

## UREA FEED GRADE

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier.

Product name:	Granular urea, crystalline urea, industrial urea, animal feed urea.
Chemical name:	Urea
Synonyms, trade names:	Carbamide, carbonyldiamide
REACH registration number:	01-2119463277-330022
CAS number:	57-13-6
EU number (Annex 1):	NA
Chemical formula:	CH <sub>4</sub> N <sub>2</sub> O

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

Identified uses	Fertilizer, formulation of mixtures, as an intermediate substance in various industrial processes, process additive as an auxiliary agent, laboratory chemical product, cleaning product, additive for animal feed, treatment and reduction of NO <sub>x</sub> in cosmetics.
-----------------	--

#### 1.3. Identification of the company

Supplier:	SAISA CHEMICALS S.A.
Address:	C. JUAN HURTADO DE MENDOZA 15, 1º POST 28036 MADRID (ESPAÑA)
Phone number:	0034913459444
e-mail:	saisa@saisa.es
Emergency phone:	0034915620420

### SECTION 2: Hazard Identification

#### 2.1. Classification of the substance or mixture

Classification	In accordance with Regulation CE 1272/2008 (CLP)
----------------	--

#### 2.2. Label elements

Pictograms	-
Warning words	-
Hazard statements:	-
Precautionary advice:	-

#### 2.3. Other risks:

PBT/vPvB criteria: Not available

Other hazards that do not imply the classification of the product: physical and chemical hazards. It is not fuel. When heated it melts. When strongly heated, it decomposes giving off toxic fumes containing NO<sub>x</sub> and CO<sub>2</sub> and ammonia.

Health hazard:

Urea is basically a harmless product when handled correctly. However, the following aspects must be observed:

**Skin and Eye Contact:** Prolonged contact may cause discomfort.

**Ingestion:** Small amounts are unlikely to cause toxic effects. In large quantities, it can cause disorders in the gastrointestinal tract.

**Inhalation:** High concentrations of suspended dust can cause irritation of the nose and upper respiratory tract with symptoms such as sore throat and cough.

**Long-term effects:** no known adverse effects.

**Others:** fire and heating. Inhalation of decomposition gases containing nitrogen oxides and ammonia can cause irritation and corrosive effects on the respiratory system.

**Environmental hazards:** Urea is a nitrogenous fertilizer. Large spills can cause adverse impacts on the environment such as eutrophication (unintentional development of flora) in confined surface waters. Due to chemical reactions in the soil, ammonia can be released (see section 12).

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Product name:	UREA
Nº CE:	200-315-5
Nº CAS:	57-13-6
% (p/p)	> 98%
IUPAC name:	Urea

### SECTION 4: First Aid.

#### 4.1. Description of first aid.

General:	Immediate medical attention is not necessary.
----------	---

Inhalacion:	Remove it from the source of dust emission. Get medical attention if large amounts of dust have been breathed.
Ingestion:	Do not induce vomiting. Rinse mouth and give water or milk to drink. Get medical attention if more than a small amount of powder has been swallowed.
Skin contact:	Wash the affected area with water.
Eye contact:	Flush or irrigate eyes with plenty of water for at least 10 minutes, including behind the eyelids. Extract the lenses if you wear them and it is easy to do so. Get medical attention if eye irritation persists.

#### 4.2. Indication of any necessary medical attention and special treatment.

Notes to Physician	Inhalation of gases from fire or thermal decomposition, which contain nitrogen oxides and ammonia, can cause irritation and corrosive effects on the respiratory system.
--------------------	--

### SECTION 5: Extinguishing media

#### 5.1. Extinguishing media

Suitable extinguishing media:	Use plenty of water
-------------------------------	---------------------

#### 5.2. Specific hazards arising from the substance or mixture

Special risks:	Do not allow melted fertilizer to enter drains.
Hazards of thermal decomposition and combustion products:	Nitrogen oxide, ammonia and carbon dioxide.

#### 5.3. Recommendations for firefighters

Protective measures during fire fighting:	Open doors and windows of the enclosure to provide maximum ventilation. Avoid breathing toxic fumes. Put in favor of the wind the reaction to the fire. Avoid any contamination of the fertilizer by incompatible materials.
Special protection in fire fighting:	Wear self-contained breathing apparatus in the event of fumes.

### SECTION 6: Measures in case of accidental spillage.

#### 6.1. Measures in case of accidental spill

Personal precautions:	Avoid walking through spilled product and exposure to dust.
-----------------------	---

#### 6.2. Environmental precautions

Environmental precautions:	Take care to avoid contamination of watercourses and drains. Inform the competent authorities in case of accidental contamination of watercourses.
----------------------------	--

#### 6.3. Methods and material for containment and cleaning.

Cleaning methods:	Any fertilizer spillage should be promptly cleaned up, swept up and placed in a clean, open-mouth, labeled container for safe disposal to prevent dust formation.
-------------------	---

#### 6.4. Reference to other sections

Reference to other sections	See section 1 for contact details, section 8 for personal protective equipment and section 18 for waste disposal.
-----------------------------	---

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling.

