

# Safety Data Sheet

According to Commission Regulation (EU) No 2015/830

Issue date 21/09/2012  
 Issue 3  
 Review date 29/02/2016  
 Review 4

## Urea Solution 30-45%

SECTION 1 Identification of the substance/mixture and of the company/undertaking								
1.1	Product identifier							
	Product commercial name	Urea Solution 40%, Urea Solution 43%, Urea Solution XX%						
	Chemical name	Mixture, main ingredient urea						
	Other names	Urea Solución						
	Chemical formula	Mixture, main ingredient CH4N2O						
	EU index number (Appendix 1)	Not applicable						
	CE No	Not applicable						
	CAS No.	Not applicable						
	REACH or National product registration number	Not applicable						
1.2	Relevant identified uses of the substance or mixture and uses advised against							
	Identified uses	In some industrial processes to reduce NOx emissions. For water treatment.						
	Uses advised against							
1.3	Details of the supplier of the safety data sheet							
	Company name	FERTIBERIA. S.A.						
	Company address	Paseo de la Castellana, 259 D. Plantas 47 y 48 - 28046 Madrid						
	Company telephone number	Central: 91.586.62.00; Palos factory: 959.49.24.00						
	Company email for SDS	<a href="mailto:reachfertiberia@fertiberia.es">reachfertiberia@fertiberia.es</a>						
1.4	Emergency telephone number	Palos factory: 959.49.24.00						
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	Pictograms	Signal word	Hazard statements	Precautionary Statements			
2.3	Other hazards							
	PBT/vBvP Criteria	In accordance with appendix XIII of the Regulation (EC) no. 1907/2006, it is not PBT or vPvB.						
	<u>Other hazards that do not involve product classification</u>							
	Physical and chemical hazards	When heated the urea solution decomposes releasing ammonia. In the case of a fire and very high temperatures toxic fumes can be released that contain nitrogen and ammonium oxides.						
	Health hazards	<p>This product is basically harmless when handled correctly. Nevertheless, the following points should be observed:</p> <p><b>Contact with skin:</b> Prolonged or repeated exposure and prolonged immersion may cause irritation or inflammation.</p> <p><b>Contact with eyes:</b> Direct contact with eyes, even though the product is not considered an irritant, may cause temporary discomfort such as irritation and redness.</p> <p><b>Ingestion:</b> Swallowing small amounts is unlikely to have toxic effects. In large quantities it can produce disorders in the gastrointestinal tract.</p> <p><b>Inhalation:</b> Even though this product is not classified avoid exposure by inhalation. In case of solidification by crystallization, inhalation of air-blown dust at high concentrations may cause irritation of the nose and upper respiratory tract.</p> <p><b>Other: Fire and heating:</b> When heated the urea solution decomposes releasing ammonia. In the case of a fire and very high temperatures toxic fumes can be released that contain nitrogen and ammonium oxides.</p>						
	Environmental hazards	Intrinsically low toxicity to aquatic life, but will exert a substantial oxygen demand which may cause damage to aquatic life when spillage in significant quantities reach sewers, drains or water courses. See section 12.						
* To understand the full meaning of hazard statements (H): see section 16								
SECTION 3 Composition/information on ingredients								
3.2	Name	% (w/w)	CAS No.	IUPAC	Index No R.1272/2008	REACH Registration Number	Classification Regulation 1272/2008	Specific concentration limits
	Urea	30-45%	57-13-6	Urea	--	01-2119463277-33-0022	Not classified	
	Water	55-70%	7732-18-5			Not required	Not classified	

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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. 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 its crystallisation temperature.
	<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	<p><b>Eyes</b> Safety glasses with side shields (EN 166) or panoramic safety goggles according to risk.</p> <p><b>Skin and body</b> Work clothes.</p> <p><b>Hands</b> Use suitable gloves (for example, rubber or PVC) when handling the product over long periods of time.</p> <p><b>Respiratory</b> During emergency situations use appropriate respiratory equipment.</p> <p><b>Thermal</b></p>						
	Environmental exposure controls	See section 6.						
		<p><i>Advice relating to personal protection is valid for high exposure levels.</i></p> <p><i>Choose personal protection equipment suitable to exposure risks.</i></p>						
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	Depends on the concentration: -11 °C for Conc. = 32.5%; +1 °C for Conc. = 40%; +5 °C for Conc. = 43%						
	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	Depends on the concentration: 1090 kg/m <sup>3</sup> for Conc.= 32.5%; 1110 kg/m <sup>3</sup> for Conc. = 40%; 1120 kg/m <sup>3</sup> for Conc. = 43%						
	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)						

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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. NOx 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
		Urea	57-13-6	OECD 401	rat	oral	LD50: 14.3-15 g / kg bw.
		Acute toxicity					
		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.					

SECTION 12		Ecological information					
12.1		Toxicity					
		Water toxicity					
		Component	CAS No.	Fish (Leuciscus idus)	Crustaceans (Daphnia magna)	Algae (Microcystis aeruginosa)	
		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					
12.2		Persistence and degradability					
		Component	CAS No.	Aquatic life	Photolysis	Biodegradability	
		Urea	57-13-6	Not available	Not available	10.9 mg/l in 1 h at 20 °C	
12.3		Bioaccumulative potential					
		Component	CAS No.	Octanol-water partition coefficient (Kow)	Bioconcentration factor (BCF)	Bioaccumulative potential	
		Urea	57-13-6	-1,73	-	Low	
12.4		Mobility in soil					
		Component	CAS No.	Result			
		Urea	57-13-6	Soluble in water.			
12.5		Results of PBT and vPvB assessment					
		Not available.					
12.6		Other adverse effects					
		No more information.					

SECTION 13		Disposal considerations					
13.1		Waste treatment methods					
		At the slightest risk that the product is contaminated, DO NOT USE as NOx reducing agent. Consult the manufacturer about the possibility of recycling or for use in agriculture. The presence of a biuret content greater than 0.2% may make it non-viable for agricultural use. 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						
14.1 - 14.6	Regulatory Information	UN Number	Proper shipping name	Class	Packing group	Label	Environmental hazards	Special precautions for users
	ADR/RID ADNR IMDG	NOT CLASSIFIED						

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	IATA	
14.7	<i>Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable</i>	

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SECTION 15 Regulatory information															
15.1	<b>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)														
15.2	<b>Chemical Safety Assessment</b>														
	Assessment of Chemical Safety carried out for the main ingredient, Urea as a substance.														
SECTION 16 Other information															
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;"><b>Hazard statements</b></td> <td>None</td> </tr> <tr> <td><b>Precautionary statements</b></td> <td>None</td> </tr> <tr> <td><b>Bibliographical references and data sources</b></td> <td>Chemical Safety Assessment for Urea; Guidance documents EFMA/FERTILIZER EUROPE; Data for TFI HPV; NOTOX</td> </tr> <tr> <td><b>Abbreviations and acronyms</b></td> <td>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</td> </tr> <tr> <td><b>Adequate training for workers</b></td> <td>Obligatory training in occupational risk prevention</td> </tr> <tr> <td><b>Date of prior SDS</b></td> <td>Review 3: 21/09/2012</td> </tr> <tr> <td><b>Modifications made to present revision</b></td> <td>Adaptation to the Commission Regulation (EU) No 2015/830. Update of current regulations</td> </tr> </table>	<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	<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 3: 21/09/2012	<b>Modifications made to present revision</b>	Adaptation to the Commission Regulation (EU) No 2015/830. Update of current regulations
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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.