

# Safety Data Sheet

According to Commission Regulation (EU) No 2015/830

Issue date 21/09/2012  
 Issue 4  
 Review date 31/05/2016  
 Review 5

## Urea Solution 32.5% - ADBLUE solution

SECTION 1 Identification of the substance/mixture and of the company/undertaking																	
1.1	Product identifier																
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SECTION 2 Hazards identification											
2.1	Classification of the substance or mixture*										
	According to Regulation EC 1272/2008 [CLP] Not hazardous.										
2.2	Label elements										
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\* To understand the full meaning of hazard statements (H): see section 16

3 Composition/information on ingredients																									
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## Urea Solution 32.5% - ADBLUE solution

SECTION 4		First aid measures
4.1	<b>Description of first aid measures</b>	
	<b>General</b>	Seek medical attention when necessary.
	<b>Inhalation</b>	At room temperature there are no hazardous fumes.
	<b>Ingestion</b>	Do not induce vomiting. If the person is conscious, rinse mouth with water and give fluid (water or milk) slowly to the extent that he can drink.
	<b>Contact with skin</b>	Wash the affected area with plenty of water.
	<b>Contact with eyes</b>	Immediately flush eyes with eyewash solution or normal clean water for at least 10 minutes and also under the eyelids. Remove contact lenses if present and easy to do. Seek medical attention if eye irritation persists.
4.2	<b>Most important symptoms and effects, both acute and delayed</b>	
4.3	<b>Indication of any immediate medical attention and special treatment needed</b>	
		Inhalation of gases, from a fire or thermal decomposition, that contain nitrogen and ammonium oxides may cause irritation and have corrosive effects on the respiratory system. Administer oxygen, especially if there is blue colouring (methaemoglobin) around the mouth.
SECTION 5		Firefighting measures
5.1	<b>Extinguishing media</b>	
	<b>Suitable extinguishing media</b>	There are no restrictions on the type of extinguisher which may be used. Water can be used if it is compatible with the burning material.
	<b>Unsuitable extinguishing media</b>	None
5.2	<b>Special hazards arising from the substance or mixture</b>	
	<b>Special hazards</b>	The solution must not be allowed to enter into drains.
	<b>Thermal decomposition or product combustion hazards</b>	Nitrogen and ammonium oxides and carbon dioxide
5.3	<b>Advice for firefighters</b>	
	<b>Specific firefighting methods</b>	Open doors and windows in the area to give maximum ventilation. Avoid breathing the smoke (toxic). Position yourself upwind of the fire. Avoid any contamination of the product with incompatible materials.
	<b>Special protective equipment for firefighting</b>	Use self contained breathing apparatus in case of smoke.
SECTION 6		Accidental release measures
6.1	<b>Personal precautions, protective equipment and emergency procedures</b>	
		Spills are slippery. Clean up all spills immediately. Wash with water.
6.2	<b>Environmental precautions</b>	
		Take care to prevent contamination of water courses and drains and inform the competent authorities in case of accidental contamination of water courses.
6.3	<b>Methods and material for containment and cleaning up</b>	
		Contain spillage with sand or earth. Collect recoverable product into labelled containers for recycling or disposal. DO NOT USE as AdBlue™. Absorb remaining product with sand or earth and place in a properly labeled container for disposal. Wash the area with water to avoid being washed into drains or water courses.
6.4	<b>Reference to other sections</b>	
		See section 1 for contact data, section 8 for PPE and section 13 for waste disposal.
SECTION 7		Handling and storage
7.1	<b>Precautions for safe handling</b>	
		Work in well ventilated areas. When the product is handled for long periods, use appropriate personal protective equipment, e.g. gloves. Carefully clean the installations before carrying out maintenance and repair operations.
7.2	<b>Conditions for safe storage, including any incompatibilities</b>	
		Keep containers tightly closed. Always keep storage areas clean. Store in cool, dry, and well-ventilated areas or buildings. Store away from contact with incompatible materials and food. Protect containers against physical damage and check regularly for leaks or spills. Store away from heat or fire sources. Do not store at temperatures below -11 °C. Do not store at temperatures above 30 °C.
	<b>Recommended and non-recommended packaging materials</b>	Suitable materials for containers are: stainless steel, polyethylene, polypropylene, etc.
7.3	<b>Specific end use(s)</b>	
		See section 1.2 and appendices for exposure scenarios.
<i>Note: stability and reactivity, see section 10</i>		

