I. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Ashland Regulatory Information Number 1-800-325-3751
P.O. Box 2219 Telephone 614-790-3333
Columbus, OH 43216 Emergency telephone number 1-800-ASHLAND (1-800-274-5263)

Product name AIR SHIELD™ DIESEL EXHAUST FLUID
Product code 728770
Product Use Description No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, colourless

CAUTION! NOTICE: WHILE THIS MATERIAL HAS A LOW LEVEL OF TOXICITY, GOOD INDUSTRIAL HYGIENE PRACTICES ARE ENCOURAGED TO MINIMIZE EXPOSURE.

Potential Health Effects

Exposure routes
Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

Eye contact
May cause mild eye irritation. Symptoms include stinging, tearing, and redness.

Skin contact
May cause mild skin irritation. Symptoms may include redness and burning of skin.

Ingestion
Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

Inhalation
Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are
AIR SHIELD™ DIESEL EXHAUST FLUID
728770

not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition
Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: lung (for example, asthma-like conditions)

Symptoms
Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), Headache, Dizziness

Target Organs
No data

Carcinogenicity
This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive hazard
Based on the available information, risk to the fetus from maternal exposure to this material cannot be assessed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>UREA</td>
<td>57-13-6</td>
<td>&gt;=30-&lt;40%</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**Eyes**
If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.
AIR SHIELD™ DIESEL EXHAUST FLUID
728770

Skin
Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion
Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation
If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to physician
Hazards: No information available.
Treatment: No information available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Dry chemical, Carbon dioxide (CO2), Water spray

Hazardous combustion products
acid vapors, Ammonia, carbon dioxide and carbon monoxide, nitrogen oxides (NOx)

Precautions for fire-fighting
Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions
Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Other information

Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage

Store in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.
Skin and body protection

Wear resistant gloves (consult your safety equipment supplier). Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.

Respiratory protection

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>ammoniacal</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>no data available</td>
</tr>
<tr>
<td>Sublimation point</td>
<td>no data available</td>
</tr>
<tr>
<td>pH</td>
<td>10</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>Lower explosion limit/Upper explosion limit</td>
<td>no data available</td>
</tr>
<tr>
<td>Particle size</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>293.309 hPa</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>no data available</td>
</tr>
<tr>
<td>Density</td>
<td>1.09 g/cm³ @ 68 °F / 20 °C</td>
</tr>
<tr>
<td></td>
<td>9.09 lb/gal @ 68 °F / 20 °C</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No data</td>
</tr>
<tr>
<td>Water solubility</td>
<td>soluble</td>
</tr>
<tr>
<td>Solubility</td>
<td>no data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Stability
Stable.

Conditions to avoid
excessive heat

Incompatible products
Acids, Chlorine, nitrates, strong bases, Strong oxidizing agents

Hazardous decomposition products
acid vapors, Ammonia, carbon dioxide and carbon monoxide, nitrogen oxides (NOx)

Hazardous reactions
Product will not undergo hazardous polymerization.

Thermal decomposition
No data

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity
LD 50 Rat: 14,300 - 15,000 mg/kg

Acute inhalation toxicity
UREA
no data available

Acute dermal toxicity
12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability : Expected to be ultimately biodegradable

Bioaccumulation

UREA : Species: Green algae (Chlorella fusca vacuolata)
       Exposure time: 24 h
       Dose: 0.05 mg/l
       Bioconcentration factor (BCF): 11,700
       Method: Static

Ecotoxicity effects

Toxicity to fish : 96 h LC 50 : 9,100.00 mg/l

Toxicity to daphnia and other aquatic invertebrates.

Toxicity to algae

UREA : no data available

Toxicity to bacteria

UREA : no data available

Biochemical Oxygen Demand (BOD)

UREA : no data available

Chemical Oxygen Demand (COD)

UREA : no data available

Additional ecological information

UREA : no data available

13. DISPOSAL CONSIDERATIONS
Waste disposal methods
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

### 14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>REGULATION</th>
<th>ID NUMBER</th>
<th>PROPER SHIPPING NAME</th>
<th>*HAZARD CLASS</th>
<th>SUBSIDIARY HAZARDS</th>
<th>PACKING GROUP</th>
<th>MARINE POLLUTANT / LTD. QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. DOT - ROAD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. DOT - RAIL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. DOT - INLAND WATERWAYS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRANSPORT CANADA - ROAD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRANSPORT CANADA - RAIL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRANSPORT CANADA - INLAND WATERWAYS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERNATIONAL MARITIME DANGEROUS GOODS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65

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

SARA Hazard Classification

Acute Health Hazard

New Jersey RTK Label Information

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
</tr>
<tr>
<td>UREA</td>
<td>57-13-6</td>
</tr>
</tbody>
</table>

Pennsylvania RTK Label Information

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
</tr>
<tr>
<td>UREA</td>
<td>57-13-6</td>
</tr>
</tbody>
</table>

Notification status

US. Toxic Substances Control Act: y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA): y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act: y (positive listing)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand: y (positive listing)
Japan. Kashin-Hou Law List: y (positive listing)
Korea. Toxic Chemical Control Law (TCCL) List: y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act: y (positive listing)
China. Inventory of Existing Chemical Substances: y (positive listing)
Reportable quantity - Product
US. EPA CERCLA Hazardous Substances (40 CFR 302) 500000 lbs

Reportable quantity - Components
AMMONIUM HYDROXIDE ((NH4)(OH)) 1336-21-6 1000 lbs

<table>
<thead>
<tr>
<th></th>
<th>HMIS</th>
<th>NFPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Flammability</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Physical hazards</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Instability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Hazard</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).