

Chemwatch Material Safety Data Sheet (REVIEW)
 Issue Date: 2-Jul-2012
 X9317SP

CHEMWATCH 22-2891
 Version No:3.1.1.1
 Page 1 of 7

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Highway Plus AdBlue Aqueous Urea Solution

SYNONYMS

ZFGCC36058, ZFGCC36069, ZFGCC36059, ZFGCC36060, ZFGCC36061

PRODUCT USE

Stabilized urea premix for use in reducing nitrogen oxides in diesel engines.

SUPPLIER

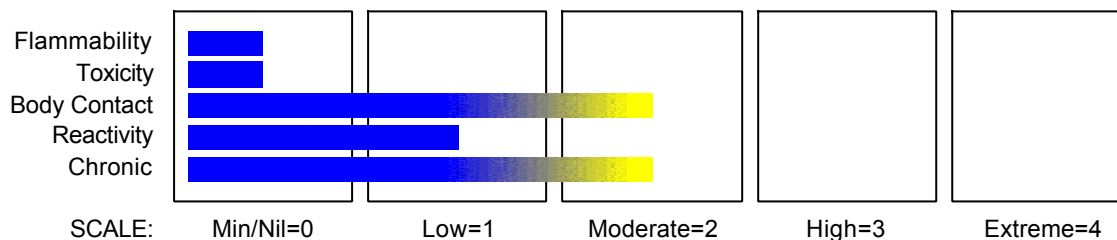
Company: Iveco Trucks Australia
 Address:
 Princes Highway
 Dandenong
 VIC, 3175
 Australia
 Telephone: +61 3 9238 2200
 Emergency Tel: **1800039 008(24hours)**
 Emergency Tel: **+61 3 9573 3112**

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

CHEMWATCH HAZARD RATINGS



RISK

- Cumulative effects may result following exposure*.
 - May produce discomfort of the eyes, respiratory tract and skin*.
- * (limited evidence).

SAFETY

- Do not breathe gas/fumes/vapour/spray.
- Avoid contact with skin.
- Avoid contact with eyes.
- Wear suitable gloves.
- Wear eye/face protection.
- In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
urea	57-13-6	30-50

Chemwatch Material Safety Data Sheet (REVIEW)

Issue Date: 2-Jul-2012

X9317SP

CHEMWATCH 22-2891

Version No:3.1.1.1

Page 2 of 7

Section 4 - FIRST AID MEASURES**SWALLOWED**

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE

■ 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.

SKIN

■ If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If fumes, aerosols or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES**EXTINGUISHING MEDIA**

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

FIRE FIGHTING

- 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.

FIRE/EXPLOSION HAZARD

- Non combustible.

• Not considered a significant fire risk, however containers may burn.

Decomposes on heating and produces toxic fumes of: carbon dioxide (CO₂), nitrogen oxides (NO_x), other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

In fire situation urea melts and flows, on further heating it decomposes giving off ammonia gas. Thermal and oxidative degradation products can include ammonia, biuret, and cyanuric acid,.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

HAZCHEM

None

Section 6 - ACCIDENTAL RELEASE MEASURES**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.

continued...

Chemwatch Material Safety Data Sheet (REVIEW)
 Issue Date: 2-Jul-2012
 X9317SP

CHEMWATCH 22-2891
 Version No:3.1.1.1
 Page 3 of 7

Section 6 - ACCIDENTAL RELEASE MEASURES

MAJOR SPILLS

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

SUITABLE CONTAINER

- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

- Urea:
- forms anhydrous ammonia and nitrous vapours on contact with hot surfaces
 - reacts violently with strong oxidisers, chlorine, inorganic chlorides, chlorites, chromyl chloride, dichromates, dicyanofurazan, fluorine, gallium perchlorate, hydrogen peroxide, lead dioxide, nitrates, nitrites, permanganates, perchlorates, titanium tetrachloride, triethylenetetramine
 - ignites or explodes on reaction with ammonium nitrate, chromyl chloride, nitrosyl perchlorate, phosphorus pentachloride
 - may form highly explosive nitrogen trichloride on contact with hexanitroethane, perchloryl fluoride, sodium perchlorate, trichloroisocyanuric acid, hypochlorites and other chlorinating agents.
 - Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- urea: CAS:57- 13- 6

MATERIAL DATA

HIGHWAY PLUS ADBLUE AQUEOUS UREA SOLUTION:

UREA:

For urea:

CEL TWA: 10 mg/m3 (compare WEEL-TWA)

Even if individuals inhaled 10 mg/m3 of urea through the whole workday, they would only inhale 100 mg/day. This increment, even if totally absorbed, would be insignificant when compared to the 30 g/day normal excretion rate.