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SECTION 8		Exposure controls/personal protection						
8.1	Control parameters							
	Occupational exposure limit values		Component	CAS				
			Urea	57-13-6	Not established.			
	Derived from the CSR	DNEL			Worker			consumer
				systemic	industrial	professional		
			oral	Short term long term	Not applicable	Not applicable	42 mg/Kg bw/day	
			inhalation	Short term long term	292 mg/m <sup>3</sup>	292 mg/m <sup>3</sup>	125 mg/m <sup>3</sup>	
	dermal	Short term long term	580 mg/Kg bw/day	580 mg/Kg bw/day	580 mg/Kg bw/day			
	PNEC	water		air	soil	microbiological	sediment	oral
		fresh surface water: 0.047 mg / L		Not available	Not available	Not required	Not required	Not required
8.2	Exposure controls							
	Engineering measures and hygiene controls		Provide plenty of cool running water for flushing in case of contact with skin or eyes. Provide ventilation where necessary. Do not smoke or drink when handling. Wash hands after handling the product and before eating, drinking or smoking. Use the wash basin at the end of the work day.					
	Personal protection measures							
		Eyes	Safety glasses with side shields (EN 166) or panoramic safety goggles according to risk.					
		Skin and body	Work clothes.					
		Hands	Use suitable gloves (for example, rubber or PVC) when handling the product over long periods of time.					
		Respiratory	During emergency situations use appropriate respiratory equipment.					
		Thermal						
	Environmental exposure controls		See section 6.					
	<i>Advice relating to personal protection is valid for high exposure levels.</i>							
	<i>Choose personal protection equipment suitable to exposure risks.</i>							
SECTION 9		Physical and chemical properties						
9.1	Information on basic physical and chemical properties							
	Aspect		Clear colourless liquid					
	Colour		Colourless					
	Odour		Slight odor of ammonia					
	Molecular weight		Not applicable					
	pH		Approx. 9,5					
	Boiling point		Not available					
	Crystallization point		-11 °C					
	Flash-point		Non flammable					
	Flammability		Non flammable					
	Explosive properties		Non-explosive. Uncontaminated urea solution does not suppose any risk of explosion. However, it can form explosive mixtures if contaminated with strong acids and nitrates.					
	Auto-ignition temperature		Non flammable					
	Decomposition temperature		Not available					
	Lower explosive limit		Not applicable					
	Upper explosive limit		Not applicable					
	Oxidising properties		Not classified as oxidizing agent.					
	Density at 20 °C		1,090 kg/m <sup>3</sup>					
	Vapour pressure at 100 °C		Not available					
	Vapour density		Not applicable					
	Partition coefficient n-octanol/water		LgPow < -1.73 for urea					
	Viscosity		Not available					
	Water solubility		Miscible in all proportions					
9.2	Other information		Molecular weight 60 g/mol for the main ingredient (urea)					

## Urea Solution 32.5% - ADBLUE solution

SECTION 10		Stability and reactivity
10.1	Reactivity	Stable under normal conditions of storage, handling and use (see section 7)
10.2	Chemical stability	Stable under normal conditions of storage, handling and use (see section 7)
10.3	Possibility of hazardous reactions	Urea solution reacts with sodium hypochlorite or calcium hypochlorite to form the nitrogen trichloride which may explode spontaneously in air. Strong reaction with nitrites.
10.4	Conditions to avoid	High temperature, release of ammonia and carbon dioxide due to hydrolysis of urea. Avoid temperatures below the crystallization point. Contamination by incompatible materials.
10.5	Incompatible materials	Acids, alkali, nitrites and nitrates, sodium hypochlorite or calcium hypochlorite, strong oxidants Urea solution reacts with sodium hypochlorite or calcium hypochlorite to form the nitrogen trichloride which may explode spontaneously in air. Strong reaction with nitrites.
10.6	Hazardous decomposition products	In case of fire: see Section 5 When strongly heated it decomposes releasing toxic gases (e.g. NO <sub>x</sub> and ammonia). When it is in contact with alkaline materials, such as lime, ammonia gases may be produced.

SECTION 11		Toxicological information					
11.1	Information on toxicological effects						
	Toxicokinetics, metabolism and distribution	Not available					
		Component	CAS No.	Method	Species	Via	Result
	Acute toxicity	Urea	57-13-6	OECD 401	rat	oral	LD50: 14.3-15 g / kg bw.
	Skin corrosion/irritation	No known significant effects or critical hazards					
	Serious eye damage/irritation	No known significant effects or critical hazards					
	Respiratory or skin sensitisation	No known significant effects or critical hazards					
	Germ cell mutagenicity	No known significant effects or critical hazards Ames Test negative.					
	Carcinogenicity	No known significant effects or critical hazards					
	Reproductive toxicity	No known significant effects or critical hazards.					
	STOT-single exposure y STOT-repeated exposure	No known significant effects or critical hazards.					
	Aspiration hazard	No known significant effects or critical hazards.					
	Notes	If the product is handled and used properly it is considered unlikely to produce adverse health effects.					

