

# Safety Data Sheet

According to Regulation (EU) No 453/2010 of the Commission

Issue date 01/02/2012  
 Issue 1  
 Review date 21/09/2012  
 Review 3

## Urea Solution 30-45%

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 CH <sub>4</sub> N <sub>2</sub> O								
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 NO <sub>x</sub> 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								
2 Hazards identification									
2.1 Classification*	According to Directive 1999/45/EEC Not hazardous. According to Regulation EC 1272/2008 [CLP] Not hazardous.								
2.2 Label elements	<table border="1"> <thead> <tr> <th>Pictograms</th> <th>Signal word</th> <th>Hazard statements</th> <th>Precautionary Statements</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Pictograms	Signal word	Hazard statements	Precautionary Statements				
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	This product is basically harmless when handled correctly. Nevertheless, the following points should be observed: <b>Contact with skin:</b> Prolonged or repeated exposure and prolonged immersion may cause irritation or inflammation. <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. <b>Ingestion:</b> Swallowing small amounts is unlikely to have toxic effects. In large quantities it can produce disorders in the gastrointestinal tract. <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. <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.								
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 R phrases and/or hazard statements (H): see section 16

3 Composition/information on ingredients									
Name	% (w/w)	CAS No.	IUPAC	Index No R.1272/2008	REACH Registration Number	Classification D. 67/548/EEC	Classification Regulation 1272/2008	Specific concentration limits	
Urea	30-45%	57-13-6	Urea	--	01-2119463277-33-0022	Not classified	Not classified		
Water	55-70%	7732-18-5			Not required		Not classified		

## Urea Solution 30-45%

<b>4 First aid measures</b>	
<b>4.1 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.
<b>4.2 Most important symptoms and effects, both acute and delayed</b>	
<b>4.3 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.	
<b>5 Firefighting measures</b>	
<b>5.1 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
<b>5.2 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
<b>5.3 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.
<b>6 Accidental release measures</b>	
<b>6.1 Personal precautions, protective equipment and emergency procedures</b>	
Spills are slippery. Clean up all spills immediately. Wash with water.	
<b>6.2 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.	
<b>6.3 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.	
<b>6.4 Reference to other sections</b>	
See section 1 for contact data, section 8 for PPE and section 13 for waste disposal.	
<b>7 Handling and storage</b>	
<b>7.1 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.	
<b>7.2 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.
<b>7.3 Specific end uses</b>	
See section 1.2 and appendices for exposure scenarios.	
<i>Note: stability and reactivity, see section 10</i>	

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<b>8</b>	<b>Exposure controls/personal protection</b>								
<b>8.1</b>	<b>Control parameters</b>								
	<b>Occupational exposure limit values</b>		<b>Component</b>	<b>CAS</b>					
			Urea	57-13-6	Not established.				
	<b>Derived from the CSR</b>					<b>Worker</b>		<b>consumer</b>	
						<b>systemic</b>	<b>industrial</b>	<b>professional</b>	
			<b>oral</b>	Short term long term	Not applicable		Not applicable		42 mg/Kg bw/day
			<b>inhalation</b>	Short term long term	292 mg/m <sup>3</sup>		292 mg/m <sup>3</sup>		125 mg/m <sup>3</sup>
			<b>dermal</b>	Short term long term	580 mg/Kg bw/day		580 mg/Kg bw/day		580 mg/Kg bw/day
			<b>PNEC</b>		<b>water</b>	<b>air</b>	<b>soil</b>	<b>microbiological</b>	<b>sediment</b>
			fresh surface water: 0.047 mg / L	Not available	Not available	Not required	Not required	Not required	
	<b>8.2</b>	<b>Exposure controls</b>							
	<b>Engineering measures and hygiene controls</b>		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.						
	<b>Personal protection measures</b>								
	<b>Eyes</b>	Safety glasses with side shields (EN 166) or panoramic safety goggles according to risk.							
	<b>Skin and body</b>	Work clothes.							
	<b>Hands</b>	Use suitable gloves (for example, rubber or PVC) when handling the product over long periods of time.							
	<b>Respiratory</b>	During emergency situations use appropriate respiratory equipment.							
	<b>Thermal</b>								
	<b>Environmental exposure controls</b>		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>									
<b>9</b>	<b>Physical and chemical properties</b>								
<b>9.1</b>	<b>Information on basic physical and chemical properties</b>								
	<b>Aspect</b>	Clear colourless liquid							
	<b>Colour</b>	Colourless							
	<b>Odour</b>	Slight odor of ammonia							
	<b>Molecular weight</b>	Not applicable							
	<b>pH</b>	Approx. 9,5							
	<b>Boiling point</b>	Not available							
	<b>Crystallization point</b>	Depends on the concentration: -11 °C for Conc. = 32.5%; +1 °C for Conc. = 40%; +5 °C for Conc. = 43%							
	<b>Flash-point</b>	Non flammable							
	<b>Flammability</b>	Non flammable							
	<b>Explosive properties</b>	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.							
	<b>Auto-ignition temperature</b>	Non flammable							
	<b>Decomposition temperature</b>	Not available							
	<b>Lower explosive limit</b>	Not applicable							
	<b>Upper explosive limit</b>	Not applicable							
	<b>Oxidising properties</b>	Not classified as oxidizing agent.							
	<b>Density at 20 °C</b>	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%							
	<b>Vapour pressure at 100 °C</b>	Not available							
	<b>Vapour density</b>	Not applicable							
<b>Partition coefficient n-octanol/water</b>	LgPow < -1.73 for urea								
<b>Viscosity</b>	Not available								
<b>Water solubility</b>	Miscible in all proportions								
<b>9.2</b>	<b>Additional information</b>								
	Molecular weight 60 g/mol for the main ingredient (urea)								

