Safety Data Sheet

Product: Adblue

Section 1. Identification

Product Details	
Product Identifier	Adblue
Product Code	8236
Recommended Use	Used for NOx reduction in exhaust gases from vehicles with diesel engines.
Manufacturer or Supplier Details	
Supplier	Royal Precision Lubricants Pty Ltd (ABN 72 155 989 165)
Address	40 Kimberly Road, DANDENONG SOUTH, Vic 3175
Telephone	+61 3 9768 2441
Fax	+61 3 9768 3325
Emergency Telephone Number	**+61 7 3203 2833**

Section 2. Hazard(s) Identification

GHS Classification

Not classified as hazardous under the Globally Harmonised System (GHS)

GHS Label Elements	
Hazard Pictogram	No hazard symbol required
Signal Word	No signal word
Hazard Statements	
Physical Hazards	Not classified as a physical hazard under GHS criteria
Health Hazards	Not classified as a health hazard under GHS criteria
Environmental Hazards	Not classified as an environmental hazard under GHS criteria
Precautionary Statements	
Prevention	Not applicable
Response	Not applicable
Storage	Not applicable
Disposal	Not applicable
Supplemental label elements	Not applicable
Other hazards which do not result in classification	Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. Used oil may contain harmful impurities.

Section 3. Composition and Information on Ingredients

Ingredients:

Ingredient	% (w/w)	CAS Number
UREA	30-40	57-13-6
WATER	>60	7732-18-5

Adblue

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First-aid measures

Eye contact:	If this product comes in contact with eyes: Wash out immediately with water. If irritation continues, seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel..
Inhalation:	If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary..
Skin contact:	If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritationIf persistent irritation occurs, obtain medical attention.
If swallowed:	Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor
Most important symptoms and effects, both acute and delayed:	Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Swallowing may result in nausea, vomiting and/or diarrhoea.
Protection of first-aiders:	When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
Notes to physician:	Treat symptomatically.

Section 5. Fire-fighting measures

Suitable extinguishing equipment:	The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas. Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances. In such an event consider: foam. dry chemical powder. carbon dioxide.
Specific hazards during firefighting:	Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
Fire / Explosion Hazard:	Non combustible. Not considered to be a significant fire risk. Expansion or decomposition on heating may lead to violent rupture of containers. Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). May emit acrid smoke. Decomposition may produce toxic fumes of: carbon dioxide (CO2)

	nitrogen oxides (NOx) other pyrolysis products typical of burning organic material.
HazChem Code:	None

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Avoid contact with skin and eyes, use appropriate personal protective equipment. Evacuate surrounding areas if necessary. Remove all ignition sources.
Environmental precautions:	Stop leak if without risk. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth or other appropriate barriers. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up:	Minor Spills Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. Wipe up. Place in a suitable, labelled container for waste disposal. Major Spills Minor hazard. Clear area of personnel. Alert Fire Brigade and tell them location and nature of hazard. Control personal contact with the substance, by using protective equipment as required. Prevent spillage from entering drains or water ways. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal. Wash area and prevent runoff into drains or waterways. If contamination of drains or waterways occurs, advise emergency services

Section 7. Handling and storage

Precautions for safe handling:	Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. When handling DO NOT eat, drink or smoke. Always wash hands with soap and water after handling. Avoid physical damage to containers. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. DO NOT allow clothing wet with material to stay in contact with skin.
Conditions for safe storage, including any incompatibilities:	Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS.
Suitable container	Polyethylene or polypropylene container. Packing as recommended by manufacturer

Adblue

Storage incompatibility

Avoid reaction with oxidising agents

Check all containers are clearly labelled and free from leaks.

Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.

Section 8. Exposure controls and personal protection

Biological limit values:	Not available
Engineering Controls:	General exhaust is adequate under normal operating conditions..
Personal Protective Equipment	
Respiratory Protection:	Normally not required, however if mists or vapours are generated in a poorly ventilated area an approved respirator with a replaceable vapour/mist filter is recommended.
Eye and Face Protection:	Safety glasses with side shields; or as required, Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin / Body Protection:	Always wear long sleeves and long trousers or coveralls, and enclosed footwear or safety boots when handling this product. It is recommended that chemical resistant gloves (e.g. PVC) be worn when handling this product.

