TENNANTS DISTRIBUTION LIMITED
HAZELBOTTOM ROAD, CHEETHAM, MANCHESTER M8 0GR TEL 44(0)161 205 4454 FAX 44(0)161 203 4298

PRODUCT SPECIFICATION

Product Name	NAPA® AdBlue®
Specification Reference	NAPA/1 (20/09/0082001)

SALES SPECIFICATION

Characteristics	Unit	Min	Max	Typical Value
Urea Content	Weight %	31.8	33.2	32.5
Density	g/cm^3	1.087	1.093	1.0895
Refractive Index at 20°C		1.3814	1.3843	1.3829
Alkalinity as NH^3	%	-	0.2	
Biuret	%	-	0.3	
Aldehydes	mg/kg	-	5	
Insolubles	mg/kg	-	20	
Phosphate (PO_4)	mg/kg	-	0.5	
Calcium	mg/kg	-	0.5	
Iron	mg/kg	-	0.5	
Copper	mg/kg	-	0.2	
Zinc	mg/kg	-	0.2	
Chromium	mg/kg	-	0.2	
Nickel	mg/kg	-	0.2	
Aluminium	mg/kg	-	0.5	
Magnesium	mg/kg	-	0.5	
Sodium	mg/kg	-	0.5	
Potassium	mg/kg	-	0.5	

NAPA® AdBlue® conforms to DIN 70070 and ISO 22241 and is supplied ready to use.

Storage

To maintain the product quality it is recommended that AdBlue® is stored below 25°C and out of direct sunlight. Do not store or allow product to come into contact with mild steel, aluminium, brass, copper or alloys. These will damage the catalyst system.

Shelf Life (in accordance with ISO 22241-3)

Constant ambient storage temperature (°C)	Minimum shelf life (months)
≤10	36
≤25	18
≤30	12
≤35	6
≥35	Significant decomposition test before use

Freezing

Adblue® will begin to freeze at -11°C; this does not affect the product quality or strength. The liquid phase of a partially frozen solution will still be at the required concentration and may continue to be used. The remaining frozen portion may be used after allowing to thaw

NOTES

Exclusion of Liability

Information contained in this publication is accurate to the best of the knowledge and belief of Tennants.

Any information or advice obtained from Tennants otherwise than by means of this publication and whether relating to Tennants materials or other materials, is also given in good faith. However, it remains at all times the responsibility of the customer to ensure that Tennants materials are suitable for the particular purpose intended.

Tennants accepts no liability whatsoever (except as otherwise provided by law) arising out of the use of information supplied, the application, adaptation or processing of the products described herein, the use of other materials in lieu of Tennants materials or the use of Tennants materials in conjunction with such other materials.

Health and Safety

A Material Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on the handling precautions and emergency procedures. This must be consulted fully before handling, storage and use.

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

1.1 Product Identifier

Trade Name	NAPA® AdBlue®
CAS Number	57-13-6
EINECS Number	200-315-3
REACH Registration Number	01-2119463277-33-xxxx (Urea)
Composition	Mixture of urea and water

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use(s): NO_x reducing agent, for injection into exhaust system of diesel engines. Industrial use for flue gas NO_x reduction.
Uses advised against: None

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone number

Tel: 44(0)844 335 0001 (24 hours)

2. HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture
According to Regulation (EC) No. 1272/2008 (CLP).
This product is not classified according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC
Not classified

Information concerning particular hazards for human health and environment:
See section 16 for full text of any R phrases or H statements above see section 11 for more details on any health effects or symptoms.

2.2 Label elements
Labelling according to Regulation (EC) 1272/2008: None
Hazard pictograms: None
Signal word: None
Hazard statements: None

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable
vPvB: Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterisation: Mixture
CAS No.: 57-13-6
Description: Urea
Identification Numbers:
EC Number: 200-315-5
Chemical characterisation: Mixtures
Description: An aqueous solution of urea
Dangerous components: There are no 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. Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

4.1 Description of first aid measures
General advice: No special measures required.

Inhalation
Avoid inhalation of vapour mist or spray. If inhaled, supply fresh air. Get medical attention in case of complaints.

Skin contact
Immediately rinse with water. If skin irritation continues, get medical attention.

Eye contact
Check for and remove any contact lenses. Rinse opened eye for several minutes under running water. Get medical attention if irritation occurs.

Ingestion
Rinse out mouth and then drink plenty of water. Do not induce vomiting: call for medical help immediately.

Protection of first-aiders
No action shall be taken involving any personal risk or without suitable training.

4.2 Most import symptoms and effects, both acute and delayed
Potential acute health effects:
Eye contact: No known significant effects or critical hazards.
Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

4.3 Indication of any immediate medical attention and special treatment needed
Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media
Suitable extinguishing media: Use fire extinguishing methods suitable to surrounding conditions.
Unsuitable extinguishing media: Not known

5.2 Special hazards arising from the substance or mixture
Hazards from the substance or mixture: In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products: Decomposition products may include the following materials carbon dioxide, carbon monoxide, nitrogen oxides and ammonia. Avoid breathing dusts, vapours or fumes from burning materials. In case of inhalation of decomposition products in a fire, symptoms may be delayed.

5.3 Advice for fire-fighters
Special precautions for fire fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions
Do not allow to enter sewers/surface or ground water.