Precautions for use:	Avoid excessive generation of dust. Avoid contamination by combustible materials (eg diesel, grease, etc.) and other incompatible materials (eg ammonium nitrate). Avoid unnecessary exposure of the product to the atmosphere to prevent moisture absorption. When handling the product for long periods, wear appropriate personal protective equipment (eg gloves). Carefully clean the facilities before carrying out maintenance or repair operations.
----------------------	---

#### 7.2. Conditions for safe storage, including possible incompatibilities

Precautions for use:	Place away from sources of heat and flames. Always keep it away from combustible materials and substances mentioned in section 10. In the field, make sure that the fertilizer is not stored near hay, straw, diesel grain, etc. When storing in bulk, ensure that strict housekeeping standards are followed. Do not allow smoking or the use of naked portable lamps in the storage area. Restrict the size of the piles or piles (in accordance with current regulations) and leave a free space of at least 1 meter around the piles of bags or piles). Any building used for storage should be dry and well ventilated.
----------------------	--

Recommended packing materials:	The appropriate materials for the containers are: stainless steel, AISI 304 and 316, glass and synthetic plastics. Do not use non-ferrous metals and alloys (copper and its alloys, zinc, lead...)
--------------------------------	--

### 7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in section 1.2. Note: stability and reactivity see section 10.
---------------------	---

## SECTION 8: Exposure controls/personal protection.

### 8.1. Control parameters

		Occupational exposure limit values					
Component		UREA					
CAS		57-13-6					
Derivado del ISQ	DNEL	Oral	SISTEMICO	TRABAJADOR		CONSUMIDOR	
			CORTO PLAZO	INDUSTRIAL	PROFESIONAL		
		LARGO PLAZO	NO APLICA	NO APLICA	42 mg/Kg pc/día		
		Inhalatorio	CORTO PLAZO	292 mg/m <sup>3</sup>	292 mg/m <sup>3</sup>	125 mg/m <sup>3</sup>	
			LARGO PLAZO				
		Dermal	CORTO PLAZO	580 mg /kg pc/día	580 mg /kg pc/día	580 mg /kg pc/día	
LARGO PLAZO							
	PNEC	agua	aire	suelo	microbiológico	sedimento	oral
		Agua superficial dulce: 0.047 mg/l	No disponible	No disponible	No requerido	No requerido	No requerido

### 8.2. Exposure controls.

Ingering measures and hygienic controls:	Avoid high concentrations of dust and provide ventilation where necessary. During handling do not eat, drink or smoke. Wash your hands after handling the product and before eating, drinking or smoking. Use the sink at the end of the workday.
Individual protection:	<b>Eyes:</b> Wear appropriate safety glasses depending on the tasks. <b>Skin and body:</b> work clothes. <b>Hand:</b> Wear suitable gloves (eg rubber or leather) when handling the product for long periods of time. <b>Respiratory:</b> if the concentration of dust is high and/or ventilation is insufficient, use a dust mask or respirator with a suitable filter.
Environmental exposure controls	See section 6. Advice regarding personal protection is valid for high levels of exposure. Choose the protections adapted to the risks of exposure.

## SECTION 9: Physical and chemical properties

### 9.1. Basic information on physical and chemical properties.

Appearance	Solid. White.
Colour:	White
Odour:	Odourless
pH:	pH aqueous solution (100g/l) a 20° 9-10
Melting point:	134°C (It decomposes)
Initial boiling point and range:	It decomposes > 134°C
Inflation point:	NA
Evaporation rate:	NA
Flammability (solid, gas):	NA
Upper/lower flammability limit:	NA
Steam pressure at 20°C:	NA
Steam pressure at 20°C:	NA
Apparent density at 20°C:	700-800 kg/m <sup>3</sup>
Water solubility:	Extremadamente soluble, ej 624 g/l a 20°C
Partition coefficient n-octanol/water:	LgPow < - 1,73
Auto-ignition temperature:	NA
Decomposition temperature:	It decomposes> 134°C
Explosive properties:	Urea by itself does not present an explosion hazard. May form explosive mixtures with strong acids (nitric and perchloric) or nitrates. When urea is heated under strong confinement, it can become explosive.

### 9.2. Other information.

Other information:	Molecular weight Solubility in fats: 33.3% (w/w) in glycerol.
--------------------	--

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity:	It is stable under normal conditions of storage, handling and use (see section 7).
-------------	--

## 10.2. Chemical stability

Stability:	It is stable under normal conditions of storage, handling and use (see section 7).
------------	--

## 10.3. Possibilities of chemical reactions

Possibilities of chemical reactions	When heated above 134°C it decomposes giving off NOx and ammonia.
-------------------------------------	---

## 10.4. Conditions to avoid

Conditions to avoid	Proximity to sources of heat or fire. Contamination by incompatible materials. Heating above 134° (decomposition to gases). Unnecessary exposure to atmosphere. Heating under confinement. Welding or thermal work on plant equipment that may contain traces of fertilizer, without first having been washed to remove traces of the product.
---------------------	---