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<b>10</b>	<b>Stability and reactivity</b>	
<b>10.1</b>	<b>Reactivity</b>	Stable under normal conditions of storage, handling and use (see section 7)
<b>10.2</b>	<b>Chemical stability</b>	Stable under normal conditions of storage, handling and use (see section 7)
<b>10.3</b>	<b>Possibility of hazardous reactions</b>	Urea solution reacts with sodium hypochlorite or calcium hypochlorite to form the nitrogen trichloride which may explode spontaneously in air. Strong reaction with nitrites.
<b>10.4</b>	<b>Conditions that must be avoided</b>	High temperature, release of ammonia and carbon dioxide due to hydrolysis of urea. Avoid temperatures below the crystallization point. Contamination by incompatible materials.
<b>10.5</b>	<b>Incompatible materials</b>	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.
<b>10.6</b>	<b>Hazardous decomposition products</b>	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.

<b>11</b>	<b>Toxicological information</b>													
<b>11.1</b>	<b>Information on toxicological effects</b>													
	<b>Toxicokinetics, metabolism and distribution</b>	Not available												
		<table border="1"> <thead> <tr> <th>Component</th> <th>CAS No.</th> <th>Method</th> <th>Species</th> <th>Via</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>Urea</td> <td>57-13-6</td> <td>OECD 401</td> <td>rat</td> <td>oral</td> <td>LD50: 14.3-15 g / kg bw.</td> </tr> </tbody> </table>	Component	CAS No.	Method	Species	Via	Result	Urea	57-13-6	OECD 401	rat	oral	LD50: 14.3-15 g / kg bw.
Component	CAS No.	Method	Species	Via	Result									
Urea	57-13-6	OECD 401	rat	oral	LD50: 14.3-15 g / kg bw.									
	<b>Acute toxicity</b>	Urea												
	<b>Sensitisation</b>	No known significant effects or critical hazards												
	<b>Chronic toxicity</b>	No known significant effects or critical hazards												
	<b>Carcinogenicity</b>	No known significant effects or critical hazards												
	<b>Mutagenicity</b>	No known significant effects or critical hazards Ames Test negative.												
	<b>Toxicity for reproduction</b>	No known significant effects or critical hazards												
	<b>Notes</b>	If the product is handled and used properly it is considered unlikely to produce adverse health effects.												