6.3 Methods and material for containment and cleaning up
Absorb with liquid binding material (sand, diatomite, acid binders, universal binders, sawdust). Send for recovery or disposal in suitable receptacles.

6.4 Reference to other sections
No dangerous substances are released. See section 7 for information on safe handling. See section 8 for information on personal protection equipment. See section 13 for disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Prevent formation of aerosols. Ensure good ventilation in the workplace.
Technical measures/ Precautions: Store in a closed, dry room with good ventilation at temperature not below -11 ºC and not above +30 ºC. Instructions on the limit quantity of the substance/preparation to be stored under the conditions specified: no.
Information about fire and explosion protection: No special measures required

7.2 Conditions for safe storage, including any incompatibilities

Storage:
Keep containers closed until required. Store away from oxidising agents. See section 10. Protect from frost, store in cool, dry conditions in well-sealed receptacles.

7.3 Specific end use(s)

Store out of direct sunlight and below 30ºC to keep product in best condition. For use in catalytic SCR systems the product must not be stored in, or come into contact at any point with: mild steel, aluminium, brass or copper as these will poison the catalyst.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical facilities: No further data, see section 7.

8.1 Control Parameters

Ingredients with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

8.2 Exposure controls

Personal protective equipment:
Select PPE appropriate for the operations taking place into account the product properties.

General protective and hygiene measures

Avoid close or long term contact with the skin. Do not eat, drink, smoke or sniff while working. Avoid contact with the skin. Do not inhale gases, fumes or aerosols. Wash hands before breaks and at the end of work.

Eye/face protection

Safety glasses.

Hand protection

Wear gloves impermeable to the product.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Recommended: Filter P2 (EN143)

Body protection

Protective work clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Fluid
Colour	Clear
Odour	Ammonia like or odourless
pH-value at 20ºC	8-10
Melting point (ºC)	-11ºC
Boiling point (ºC)	100ºC
Decomposition temperature	Not determined
Self-igniting	Product is not self-igniting
Danger of explosion	Product does not present an explosion hazard
Flash point	Not applicable
Flammability	Not flammable
Explosion limits	Not determined
Vapour pressure at 20ºC	23 hPa
Density at 20ºC	1.087 to 1.093 g/cm^3
Solubility in/miscibility with water	Fully miscible
Partition coefficient (n-octanol/water)	Not determined. Inorganic substance.
Viscosity	1.4 mPa.s @20ºC

10. STABILITY AND REACTIVITY

10.1 Reactivity
Stable under regular conditions.

10.2 Chemical stability
Stable under regular conditions.
Thermal decomposition/conditions to be avoided
The residue upon evaporation decomposes on heating above 220°C producing toxic gases.

10.3 Possibility of hazardous reactions
Reacts violently with strong oxidants, nitrates, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.

10.4 Conditions to avoid
For intended use, avoid contamination with metal, dust or organic matter.

10.5 Incompatible materials
Strong oxidising agents, nitrate, chlorites and perchlorates. For intended use, the product must not be in contact with mild steel, aluminium, brass, copper or alloys as these can damage the catalyst system.

10.6 Hazardous decomposition products
Under normal conditions none.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Acute oral toxicity: LD50: 8471 mg/kg bw (for urea).

Acute dermal toxicity: LD50: 8200 mg/kg bw (for urea).

Acute inhalation toxicity: not relevant.

Skin irritation or/and sensitization: Not irritating. Not sensitizing effect known.

Mutagenicity: Ames-test: negative

Carcinogenicity: Ames-test: negative

Reproductive toxicity: Ames-test: negative

Specific toxicity for particular organ (STOT) (one time effect): None.

Specific toxicity for particular organ (STOT) (repeated effect): None.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Aquatic toxicity
57-13-6 Urea
EC50 >10000 mg/kg (daphnia)

12.2 Persistence and degradability
Biodegradable

12.3 Bioaccumulative potential
Product is not expected to bioaccumulate

12.4 Mobility in soil
No further relevant information available

12.5 Results of PBT and vPvB
PBT: Not applicable
vPvB: Not applicable

12.6 Other adverse effects
No further relevant information available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Recommendation
Recommended Hierarchy of Controls:
Minimise waste
Reuse if not contaminated
Recycle, e.g. dilution and use as fertilizer
Safe disposal (if all else fails).
European waste catalogue
Waste code 06 10 99 (wastes not otherwise specified)

13.2 Uncleaned packaging
Recommendation: Disposal must be made according to official regulations
Recommended cleansing agents: Water if necessary together with cleansing agents

14. TRANSPORT INFORMATION

This product is not classed as hazardous for transport (ADR, RID, IMDG).

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV - List of substances subject to authorization Substances of very high concern: Not applicable.
Other EU regulations
Europe inventory: All components are listed or exempted.
Seveso II Directive
This product is not controlled under the Seveso II Directive. National regulations
Notes: To our knowledge no other country or state specific regulations are applicable.

15.2 Chemical safety assessment: A chemical safety assessment has not been carried out.

16. OTHER INFORMATION

Abbreviations
EC50: median effective concentration
LC50: median lethal concentration
LD50: median lethal dose
NOEC: no observable effect concentration
OEL: occupational exposure limit
PBT: persistent, bioaccumulative, toxic chemical
PNEC: predicted no-effect concentration
STEL: short-term exposure limit
TWA: time weighted average
vPvB: very persistent, very bioaccumulative chemical

Source of key data used to compile the data sheet
Supplier information

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