

#### 1. IDENTIFICATION

**Product Name** Urea Solution (>25%)

**Other Names** Liquid Urea; Urea 50% Liquid; Urea Solution 45%

Uses For NOx reduction in exhaust gases from vehicles with diesel engines.

**Chemical Family** No Data Available **Chemical Formula** Unspecified **Chemical Name Urea Solution Product Description** No Data Available

**Contact Details of the Supplier of this Safety Data Sheet** 

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### **Emergency Contact Details**

For emergencies only; DO NOT contact these companies for general product advice.

Organisation Location Telephone Poisons Information Centre Westmead NSW 1800-251525 131126 Chemcall Australia 1800-127406 +64-4-9179888 +64-4-9179888 Chemcall Malaysia Chemcall New Zealand 0800-243622 +64-4-9179888 National Poisons Centre New Zealand 0800-764766 CHEMTREC USA & Canada 1-800-424-9300 CN723420

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### 2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled



#### **Globally Harmonised System**

Hazard Classification NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of

Chemicals (GHS)

Signal Word None

### **National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods

by Road & Rail (ADG Code)

#### Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification NOT hazardous according to the criteria of Safe Work Australia under Model WHS Regulations

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Urea	CH4N2O	57-13-6	>25 %
Water	H20	7732-18-5	Balance %

#### 4. FIRST AID MEASURES

#### Description of necessary measures according to routes of exposure

**Swallowed** IF SWALLOWED: Rinse mouth, then give a glass of water to drink. If vomiting occurs, give further water. Get medical

advice/attention.

**Eye** IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting

the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye

irritation persists, get medical advice/attention.

**Skin** IF ON SKIN: Remove contaminated clothing and shoes immediately. Flush skin with running water/shower. If skin irritation

occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.

**Inhaled** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms

persist, get medical advice/attention.

Advice to Doctor Treat symptomatically.

Medical Conditions Aggravated by No information available.

**Exposure** 

#### **5. FIRE FIGHTING MEASURES**

General Measures Alert Fire Brigade and tell them location and nature of hazard. If safe to do so, remove containers from path of fire; Do

NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location.

Flammability Conditions Non-combustible material; However, evaporation of water from the mixture caused by the heat of nearby fire, may

produce floating layers of combustible substances.

**Extinguishing Media** If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. 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.

Fire and Explosion Hazard Not considered to be a significant fire risk. Expansion or decomposition on heating may lead to violent rupture of

containers.

Hazardous Products of

Combustion

Decomposes on heating emitting toxic fumes, including those of ammonia, oxides of Carbon, oxides of Nitrogen,

Cyanuric acid.

Special Fire Fighting Instructions Contain runoff from fire control or dilution water - Runoff may pollute waterways.

Personal Protective Equipment Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may

provide limited protection. Equipment should be thoroughly decontaminated after use.

Flash Point
No Data Available
Lower Explosion Limit
No Data Available
Upper Explosion Limit
No Data Available
Auto Ignition Temperature
No Data Available
Hazchem Code
No Data Available

#### **6. ACCIDENTAL RELEASE MEASURES**

General Response Procedure Ensure adequate ventilation - Ventilate enclosed spaces before entering. Do not touch or walk through spilled material -

Slippery when spilt. Avoid accidents, clean up immediately! Avoid breathing vapours and contact with eyes, skin and

clothing.

Clean Up Procedures Absorb with earth, sand or other non-combustible material. Collect and seal in properly labelled containers for disposal

(see SECTION 13).

**Containment** Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.

**Decontamination** Wash area with excess water.

**Environmental Precautionary** 

Measures

Prevent run-off into drains and waterways. If contamination of sewers or waterways has occurred advise local emergency

services.

Evacuation Criteria Spill or leak area should be isolated immediately. Keep unauthorised personnel away.

#### 7. HANDLING AND STORAGE

Handling Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure

adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing mist/vapours/aerosols and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as

required (see SECTION 8).

Storage Storage Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers closed when not in use - check

regularly for leaks. Protect containers against physical damage. Store away from foodstuff containers and incompatible

materials (see SECTION 10).

**Container** Keep in the original container. Check all containers are clearly labelled and free from leaks.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**General** No value assigned for this specific material by Safe Work Australia.

**Emergency Limits:** 

- TEEL-1: 10 mg/m3; TEEL-2: 10 mg/m3; TEEL-3: 1,700 mg/m3.

