

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II / Regulation (EU) No. 2015/830.
- Germany

Date of issue/ Date of revision : 02.02.2017
Date of previous issue : 13.12.2013
Version : 3.0



SAFETY DATA SHEET

Harnstoff 46 % N GRAN

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

1.1 Product identifier

Product name : Harnstoff 46 % N GRAN
EC number : 200-315-5
REACH Registration number : 01-2119463277-33
CAS number : 57-13-6
Product code : PA385G
Product type : Solid (granulates)
Chemical formula : CH4N2O

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

Identified uses
Industrial distribution. Industrial USE to formulate chemical product mixtures. Industrial USE to formulate fertilisers product mixtures. Professional formulation of fertiliser products. Professional USE as fertiliser at Farm - loading and spreading. Professional USE as fertiliser in Greenhouse. Professional USE as liquid fertiliser in open field (e.g. Fertigation). Professional USE as fertiliser - maintenance of equipment.

Uses advised against : None identified.

1.3 Details of the supplier of the safety data sheet

Address : Yara GmbH & Co. KG
Street : Hanninghof 35
Postal code : 48249
City : Dülmen
Country : Germany

P.O. Box Address

P.O. Box : 1464
Postal code : 48235
City : Dülmen
Country : Germany
Telephone number : +49 2594 798 0
Fax no. : +49 2594 798 116
e-mail address of person responsible for this SDS : sdsfertde@yara.com

1.4 Emergency telephone number**National advisory body/Poison Center**

Name : Giftinformationszentrum Erfurt / Giftinformationszentrum Göttingen
Telephone number : + 49 361 730730 / + 49 551 19240
Hours of operation : 24 h / 24 h

Supplier

Telephone number : +49 38202 53512
Hours of operation : (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification : Not classified.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

2.2 Label elements

Signal word : No signal word.

Hazard statements : Not applicable.

Precautionary statements

General : Not applicable.

EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Other hazards which do not result in classification : Product forms slippery surface when combined with water.

SECTION 3: Composition/information on ingredients

3.1 Substances : Mono-constituent substance

Product / ingredient name	Identifiers	%	Classification	Type
			Regulation (EC) No. 1272/2008 [CLP]	
urea	RRN: 01-2119463277-33 EC: 200-315-5 CAS : 57-13-6	>= 90 - < 100		[A]

Type

[A] Constituent

[B] Impurity

[C] Stabilizing additive

See Section 16 for the full text of the H statements declared above.

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Rinse with plenty of running water. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

- Skin contact** : Wash with soap and water. Get medical attention if irritation develops.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if adverse health effects persist or are severe.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None identified.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : No specific fire or explosion hazard.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
ammonia
Avoid breathing dusts, vapors or fumes from burning materials.
In case of inhalation of decomposition products in a fire, symptoms may be delayed.

5.3 Advice for firefighters

- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- Additional information** : None.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 - Environmental precautions

- : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

- Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container.

Dispose of via a licensed waste disposal contractor.

- Large spill** : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

- Recommendations** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

- Recommendations** : Not available.
- Industrial sector specific solutions** : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

- Remark** : No exposure limit value known.
- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Reference should be made to monitoring standards, such as the following:
European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy)
European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents)
European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents)
Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product / ingredient name	Type	Exposure	Value	Population	Effects
urea	DNEL	Short term Dermal	580 mg/kg bw/day	Workers	Systemic
urea	DNEL	Short term Inhalation	292 mg/m ³	Workers	Systemic
urea	DNEL	Long term Dermal	580 mg/kg bw/day	Workers	Systemic
urea	DNEL	Long term Inhalation	292 mg/m ³	Workers	Systemic

PNECs

Product / ingredient name	Type	Compartment Detail	Value	Method Detail
urea	PNEC	Fresh water	0,047 mg/l	Assessment Factors
urea	PNEC	Salt water	0,047 mg/l	Not applicable.

8.2 Exposure controls

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. A washing facility or water for eye and skin cleaning purposes should be present.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. For general applications, we recommend gloves with a thickness typically greater than 0.35 mm. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : In case of inadequate ventilation wear respiratory protection.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****Appearance**

- Physical state** : Solid (granulates)
- Color** : White.
- Odor** : Odorless.slight, ammoniacal
- Odor threshold** : Not determined.
- pH** : 9,5 [Conc. (% w/w): 100 g/l]

