1. IDENTIFICATION

GHS Product Identifier
ADBLUE

Company Name
VIVA ENERGY AUSTRALIA PTY LTD (FORMERLY: SHELL COMPANY OF AUSTRALIA LTD) (ABN 46 004 610 459)

Address
Level 16, 720 Bourke Street Docklands
Victoria 3008 Australia

Telephone/Fax Number
Tel: +61 (0)3 8823 4444
Fax: +61 (0)3 8823 4800

Emergency phone number
1800 651 818 (Australia) / Poisons Information Centre: 13 11 26 (Australia)

Recommended use of the chemical and restrictions on use
Additive to be used for injection into diesel exhaust systems.

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture
Not classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety Regulations, Australia.
Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredients determined not to be hazardous, including water</td>
<td></td>
<td>Balance</td>
</tr>
</tbody>
</table>

Preparation Description
Concentrated aqueous solution containing urea.

4. FIRST-AID MEASURES

Inhalation
If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.

Ingestion
Do not induce vomiting. Wash out mouth thoroughly with water. Seek medical attention.

Skin
Wash affected area thoroughly with soap and water. If symptoms develop seek medical attention.

Eye contact
If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing for
several minutes until all contaminants are washed out completely. If symptoms develop and/or persist seek medical attention.

**First Aid Facilities**
Eyewash and normal washroom facilities.

**Advice to Doctor**
Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

**Unsuitable Extinguishing Media**
Do not use water in a jet.

**Hazards from Combustion Products**
Non combustible material.

**Specific Hazards Arising From The Chemical**
This product is non combustible. However, following evaporation of aqueous component under fire conditions, the non-aqueous component may decompose and/or burn. When heated, releases ammonia and when heated to decomposition it emits toxic fumes of nitrogen oxides, ammonia and cyanuric acid.

**Decomposition Temperature**
Decomposes above 135°C.

**Precautions in connection with Fire**
Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

### 6. ACCIDENTAL RELEASE MEASURES

**Emergency Procedures**
Wear appropriate personal protective equipment and clothing to prevent exposure. Increase ventilation. If possible contain the spill. Place inert absorbent material onto spillage. Collect the material and place into a suitable labelled container. Do not dilute material but contain. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations. As a water based product, if spilt on electrical equipment the product will cause short-circuits.

### 7. HANDLING AND STORAGE

**Precautions for Safe Handling**
Avoid inhalation of vapours and mists, and skin or eye contact. Use only in a well ventilated area. Keep containers sealed when not in use. Prevent the build up of mists or vapours in the work atmosphere. Maintain high standards of personal hygiene i.e. Washing hands prior to eating, drinking, smoking or using toilet facilities.

**Conditions for safe storage, including any incompatibilities**
Store in a cool, dry, well-ventilated area, out of direct sunlight. Store in suitable, labelled containers. Keep containers tightly closed. Store away from incompatible materials. Ensure that storage conditions comply with applicable local and national regulations. Protect from freezing.

**Recommended Materials**
For containers or container linings, use mild steel or high density polyethylene.

**Unsuitable Materials**
PVC.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Occupational exposure limit values**
No exposure standards have been established for the mixture. However, over-exposure to some chemicals may result in enhancement of pre-existing adverse medical conditions and/or allergic reactions and should be kept to the least possible levels.

**Biological Limit Values**
No biological limits allocated.

**Appropriate Engineering Controls**
Use with good general ventilation. If mists or vapours are produced, local exhaust ventilation should be used.
Respiratory Protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection
Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection
Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection
Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Appearance</strong></td>
<td>Colourless liquid.</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Colourless</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Odourless</td>
</tr>
<tr>
<td><strong>Decomposition Temperature</strong></td>
<td>Decomposes above 135°C.</td>
</tr>
<tr>
<td><strong>Melting Point</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Freezing Point</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Boiling Point</strong></td>
<td>100°C (45% water and will boil at a 100°C)</td>
</tr>
<tr>
<td><strong>Solubility in Water</strong></td>
<td>Soluble</td>
</tr>
<tr>
<td><strong>Specific Gravity</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>9.8 - 10</td>
</tr>
<tr>
<td><strong>Vapour Pressure</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Vapour Density (Air=1)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Evaporation Rate</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Odour Threshold</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Partition Coefficient: n-octanol/water</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>1.090 g/cm³</td>
</tr>
<tr>
<td><strong>Flash Point</strong></td>
<td>Not available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Chemical Stability
Stable. Decomposes above 135°C.