**Exposure Limits** No Data Available

**Biological Limits** No information available.

**Engineering Measures** A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust

ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing

dispersion of it into the general work area.

Personal Protection Equipment - Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Suitable mist

respirator (refer to AS/NZS 1715 & 1716).

- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side

shields or, as required, chemical goggles.

- Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. PVC.

- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, PVC

apron. Wear safety footwear or safety gumboots, e.g. Rubber.

Special Hazards Precaustions This product when stored in a confined, unventilated space/hold can give off ammonia or other odour and lead to the

depletion of oxygen within this space and other confined spaces. It is therefore essential that ventilation is carried out

prior to entry.

Work Hygienic Practices Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the

toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid
Appearance Liquid

**Odour** Slightly ammoniacal

**Colour** Clear

pH 9.8 - 10 (10% solution)
Vapour Pressure 6.4 kPa (@ 40 °C)
Relative Vapour Density No Data Available

Boiling Point 100 °C

Melting Point -11 °C

Freezing Point -11 °C

Solubility Miscible in water
Specific Gravity 1.09 (Water = 1)
Flash Point No Data Available
Auto Ignition Temp No Data Available
Evaporation Rate No Data Available
Bulk Density No Data Available
Corrosion Rate No Data Available

**Decomposition Temperature** 100 °C

Density No Data Available Specific Heat No Data Available **Molecular Weight** No Data Available **Net Propellant Weight** No Data Available **Octanol Water Coefficient** No Data Available **Particle Size** No Data Available **Partition Coefficient** No Data Available **Saturated Vapour Concentration** No Data Available Vapour Temperature No Data Available Viscosity No Data Available

**Volatile Percent** No Data Available **VOC Volume** No Data Available

**Additional Characteristics** No information available.

**Potential for Dust Explosion** Not applicable.

**Fast or Intensely Burning** 

Characteristics

No information available.

Flame Propagation or Burning

**Rate of Solid Materials** 

No information available.

No information available.

Non-Flammables That Could Contribute Unusual Hazards to a

Fire

**Properties That May Initiate or Contribute to Fire Intensity** 

Non-combustible material; However, evaporation of water from the mixture caused by the heat of nearby fire, may

produce floating layers of combustible substances.

**Reactions That Release Gases or** 

**Vapours** 

Decomposes on heating emitting toxic fumes, including those of ammonia, oxides of Carbon, oxides of Nitrogen,

Cyanuric acid.

**Release of Invisible Flammable** 

Vapours and Gases

No information available.

#### 10. STABILITY AND REACTIVITY

**General Information** May react violently with nitric acid or sodium hypochlorite. Reacts with halogens. **Chemical Stability** Product is considered stable; Unstable in the presence of incompatible materials.

**Conditions to Avoid** Avoid physical damage to containers. Avoid contact with other chemicals.

**Materials to Avoid** Incompatible/reactive with nitric acid, sodium hypochlorite, halogens; strong acids, acid chlorides, acid anhydrides and

chloroformates.

**Hazardous Decomposition** 

**Products** 

Decomposes on heating emitting toxic fumes, including those of ammonia, oxides of Carbon, oxides of Nitrogen,

Cyanuric acid.

**Hazardous Polymerisation** Hazardous polymerisation will not occur.

#### 11. TOXICOLOGICAL INFORMATION

**General Information** Information on possible routes of exposure:

- Ingestion: Not classified as harmful by ingestion. No adverse effects expected; however, large amounts may cause

nausea and vomiting. - Eye contact: May be an eye irritant. The liquid may produce eye discomfort, causing smarting, pain and redness.

- 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.

- Inhalation: Not normally a hazard due to non-volatile nature of the product. Breathing in mists or aerosols may produce

respiratory irritation.

Chronic effects: Long-term exposure to the product is not thought to produce chronic effects adverse to the health.

Acute

Ingestion Acute toxicity (Oral):

INGREDIENT: Urea (CAS No. 57-13-6):

- LD50, Rat: 8,471 mg/kg

**Carcinogen Category** None

#### 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Aquatic toxicity:

INGREDIENT: Urea (CAS No. 57-13-6):

- LC50, Fish: 5 mg/L (96 h).

- EC50, Crustacea: 3,910 mg/L (48 h).

- EC50, Algae or other aquatic plants: 42,184.758 mg/L (96 h).

