12. Ecological Information

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Ecotoxicity Components of this product have been identified as having potential environmental concerns.

### Ecotoxicity - Freshwater Fish Species Data

Urea 57-13-6 96 Hr LC50 Barillius barna: >9100 mg/L

### Ecotoxicity - Microtox Data

Urea 57-13-6 24HrEC50 Daphnia magna straus:>10000mg/L

Environmental effects Not available

Aquatic toxicity Not available

Persistence / degradability Not available

Bioaccumulation / accumulation Not available

Partition coefficient Not available

Mobility in environmental media Not available

Chemical fate information Not available

Other adverse effects Not available

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## 13. Disposal Considerations

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Waste codes	Not available
Disposal instructions	Review federal, provincial, and local government requirements prior to disposal.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

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## 14. Transport Information

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U.S. Department of Transportation (DOT)	Not regulated as dangerous goods.
Transportation of Dangerous Goods (TDG - Canada)	Not regulated as dangerous goods.

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## 15. Regulatory Information

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Canadian federal regulations	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.
US Federal regulations	The product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
Occupational Safety and Health Administration (OSHA)	
29 CFR 1910.1200 hazardous chemical	Yes
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	Yes
Clean Air Act (CAA)	Not available
Clean Water Act (CWA)	Not available
Safe Drinking Water Act (SDWA)	Not available
Drug Enforcement Agency (DEA)	Not available
Food and Drug Administration (FDA)	Not available
WHMIS status	Controlled
WHMIS classification	Class D - Division 2B
WHMIS labeling	



**State regulations**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**Inventory name**

**Country(s) or region**

Canada

Canada

United States & Puerto Rico

**Inventory name**

Domestic Substances List (DSL)

Non-Domestic Substances List (NDSL)

Toxic Substances Control Act (TSCA) Inventory

**On inventory (yes/no)\***

Yes

No

Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

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## 16. Other Information

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**Disclaimer**

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**Issue date**

**06-Sept-2013**

**Effective date**

**06-Sept-2013**

**Expiry date**

**06-Sept-2016**

**Previous issue date**

**22-Oct-2012**

**Prepared by**

**CF Industries Sales, LLC – 847-405-2400**