## Urea Solution 32.5% - ADBLUE solution

SECTION 12 Ecological information								
<b>12.1 Toxicity</b>								
<b>Water toxicity</b>								
<b>Component</b>	<b>CAS No.</b>		<b>Fish (Leuciscus idus)</b>	<b>Crustaceans (Daphnia magna)</b>	<b>Algae (Microcystis aeruginosa)</b>			
Urea	57-13-6	Short term	LC50(96h) > 6810 mg/l	LC50(24h) > 10,000 mg/l	LC50(192h) = 47 mg/l			
Low toxicity to aquatic life								
<b>12.2 Persistence and degradability</b>								
<b>Component</b>	<b>CAS No.</b>	<b>Aquatic life</b>		<b>Photolysis</b>	<b>Biodegradability</b>			
Urea	57-13-6	Not available		Not available	10.9 mg/l in 1 h at 20 °C			
<b>12.3 Bioaccumulative potential</b>								
<b>Component</b>	<b>CAS No.</b>	<b>Octanol-water partition coefficient (Kow)</b>		<b>Bioconcentration factor (BCF)</b>	<b>Bioaccumulative potential</b>			
Urea	57-13-6	-1,73		-	Low			
<b>12.4 Mobility in soil</b>								
<b>Component</b>	<b>CAS No.</b>	<b>Result</b>						
Urea	57-13-6	Soluble in water.						
<b>12.5 Results of PBT and vPvB assessment</b>								
Not available.								
<b>12.6 Other adverse effects</b>								
No more information.								
SECTION 13 Disposal considerations								
<b>13.1 Waste treatment methods</b>								
At the slightest risk that the product is contaminated, DO NOT USE as AdBlue™. Consult the manufacturer about the possibility of recycling or for use in agriculture. Waste resulting from spills should be taken to an approved landfill or consigned for use in agriculture. The material used for the handling of waste must be as indicated in section 7.								
SECTION 14 Transport Information								
<b>14.1 - 14.6</b>	<b>Regulatory Information</b>	<b>UN Number</b>	<b>Proper shipping name</b>	<b>Class</b>	<b>Packing group</b>	<b>Label</b>	<b>Environmental hazards</b>	<b>Special precautions for users</b>
	ADR/RID ADNR IMDG IATA	NOT CLASSIFIED						
<b>14.7</b>	<b>Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable</b>							
SECTION 15 Regulatory information								
<b>15.1 Safety, health and environmental regulations and legislation specific for the substance or mixture</b>								
Regulation 1907/2006 (REACH). Regulation 1272/2008 (CLP) R.D. 374/2001 (Chemical agents)								
<b>15.2 Chemical Safety Assessment</b>								
Assessment of Chemical Safety carried out for the main ingredient, Urea as a substance.								

## Urea Solution 32.5% - ADBLUE solution

SECTION 16	Other information	
	<b>Hazard statements</b>	None
	<b>Precautionary statements</b>	None
	<b>Bibliographical references and data sources</b>	Chemical Safety Assessment for Urea; Guidance documents EFMA/FERTILIZER EUROPE; Data for TFI HPV; NOTOX AUS 32 Quality Assurance Guidance Document, of the AGU (Automotive Grade Urea) Sector Group of CEFIC (European Chemical Industry Council). ISO 22241 Standard
	<b>Abbreviations and acronyms</b>	ELV-DE: Environmental limit value (daily exposure) ELV-ST Environmental limit value (short term) NOAEL: No observable adverse effect level LD50: Lethal dose 50% LC50: Lethal concentration 50% EC50: Effective concentration 50% DNEL: Derived no effect level PNEC: Predicted no effect concentration LOEC: Lowest observed effect concentration NOEC: No observed effect concentration NOAEC: No observed adverse effect concentration
	<b>Adequate training for workers</b>	Obligatory training in occupational risk prevention
	<b>Date of prior SDS</b>	Review 4: 21/09/2012
	<b>Modifications made to present revision</b>	Adaptation to the Commission Regulation (EU) No 2015/830. Update of current regulations
<p>The information contained in this Safety Data Sheet is given in good faith. It is accurate to the best of our knowledge and belief and represents the most up to date information about the product at the time of publication. The information given in this data sheet does not constitute or replace the user's own assessment of workplace risks as required by other health and safety legislation.</p>		