- EC50, Crustacea: 894.861 mg/L (384 h). - NOEC, Crustacea: 1,000 mg/L (96 h).

Persistence/Degradability INGREDIENT: Urea (CAS No. 57-13-6):

- Low persistence in water/soil.

- Low persistence in air.

Mobility INGREDIENT: Urea (CAS No. 57-13-6):

- Low mobility in soil (KOC = 4.191).

Environmental Fate Urea may directly influence eutrophication in the environment and there is a pollution risk to groundwater when urea is

used as a fertiliser, and a deicing 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.

**Bioaccumulation Potential** INGREDIENT: Urea (CAS No. 57-13-6):

- Low bioaccumulative potential (BCF = 10).

**Environmental Impact** No Data Available

#### 13. DISPOSAL CONSIDERATIONS

General Information Dispose of contents/container in accordance with local/regional/national regulations. Recycle wherever possible. Dispose

of by burial in a land-fill specifically licensed to accept chemical and/or pharmaceutical wastes, or by incineration in a

licensed apparatus (after admixture with suitable combustible material).

Special Precautions for Land Fill Contaminated packaging: Decontaminate empty containers. Observe all label safeguards until containers are cleaned

and destroyed.

## 14. TRANSPORT INFORMATION

## Land Transport (Australia)

ADG Code

Proper Shipping Name
Urea Solution (>25%)
Class
No Data Available
Subsidiary Risk(s)
No Data Available
No Data Available
UN Number
No Data Available

Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name Urea Solution (>25%)
Class No Data Available
Subsidiary Risk(s) No Data Available

No Data Available No Data Available No Data Available No Data Available

**Special Provision** No Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

## Land Transport (New Zealand)

NZS5433

**UN Number** 

**Pack Group** 

Hazchem

Proper Shipping Name
Urea Solution (>25%)
Class
No Data Available
Subsidiary Risk(s)
No Data Available
No Data Available
UN Number
No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

## **Land Transport (United States of America)**

**US DOT** 

Proper Shipping Name
Urea Solution (>25%)
Class
No Data Available
Subsidiary Risk(s)
No Data Available
No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

**Comments** NON-DANGEROUS GOODS: Not regulated for LAND transport.

### **Sea Transport**

**IMDG** Code

**Proper Shipping Name** Urea Solution (>25%) Class No Data Available Subsidiary Risk(s) No Data Available **UN Number** No Data Available Hazchem No Data Available **Pack Group** No Data Available **Special Provision** No Data Available **EMS** No Data Available

Marine Pollutant No

Comments NON-DANGEROUS GOODS: Not regulated for SEA transport.

**Air Transport** 

IATA DGR

Proper Shipping Name Urea Solution (>25%)
Class No Data Available

Subsidiary Risk(s)No Data AvailableUN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

Comments NON-DANGEROUS GOODS: Not regulated for AIR transport.

#### **National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods

by Road & Rail (ADG Code)

#### 15. REGULATORY INFORMATION

General Information No Data Available

Poisons Schedule (Aust) Not Scheduled

## **Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code Not Hazardous

## **National/Regional Inventories**

Australia (AIIC) Listed

Canada (DSL) Listed

Canada (NDSL) Not Determined

China (IECSC) Listed

Europe (EINECS) Listed

Europe (REACh) Not Determined

Japan (ENCS/METI) Listed

Korea (KECI) Listed

Malaysia (EHS Register) Not Determined

New Zealand (NZIoC) Listed

Philippines (PICCS) Listed

Switzerland (Giftliste 1) Not Determined

**Switzerland (Inventory of Notified** 

Substances)