<b>12</b>	<b>Ecological information</b>													
<b>12.1</b>	<b>Toxicity</b>													
	<b>Water toxicity</b>													
	<table border="1"> <thead> <tr> <th>Component</th> <th>CAS No.</th> <th></th> <th>Fish (Leuciscus idus)</th> <th>Crustaceans (Daphnia magna)</th> <th>Algae (Microcystis aeruginosa)</th> </tr> </thead> <tbody> <tr> <td>Urea</td> <td>57-13-6</td> <td>Short term</td> <td>LC50(96h) &gt; 6810 mg/l</td> <td>LC50(24h) &gt; 10,000 mg/l</td> <td>LC50(192h) = 47 mg/l</td> </tr> </tbody> </table>	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
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									
<b>12.2</b>	<b>Persistence and degradability</b>													
	<table border="1"> <thead> <tr> <th>Component</th> <th>CAS No.</th> <th>Aquatic life</th> <th>Photolysis</th> <th>Biodegradability</th> </tr> </thead> <tbody> <tr> <td>Urea</td> <td>57-13-6</td> <td>Not available</td> <td>Not available</td> <td>10.9 mg/l in 1 h at 20 °C</td> </tr> </tbody> </table>	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			
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Urea	57-13-6	Not available	Not available	10.9 mg/l in 1 h at 20 °C										
<b>12.3</b>	<b>Bioaccumulative potential</b>													
	<table border="1"> <thead> <tr> <th>Component</th> <th>CAS No.</th> <th>Octanol-water partition coefficient (Kow)</th> <th>Bioconcentration factor (BCF)</th> <th>Bioaccumulative potential</th> </tr> </thead> <tbody> <tr> <td>Urea</td> <td>57-13-6</td> <td>-1,73</td> <td>-</td> <td>Low</td> </tr> </tbody> </table>	Component	CAS No.	Octanol-water partition coefficient (Kow)	Bioconcentration factor (BCF)	Bioaccumulative potential	Urea	57-13-6	-1,73	-	Low			
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<b>12.4</b>	<b>Mobility in soil</b>													
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Component	CAS No.	Result												
Urea	57-13-6	Soluble in water.												
<b>12.5</b>	<b>Results of PBT and vPvB assessment</b>													
	Not available.													
<b>12.6</b>	<b>Other adverse effects</b>													
	No more information.													

<b>13</b>	<b>Disposal considerations</b>	
<b>13.1</b>	<b>Waste treatment methods</b>	
	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.	

<b>14</b>	<b>Transport Information</b>															
<b>14.1 - 14.6</b>	<b>Regulatory Information</b>	<table border="1"> <thead> <tr> <th>UN Number</th> <th>Proper shipping name</th> <th>Class</th> <th>Packing group</th> <th>Label</th> <th>Environmental hazards</th> <th>Special precautions for users</th> </tr> </thead> <tbody> <tr> <td>ADR/RID ADNR IMDG IATA</td> <td colspan="6" style="text-align: center;">NOT CLASSIFIED</td> </tr> </tbody> </table>	UN Number	Proper shipping name	Class	Packing group	Label	Environmental hazards	Special precautions for users	ADR/RID ADNR IMDG IATA	NOT CLASSIFIED					
UN Number	Proper shipping name	Class	Packing group	Label	Environmental hazards	Special precautions for users										
ADR/RID ADNR IMDG IATA	NOT CLASSIFIED															
<b>14.7</b>	<b>Bulk transport in accordance with appendix II of the Marpol 73/78 Convention and the IBC Code: Not applicable</b>															

## Urea Solution 30-45%

<b>15</b>	<b>Regulatory information</b>	
<b>15.1</b>	<b>Safety, health and environmental regulations and legislation specific for the substance or mixture</b>	
	Regulation 1907/2006 (REACH) Regulation 1272/2008 (CLP) Directive 548/1967; R.D. 363/1995 (Hazardous substances) R.D. 374/2001 (Chemical agents)	
<b>15.2</b>	<b>Chemical Safety Assessment</b>	
	Assessment of Chemical Safety carried out for the main ingredient, Urea as a substance.	
<b>16 Other information</b>		
	<b>Risk Phrases</b>	None
	<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 2: 17/07/2012
	<b>Modifications made to present revision</b>	Fixed an error in paragraph 11. The LD50 of Urea appeared with a value of 13.3 to 15 g / kg bw when it is actually <b>14.3 to 15 g / kg bw</b> .
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.		