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## Safety Data Sheet AdBlue, DIN 70 070 product

### **1. Product and company identification**

#### **1.1 Identification of the product**

Trade name	AdBlue, an aqueous urea solution (32.5 wt% ) conform DIN 70 070
Commonly used synonyms	NOx reducing agent DIN 70
Chemical name	Carbonyl diamide
Application area	Reducing agent to reduce NOx gases in the SCR gas after treatment catalyst for diesel engines
CAS number	57-13-6
EINECS number	200-315-5
Molecular formula	$\text{NH}_2\text{CONH}_2$
Molmass	60,06 kg-kmol

#### **1.2 Company**

Maxol Lubricants	Tel. : +353 1 806 0300
Unit D, Airport Business Campus	Fax : +353 1 862 3200
Santry	
Dublin 9	

#### **1.3 Emergency calls**

Maxol Lubricants	Tel. : +353 1 8060300
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### **2. Composition / information on ingredients**

#### **2.1 Nature of ingredients and concentration**

Aqueous solution of 32.5 weight % urea.

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## **2.2 Classification**

Not classed as hazardous material according to EC Directive 67/548/EC.

## **3. Hazards Identification**

The product is not dangerous

## **4. First -AID Measures**

### **4.1 Product**

#### *Skin Contact*

- Wash the affected area with soap and water.

#### *Ingestion*

- Do not induce vomiting.
- Give a lot of water to drink.
- Obtain medical attention if more than a small quantity has been swallowed.

#### *Inhalation*

- Remove from source; fresh air.

## **5. Fire- fighting measures**

- The product is not flammable
  - Ammonia might exposure due to constantly heating
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### **5.1 If AdBlue is involved in the fire**

- Wear an approved breathing mask when fighting a fire. Use a self-contained breathing apparatus if fumes are being entered.
- Use plenty of water.
- Prevent water containing product into drains or watercourse.

## **6. *Accidental release measures***

### **6.1 Environmental precautions**

- Take care to avoid the contamination of watercourses and drains and inform the appropriate authority in case of accidental contamination of watercourses.

### **6.2 Methods for cleaning**

- Any spillage of product should be cleaned up promptly, swept up and placed in a clean, labelled, open container for safe disposal.
- Depending on the degree and nature of contamination, dispose of by use as an authorised waste facility.

## **7. *Handling and Storage***

### **7.1 Handling**

- No special rules are necessary to handle AdBlue

### **7.2 Storage**

- Locate away from the source of heat or fire.
  - Ensure high standard of housekeeping in the storage area.
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- Any building used for the storage should be dry and well ventilated.
  - To prevent crystallisation and hydrolysis of the product, a storage temperature between  $-10^{\circ}$  and  $40^{\circ}$  Celsius is needed. At a constantly environmental temperature of minus  $10^{\circ}$  Celsius, the product storage tank, pipes and equipment which comes in contact with the product, must be isolated and heated.
  - Recommended material for storage: High Density Polyethylene (HDPE), Light Density Polyethylene (LDPE), Cr-Ni-stainless steel and Cr-Ni-Mo stainless steel according DIN EN 10088-1 until DIN EN 10088-3 (i.g. 1.4541 and 1.4571)
  - Unqualified materials are iron and metals containing copper and/or zinc alloys

## **8. *Explosure control / Personel protection***

### **8.1 Personal Protection**

- Wear suitable gloves when handling the product over long periods.
- Use chemical safety goggles or full face shield
- Don't eat, drink or smoke during handling of the product. After handling the product, clean your hands.

## **9. *Physical and chemical properties***

Appearance	Colourless clear liquid when free from crystals.
Odour	Almost odourless.
pH water solution (conc. 10 %)	8 - 10
Crystallization point	$-11^{\circ}\text{C}$
Explosive properties	not explosive good
Oxidizing properties	None
Solubility in water	Completely
Density	$1090\text{ kg/m}^3$ at $20^{\circ}\text{C}$
Vapour pressure	approx 48 mm Hg (at $40^{\circ}\text{C}$ )

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## **10. Stability and reactivity**

### **10.1 Stability**

The product is stable under normal conditions of storage, handling and use.

### **10.2 Conditions to avoid**

- Temperatures below crystallisation point.
- At higher temperatures, hydrolysis of urea with formation of ammonia and carbon dioxide might occur above 40 degrees Celsius

### **10.3 Materials to avoid**

Strong oxidizers, acids, nitrates and nitrite.

## **11. Toxicological information**

### **11.1 General**

See Section 3

### **11.2 Toxiciteitsgegevens**

LD50 (oral, rat) > 15.000 mg/kg

Skin irritation ( Rabbit) : no irritation

Eye irritation (Rabbit) : no irritation

## **12. Ecological information**

### **12.1 Mobility**

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Soluble in water.

## **12.2 Persistence / Degradability**

Substantially biodegradable in soil and water.

## **12.3 Bio-accumulation**

Low potential for bio-accumulation.

## **12.4 Ecotoxicity**

Has low intrinsic aquatic toxicity but will exert a substantial oxygen demand when significant quantities as in a spillage reach a watercourse and may cause damage to aquatic life. Acute fish toxicity LC 50 : for urea : > 10000 mg/l 48 hours (gold fish).

# ***13. Disposal considerations***

## **13.1 General**

- Any spillage of product should be cleaned up promptly, swept up and placed in a clean, labelled, open container for safe disposal.
- Depending on the degree and nature of contamination, dispose of by use as an authorised waste facility.

# ***14. Transport information***

## **14.1 UN-classification**

Not classed, ie considered non-hazardous material according to UN Orange Book and international transport codes e.g. RID (rail), ADR (road), ADNR (inland waterways) and IMDG (sea).

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## **15. Regulatory information**

Not classed as hazardous material according to EC Directive 67/548/EC and therefore no obligation for registration.

## **16. Other information**

The information in this safety data sheet is given in good faith and belief in its accuracy based on our knowledge of the substance/preparation concerned at the date of publication. It does not imply the acceptance of any legal liability or responsibility whatsoever by the Company for the consequences of its use or misuse in any particular circumstances.

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#### 4.6 AdBlue specification DIN 70 070

Test Item	Unit	Limits
Urea content	weight-%	32,55 ± 0,75
pH-value (10% HS-solution)		10 max.
Alkalinity as NH <sub>3</sub>	%	0,2 max.
Carbonate as CO <sub>2</sub>	%	0,2 max.
Biuret	%	0,3 max.
Formaldehyde	mg/kg	10 max.
Insolubles	mg/kg	20 max.
Phosphate (PO <sub>4</sub> )	mg/kg	0,5 max.
Calcium	mg/kg	0,5 max.
Iron	mg/kg	0,5 max.
Copper	mg/kg	0,2 max.
Zink	mg/kg	0,2 max.
Chromium	mg/kg	0,2 max.
Nickel	mg/kg	0,2 max.
Magnesium	mg/kg	0,5 max.
Sodium	mg/kg	0,5 max.
Potassium	mg/kg	0,5 max.
Density at 20°C	g/cm <sup>3</sup>	1,0870 – 1,0920
Refractive index at 20°C		1,3817 – 1,3840

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