PERSONAL PROTECTION



Chemwatch Material Safety Data Sheet (REVIEW)

Issue Date: 2-Jul-2012
X9317SP

CHEMWATCH 22-2891

Version No:3.1.1.1

Page 4 of 7

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

RESPIRATOR

• Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

- Safety glasses with side shields
- 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 lens 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].

HANDS/FEET

- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
 - frequency and duration of contact,
 - chemical resistance of glove material,
 - glove thickness and
 - dexterity.
- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.

OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.

ENGINEERING CONTROLS

■ Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Clear colourless slightly alkaline liquid with an ammoniacal odour; mixes with water.

PHYSICAL PROPERTIES

Liquid.
Mixes with water.

State	Liquid	Molecular Weight	Not Applicable
Melting Range (°C)	Not Available	Viscosity	Not Available
Boiling Range (°C)	Not Available	Solubility in water (g/L)	Miscible
Flash Point (°C)	Not Applicable	pH (1% solution)	Not Available
Decomposition Temp (°C)	Not Available	pH (as supplied)	9.5
Autoignition Temp (°C)	Not Applicable	Vapour Pressure (kPa)	Not Available
Upper Explosive Limit (%)	Not Applicable	Specific Gravity (water=1)	1.094
Lower Explosive Limit (%)	Not Applicable	Relative Vapour Density (air=1)	Not Available
Volatile Component (%vol)	Not Available	Evaporation Rate	Not Available

Chemwatch Material Safety Data Sheet (REVIEW)

Issue Date: 2-Jul-2012

X9317SP

CHEMWATCH 22-2891

Version No:3.1.1.1

Page 5 of 7

Section 10 - STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Urea may cause irritation to the digestive tract, nausea, vomiting, diarrhoea, salt depletion, headache and confusion.

EYE

- The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

SKIN

- 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.

Urea is a common ingredient of skin ointment and acts to soften dry scaly skin. Prolonged skin contact may cause stinging sensation, irritation and skin inflammation in some people. High doses in clinical application has caused nausea and vomiting. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

- There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Urea is generally regarded as non-harmful in small amounts. However, exposure should be kept as low as practicable. People with asthma should avoid prolonged contact with urea dust. Urea may cause irritation of the respiratory tract, causing coughing and shortness of breath. Urea may be absorbed into the bloodstream, producing symptoms similar to those caused by swallowing.

CHRONIC HEALTH EFFECTS

- Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Urea is a body metabolic waste but high exposure to it was reported to cause emphysema, disturbances in protein metabolism and chronic weight loss. However skin exposure of rats produced no reddening but low brain and prostate weights were recorded. It should be avoided in those with kidney or liver impairment.

TOXICITY AND IRRITATION

- 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.

Section 12 - ECOLOGICAL INFORMATION

No data

Ecotoxicity Ingredient

urea

Persistence:
Water/Soil
LOW

Persistence: Air
No Data
Available

Bioaccumulation
LOW

Mobility
HIGH

continued...

Chemwatch Material Safety Data Sheet (REVIEW)

Issue Date: 2-Jul-2012

X9317SP

CHEMWATCH 22-2891

Version No:3.1.1.1

Page 6 of 7

Section 12 - ECOLOGICAL INFORMATION

Section 13 - DISPOSAL CONSIDERATIONS

■ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction.
- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION**HAZCHEM:**

None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION**POISONS SCHEDULE**

None

REGULATIONS**Regulations for ingredients****urea (CAS: 57-13-6) is found on the following regulatory lists;**

"Australia - Victoria Occupational Health and Safety Regulations - Schedule 9: Materials at Major Hazard Facilities (And Their Threshold Quantity) Table 2", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "International Fragrance Association (IFRA) Survey: Transparency List", "OECD List of High Production Volume (HPV) Chemicals"

No data for Highway Plus AdBlue Aqueous Urea Solution (CW: 22-2891)**Section 16 - OTHER INFORMATION**

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written

continued...

Highway Plus AdBlue Aqueous Urea Solution

Hazard Alert Code: MODERATE

Chemwatch Material Safety Data Sheet (REVIEW)

Issue Date: 2-Jul-2012

X9317SP

CHEMWATCH 22-2891

Version No:3.1.1.1

Page 7 of 7

Section 16 - OTHER INFORMATION

permission from CHEMWATCH. TEL (+61 3) 9572 4700.

Issue Date: 2-Jul-2012

Print Date: 13-Jul-2012

This is the end of the MSDS.