## 10.5. Incompatible materials

Materials should be avoided	Combustible materials, strong oxidizers, acids, alkalis, nitrates, nitrites, sodium or calcium hypochlorite. Mixing solid urea with solid ammonium nitrate produces a slime. Urea reacts with sodium or calcium hypochlorite to form explosive nitrogen trichloride.
-----------------------------	--

## 10.6. Hazardous decomposition products

Hazardous decomposition products:	In case of fire, see section 5. When strongly heated, it melts and decomposes, releasing toxic gases (eg NOx, ammonia). See section 2 and 9.
-----------------------------------	---

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution:	Not available						
<b>Acute toxicity</b>							
	Componente	Nº CAS	Método	Especies	Vía	Resultado	
	Urea	57-13-6	OECD 401	rata	oral	LD50: 14,3 - 15 mg/kg pc	
<b>Sensitization:</b>							
Sensitization:	No known significant effects or critical hazards						
<b>Chronic toxicity:</b>							
Chronic toxicity:	No known significant effects or critical hazards						
<b>Carcinogenicity:</b>							
Carcinogenicity:	No known significant effects or critical hazards						
<b>Mutagenicity:</b>							
Mutagenicity:	No known significant effects or critical hazards						
<b>Reproductive toxicity:</b>							
Reproductive toxicity:	Based on available data the classification criteria are not met						
<b>Notes:</b>							
Notes:	If the product is handled and used correctly it is considered unlikely that adverse health effects will occur.						

## SECTION 12: Ecological information

### 12.1. Toxicity

Aquatic toxicity:	Nº CAS	Peces (leuciscus idus)	Crustáceos (daphnia magna)	Algas (microcystis aeruginosa)	
	57-13-6	CL50 (96h) > 6810 mg/l	CL50 (24h) > 10000	CL50 (192h) = 47 MG/L	

### 12.2. Persistence and degradability

Persistence and degradability	Componente	Nº CAS	Vida acuática	Fotólisis	Biodegradabilidad
	Urea	57-13-6	No disponible	No disponible	10,9 mg/l en 1h a 20°C

### 12.3. Bioaccumulative potential

Bioaccumulative potential	Componente	Nº CAS	Coefficiente de reparto octanol-agua (kow)	Fatos de bioconcentración (BCF)	Potencial de bioacumulación
	Urea	57-13-6	-	1,73-	Bajo

### 12.4. Soil mobility

Soil mobility:	Componente	Nº CAS	Resultado
	Urea	57-13-6	Soluble en agua

### 12.5. Results of PBT and vPvB assessment.

Results of PBT and vPvB assessment.	Not available
-------------------------------------	---------------

### 12.6. Other adverse effects

Other adverse effects	No info
-----------------------	---------

### 12.7. Other adverse effects

Other adverse effects:	None known.
------------------------	-------------

## SECCIÓN 13: Disposal Considerations

### 13.1. Waste treatment methods

Waste treatment methods	Depending on the degree of contamination, dispose of as fertilizer or at a licensed waste facility. Apply local or national legislation for its elimination. Empty bags must be returned for recycling or made available as non-hazardous material (see section 7).
-------------------------	---

## SECTION 14: Transportation Information

General:	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID)
----------	---

### 14.1. UN number

Not applicable	
----------------	--

### 14.2. UN shipping designation

Not applicable	
----------------	--

### 14.3. Dangerous transport class(es)

No transportation warning sign	
--------------------------------	--

### 14.4. Packaging group

Not applicable	
----------------	--

### 14.5. Environmental hazards

Hazardous polluting substance/marine pollutant. Do not.	
--	--

### 14.6. Special precautions for users

Not applicable	
----------------	--

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable
--	----------------

## SECCIÓN 15: Regulatory information

### 15.1. Safety, health and environment regulations/legislation specific for the substance or mixture

EU legislation	Regulation (CE) No 1907/2006 of the European Parliament and of the Council, of December 18, 2006, regarding Registration, Evaluation, Authorization and res (REACH) (modified). Regulation (EU) No. 2015/830 Regulation (CE) n° 1272/2008 of the European Parliament and of the Council of December 16, 2008 on classification, labeling and packaging of substances and mixtures (modified)
----------------	--

### 15.2. Chemical Safety Assessment

Chemical Safety Assessment carried out for urea as a substanc

## SECTION 16: Others information

Hazard statements	
Precautionary advice:	P102: Keep out of reach of children P270: Do not eat, drink or smoke when using this
Bibliographic references and data sources: Chemical safety assessment of urea. Guidance documents EFMA/FERTILIZER EUROPE TFI HPV data; NOTOX *Regulation (EU) 2015/830 *Regulation (CE) 1907/2006 *Regulation (EU) 1272/2008	
Abbreviations and acronyms	
VLA-ED: Environmental limit value (daily exposure)	
VLA-EC: Environmental limit value (short duration)	
NOAEL: No Observed Adverse Effect Dose	
LD50: lethal dose 50% LC50: lethal concentration 50%	
DNEL: Derived No Effect Concentration	
PNEC: Predicted No Effect Concentration	

LOEC: lowest observed effect concentration
NOEC: No Observed Effects Concentration
NOAEC: No Observed Adverse Effect Concentration