Reactivity and Stability
Reacts with incompatible materials.

Conditions to Avoid
Extremes of temperature and direct sunlight.

Incompatible materials
Strong oxidising agents.

Hazardous Decomposition Products
Hazardous decomposition products are not expected to form during normal storage. At high temperatures, will decompose to ammonia and carbon dioxide. If burnt, will emit nitrogen oxides, ammonia and cyanuric acid.

Possibility of hazardous reactions
Not available

Hazardous Polymerization
Not available

11. TOXICOLOGICAL INFORMATION

Toxicology Information
The available toxicity data for material given below.

Acute Toxicity - Oral
LD50:(rat): > 5000 mg/kg

Acute Toxicity - Dermal
LD50:(rabbit): > 5000 mg/kg

Ingestion
Ingestion of this product may irritate the gastric tract causing nausea and vomiting.

Inhalation
Inhalation of product vapours may cause irritation of the nose, throat and respiratory system.

Skin
May be irritating to skin. The symptoms may include redness, itching and swelling.

Eye
May be irritating to eyes. The symptoms may include redness, itching and tearing.

Respiratory sensitisation
Not expected to be a respiratory sensitizer.

Skin Sensitisation
Not expected to be a skin sensitizer.

Germ cell mutagenicity
Not considered to be a mutagenic hazard.

Carcinogenicity
Not considered to be a carcinogenic hazard.

Reproductive Toxicity
Not considered to be toxic to reproduction.

STOT-single exposure
Not expected to cause toxicity to a specific target organ.

STOT-repeated exposure
Not expected to cause toxicity to a specific target organ.

**Aspiration Hazard**
Not expected to be an aspiration hazard.

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### 12. ECOLOGICAL INFORMATION

**Ecotoxicity**
The available ecological data is given below.

**Persistence and degradability**
Readily biodegradable.

**Mobility**
Large volumes may penetrate soil and could contaminate groundwater.

**Bioaccumulative Potential**
Not expected to bioaccumulate significantly.

**Other Adverse Effects**
Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential. Will exert oxygen demand when significant quantities enter watercourses and may cause damage to aquatic life.

**Environmental Protection**
Prevent this material entering waterways, drains and sewers.

**Acute Toxicity - Other Organisms**
LL/EL/IL50: > 100 mg/l(LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract).

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### 13. DISPOSAL CONSIDERATIONS

**Disposal considerations**
The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

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### 14. TRANSPORT INFORMATION

**Transport Information**

**Road and Rail Transport (ADG Code):**

**Marine Transport (IMO/IMDG):**
Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

**Air Transport (ICAO/IATA):**
Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

**U.N. Number**
None Allocated

**UN proper shipping name**
None Allocated

**Transport hazard class(es)**
None Allocated

**IMDG Marine pollutant**
No

**Transport in Bulk**
Not available

**Special Precautions for User**
Not available

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### 15. REGULATORY INFORMATION

**Regulatory Information**
Not classified as Hazardous according to the Globally Harmonised System of classification and labelling of chemicals (GHS) including Work, Health and Safety regulations, Australia.

Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) Poisons Schedule
Not Scheduled

16. OTHER INFORMATION

Date of preparation or last revision of SDS
SDS Reviewed: July 2016
Supersedes: April 2015

References
- Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.

- Standard for the Uniform Scheduling of Medicines and Poisons.

- Australian Code for the Transport of Dangerous Goods by Road & Rail.


- Workplace exposure standards for airborne contaminants, Safe work Australia.

- American Conference of Industrial Hygienists (ACGIH).

- Globally Harmonised System of classification and labelling of chemicals.

END OF SDS

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