Not Determined

Taiwan (NCSR) Listed
USA (TSCA) Listed

#### 16. OTHER INFORMATION

#### **Related Product Codes**

UREATE1018, UREATE1019, UREATE1132, UREATE1801, UREATE1860, UREATE1861, UREATE1862, UREATE1863, UREATE1864, UREATE1865, UREATE1866, UREATE1867, UREATE1868, UREATE1902, UREATE1903, UREATE1906, UREATE1933, UREATE1950, UREATE1958, UREATE1960, UREATE1961, UREATE1962, UREATE1963, UREATE1964, UREATE1965, UREATE1966, UREATE2032, UREATE2040, UREATE2041, UREATE2042, UREATE2043, UREATE2044, UREATE2045, UREATE2046, UREATE2047, UREATE2048, UREATE2049, UREATE2050, UREATE2132, UREATE2232, UREATE2233, UREATE2400, UREATE2401, UREATE2402, UREATE2403, UREATE2404, UREATE2405, UREATE2406, UREATE2407, UREATE2408, UREATE2409, UREATE2410, UREATE2411, UREATE2420, UREATE2421, UREATE2422, UREATE2423, UREATE2424, UREATE2425, UREATE2426, UREATE2427, UREATE2428, UREATE2429, UREATE2430, UREATE2545, UREATE2550, UREATE2552, UREATE2553, UREATE2554, UREATE2555, UREATE2560, UREATE2700, UREATE2701, UREATE2702, UREATE2703, UREATE2704, UREATE2705, UREATE2706, UREATE2707, UREATE2708, UREATE2709, UREATE2710, UREATE2711, UREATE2720, UREATE2721, UREATE2722, UREATE2723, UREATE2724, UREATE2725, UREATE2726, UREATE2727, UREATE2728, UREATE2729, UREATE2730, UREATE2740, UREATE2741, UREATE2742, UREATE2743, UREATE2744, UREATE2745, UREATE2746, UREATE2747, UREATE2748, UREATE2749, UREATE2750, UREATE2751, UREATE2752, UREATE2753, UREATE2754, UREATE2755, UREATE2756, UREATE2757, UREATE2758, UREATE2760, UREATE2761, UREATE2762, UREATE2763, UREATE2764, UREATE2765, UREATE2766, UREATE2767, UREATE2768, UREATE2769, UREATE2780, UREATE2781, UREATE2782, UREATE2783, UREATE2784, UREATE2785, UREATE2786, UREATE2787, UREATE2788, UREATE2789, UREATE2790, UREATE2791, UREATE2792, UREATE2793, UREATE2794, UREATE2900, UREATE2901, UREATE3032, UREATE3741, UREATE4200, UREATE4201, UREATE4202, UREATE4203, UREATE4204, UREATE4205, UREATE4206, UREATE4207, UREATE4208, UREATE4209, UREATE4210, UREATE4211, UREATE4212, UREATE4230, UREATE4231, UREATE4232, UREATE4233, UREATE4234, UREATE4235, UREATE4236, UREATE4237, UREATE4238, UREATE4239, UREATE4240, UREATE4250, UREATE4251, UREATE4252, UREATE4253, UREATE4254, UREATE4255, UREATE4256, UREATE4257, UREATE4258, UREATE4259, UREATE4360, UREATE4332, UREATE4340, UREATE4341, UREATE4342, UREATE4343, UREATE4345, UREATE4346, UREATE4347, UREATE4348, UREATE4349, UREATE4350, UREATE4360, UREATE4361, UREATE4362, UREATE4363, UREATE4364, UREATE4365, UREATE4366, UREATE4367, UREATE4368, UREATE4369, UREATE4370, UREATE4840, UREATE4850, UREATE4851, UREATE4852, UREATL3000, UREATL3001, UREATL4000, UREATL5000, UREATL5100, UREATL5200, UREATL6000

Revision 4

**AICS** Australian Inventory of Chemical Substances

atm Atmosphere

**CAS** Chemical Abstracts Service (Registry Number)

cm² Square CentimetresCO2 Carbon Dioxide

**COD** Chemical Oxygen Demand **deg C (°C)** Degrees Celcius

EPA (New Zealand) Environmental Protection Authority of New Zealand

deg F (°F) Degrees Farenheit

**g** Grams

g/cm³ Grams per Cubic Centimetre

g/I Grams per Litre

**HSNO** Hazardous Substance and New Organism **IDLH** Immediately Dangerous to Life and Health **immiscible** Liquids are insoluable in each other.

inHg Inch of MercuryinH2O Inch of WaterK Kelvin

kg Kilogram

kg/m³ Kilograms per Cubic Metre

**Ib** Pound

**LC50** LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

**LD50** LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

Itr or L Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH20 Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

**NIOSH** National Institute for Occupational Safety and Health

**NOHSC** National Occupational Heath and Safety Commission

**OECD** Organisation for Economic Co-operation and Development

Oz Ounce

**PEL** Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

**R** Rankine

**RCP** Reciprocal Calculation Procedure

**STEL** Short Term Exposure Limit

**TLV** Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

**UN** United Nations

wt Weight