Section 9. Physical and Chemical Properties

Appearance	Clear Liquid with a slightly ammoniacal odour, mixes with water
Melting Point	-11.5
Boiling Point	100
Vapour Pressure	Not available
Solubility in Water	Miscible
pH Value	Not applicable
Specific Gravity	0.925
Flash Point	>215°C
Flammability	Combustible Liquid
Auto Ignition Temperature	Not available
Flammable Limits	Not available

Section 10. Stability and Reactivity

Reactivity:	See section 7.
Chemical stability:	Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
Possibility of hazardous reactions:	See section 7.
Conditions to avoid:	See Section 7
Incompatible Materials:	See Section 7

Hazardous Decomposition Products:	See Section 5

Section 11. Toxicological information

Information on toxicological effects

Inhaled

Not normally a hazard due to non-volatile nature of product
The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that
suitable control measures be used in an occupational setting.

Ingestion
The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.

Skin Contact
The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

Eye The liquid may produce eye discomfort causing smarting, pain and redness.

Chronic
Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.
As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.
AdBlue
TOXICITY IRRITATION
Not Available Not Available

urea
TOXICITY IRRITATION
Oral (rat) LD50: 8471 mg/kg[2] Skin (human): 22 mg/3 d (I)- mild

water
TOXICITY IRRITATION
Oral (rat) LD50: >90000 mg/kg[2] Not Available

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS.
Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

UREA
Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high
levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation
is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating
substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.
The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness,

swelling, the production of vesicles, scaling and thickening of the skin.

For urea:

There is little data that relates urea to human health other than its use in dermatology and some more limited applications in clinical medicine. The use of urea (at 10% concentration or less) in ointments and creams to treat dry skin has been widespread, and long term follow-up studies have indicated that the substance is nonallergenic and virtually free from side effects. Among other clinical therapeutic uses, the treatment of inappropriate secretion of antidiuretic hormone (SIADH) should be noted, because its chronic form has involved long term oral administration of large amounts of urea. Most patients have tolerated urea well, although diarrhoea is sometimes reported after ingestion of 60-90 g/day. The possibility exists that infection of H. pylori in human stomach may aggravate local effects by urea because of ammonia generation.

Acute toxicity: The acute toxicity by urea is well delineated by the oral route. Toxicity is low in mammals other than ruminants, especially cattle, and sheep, in which the rumen micro-organisms contain urease activity and metabolise urea to ammonia at a high rate. In mice and rats, urea is of low toxicity even by the subcutaneous and intravenous route.

Repeated dose toxicity: No well-conducted repeated dose toxicity studies on urea were located. Chronic toxicity and carcinogenicity screening studies in mice and rats fed with 4500, 9000 or 45000 ppm in diet (up to about 6750 mg/kg body weight/day for mice and about 2250 mg/kg body weight/day for rats) did not uncover any treatment-related toxic syndromes in the various organs studied. Neither was any weight depression noted at terminal necropsy for animals of either sex or species at any dose levels. Thus the NOAELs were about 6750 mg/kg body weight/day for mice and about 2250 mg/kg bodyweight/day for rats.

Repeated dose toxicity studies with rats by skin application over 4 weeks and 25 weeks were conducted using urea ointment at 10%, 20% and 40% concentrations, and no consistent treatment-related toxic effects were found. The ointments were applied on a 20 cm2 area of the back skin; it is concluded that the repeated dose toxicity of urea by dermal route is low.

Reproductive/developmental toxicity: The studies cited under repeated dose toxicity did not indicate any toxic effects on the reproductive organs of mice and rats. No adequate teratogenicity/developmental toxicity studies of urea with mammals were located. According to one rat study, 50 g/kg body weight/day administered by gavage in two doses 12 hours apart for an average of 14 days did not cause outstanding (external) teratogenicity; the mean birthweight of the newborn was lower but the litter size greater. Injection of urea into the air sack of eggs shows that urea is toxic to the development of chick embryo. No NOAEL can be given for the reproductive/developmental toxicity of urea because appropriate studies are lacking. Genetic toxicity: Urea has been negative in several appropriately conducted bacterial mutagenicity tests. Urea caused DNA single strand breaks in mammalian cells in vitro and was clastogenic for mammalian cells in vitro and in vivo but only at concentrations much beyond the physiological range (about 50-100 higher concentrations than found in human blood). The mechanism of genotoxicity is probably non-specific (e.g. difference in osmotic pressure across the cell membrane).

NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.

Altered sleep time, change in motor activity, antipsychosis, dyspnea, methaemoglobinaemia, convulsions, lymphomas recorded. Carcinogenic by RTECS criteria.

WATER No significant acute toxicological data identified in literature search.

Section 12. Ecological information

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
urea	LC50	96	Fish	5mg/L	4
urea	EC50	48	Crustacea	3910mg/L	4
urea	EC50	96	Algae or other aquatic plants	42184.758mg/L	3
urea	BCF	24	Algae or other aquatic plants	0.05mg/L	4
urea	EC50	384	Crustacea	894.861mg/L	3
urea	NOEC	96	Crustacea	1000mg/L	4

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

For Urea: log Kow: -2.97 to -2.26; Henry's Law Constant: 4.4E-8 atm m3/mol. Urea is essentially non-volatile in solid form.

Atmospheric Fate: Urea will not evaporate from water to the atmosphere and is expected to be readily degraded by reactions with photochemically produced hydroxyl radicals; half-life is expected to be less than 1 day. Degradation of urea to ammonia causes NH3-emissions to the air.

Terrestrial Fate: The highest environmental exposure for urea is via fertilizer when 85 - 90% of urea is incorporated into the soil. Urea will hydrolyze intoammonium in a matter of days to several weeks. Urea is relatively leachable from the soil into surface water and groundwater especially if the soilsurface is saturated with water.

Aquatic Fate: Urea is very soluble in water and may rapidly biodegrade to a moderate extent. Urea is not expected to evaporate significantly. Urea can be leached relatively easily into the surface water and the groundwater. Degradation products (e.g. nitrate, nitrite and ammonium) can be measured after urea has undergone biodegradation.

Ecotoxicity: Urea is not likely to undergo bioaccumulation and generally has low acute ecotoxicity to organisms. The degradation product of urea, ammonia, is known to be toxic to all vertebrates; however, in neutral and acidic conditions, ammonia exists in the form of the ammonium ion. Urea may directly influence eutrophication in the environment and there is a pollution risk to groundwater when urea is used as a fertilizer, and a de icing agent at airports. Ecosystems may be affected following long-term use of urea in the control of soil acidification and by ammonia emissions to air.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient Persistence: Water/Soil Persistence: Air
urea LOW LOW
water LOW LOW

Bioaccumulative potential

Ingredient Bioaccumulation
urea LOW (BCF = 10)
water LOW (LogKOW = -1.38)

Mobility in soil

Ingredient Mobility
urea LOW (KOC = 4.191)
water LOW (KOC = 14.3)

Section 13. Disposal considerations

Disposal methods	
Waste from residues	Waste product should not be allowed to contaminate soil or ground water or be disposed of into the environment. Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
Special precautions for landfill or incineration	No additional special precautions identified.

Section 14. Transport Information

National Regulations	
ADG	Not regulated as a dangerous good.
International Regulations	
IATA-DGR	Not regulated as a dangerous good.
IMDG-DGR	Not regulated as a dangerous good.

Section 15. Regulatory Information

Standard Uniform Schedule of Medicine and Poisons
Not scheduled
Model Work Health and Safety Regulations – Scheduled Substances
Not listed
Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code)
Not regulated

Section 16. Other Information

Date of Issue	Wednesday, 27 October 2021
Abbreviations	ADG = Australian Dangerous Goods GHS = Globally Harmonised System of Classification and Labelling of chemicals IATA = International Air Transport Association IBC = Intermediate Bulk container IMDG = International Maritime Dangerous Goods STEL = Short term exposure limit

Adblue

TWA = time weighted average

Varies = may contain one or more of the following 101316-69-2, 101316-70-5, 101316-71-6, 101316-72-7, 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64741-97-5, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-64-9, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1, 74869-22-0, 90669-74-2

Other Information

The information contained in this SDS is as accurate as we can ascertain at this time. However, as the information is gleaned from a number of third party sources, Royal Precision Lubricants can make no warranty, guarantee or statement as to the reliability or completeness of the information. Royal Precision Lubricants will not accept liability of any damages whatsoever arising from the reliance of this information. It is the responsibility of the person handling the product to satisfy themselves as to the suitability and completeness of such information for their own use.

....End of SDS....