Melting point/freezing point	: 134 °C
Initial boiling point and boiling range	: Not determined.
Flash point	: Not applicable
Evaporation rate	: Not determined
Flammability (solid, gas)	: Non-flammable.
Upper/lower flammability or explosive limits	: Lower: Not determined Upper: Not determined
Vapor pressure	: 0,000016 hPa @ 20 °C
Vapor density	: Not determined
Relative density	: Not determined
Bulk density	: Not determined
Density	: 1,33 g/cm ³
Solubility(ies)	: Easily soluble in the following materials: cold water
Water solubility	: > 100 g/l
Partition coefficient: n-octanol/water	: Not determined
Auto-ignition temperature	: Not determined
Viscosity	: Dynamic: Not determined Kinematic: Not determined
Explosive properties	: None.
Oxidizing properties	: None.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

<u>10.1 Reactivity</u>	: No specific test data related to reactivity available for this product or its ingredients.
<u>10.2 Chemical stability</u>	: The product is stable.
<u>10.3 Possibility of hazardous reactions</u>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<u>10.4 Conditions to avoid</u>	: Avoid contamination by any source including metals, dust and organic materials.
<u>10.5 Incompatible materials</u>	: Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride.
Remark	: Reactive or incompatible with the following materials: Oxidizing agents acids alkalis

Nitrites and nitrates

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product / ingredient name	Result	Species	Dose	Exposure	References
urea	LD50 Oral	Rat	14.300 mg/kg OECD 401	Not applicable.	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary

Skin : No known significant effects or critical hazards.
Eyes : No known significant effects or critical hazards.
Respiratory : No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

Skin : No known significant effects or critical hazards.
Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Product / ingredient name	Result	Species	Dose	Exposure	References
urea	Negative - Oral - NOAEL	Rat	2.250 mg/kg	7 days per week	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Product / ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure	References
urea	Not applicable.	Not applicable.	Negative	Rat	Oral : 500 mg/kg	7 days per week	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Information on the likely routes of exposure : No known significant effects or critical hazards.

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : No specific data.

Skin contact : No specific data.

Eye contact : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

Product / ingredient name	Result	Species	Dose	Exposure	References
urea	Chronic NOAEL Oral	Rat	2.250 mg/kg	12 months 7 days per week	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Toxicokinetics

- Absorption** : Rapidly absorbed.
- Distribution** :
Not metabolized within liver tissues before entering the systemic circulation.
- Metabolism** : Metabolite is not known to be toxic.
- Elimination** : The chemical and its metabolites are fully excreted and do not accumulate within the body.

SECTION 12: Ecological information**12.1 Toxicity**

Product / ingredient name	Result	Species	Exposure	References
urea				
	Acute LC50 6.810 mg/l Fresh water	Fish	96 h	IUCLID 5
	Acute EC50 10.000 mg/l Fresh water	Water flea	24 h	IUCLID 5
	Chronic No-observable-effect-concentration 47 mg/l Fresh water	Algae	192 h	IUCLID 5

- Conclusion/Summary** : No known significant effects or critical hazards.

12.2 Persistence and degradability

Product / ingredient name	Test	Result	Dose	Inoculum	References
urea	302B Inherent Biodegradability: Zahn-Wellens/EMPA Test	96 % - Inherently biodegradable - 16 d	mg/l	Activated sludge	IUCLID

- Conclusion/Summary** : No known significant effects or critical hazards.

12.3 Bioaccumulative potential

Product / ingredient name	LogPow	BCF	Potential
urea	1,73	Not applicable.	low

Conclusion/Summary : No known significant effects or critical hazards.

12.4 Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : This product may move with surface or groundwater flows because its water solubility is: high

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

European waste catalogue (EWC)

Waste code	Waste designation
06 10 99	wastes not otherwise specified

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact

with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulation: ADR/RID	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information	

Regulation: ADN	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information	
<u>Danger code</u>	: Not applicable.

Regulation: IMDG	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information	
<u>Marine pollutant</u>	: No.

Regulation: IATA	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information	
<u>Marine pollutant</u>	: No.

14.6 Special precautions for user : Transport within user's premises: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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

Not applicable.

14.8 IMSBC

Bulk cargo shipping name : UREA
Class : Not applicable.
Group : C
Marpol V : Non-HME

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**EU Regulation (EC) No. 1907/2006 (REACH)****Annex XIV - List of substances subject to authorization****Annex XIV:** None of the components are listed.**Substances of very high concern:** None of the components are listed.

EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.
AOX : Not available.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

Storage class (TRGS 510) : 13
Hazardous incident ordinance : Not available.
Hazard class for water : WGK 1,
Technical instruction on air quality control : TA-Luft Number 5.2.1: 99,8 %

Notes : To our knowledge no other country or state specific regulations are applicable.

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Abbreviations and acronyms :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- DMEL = Derived Minimal Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- PBT = Persistent, Bioaccumulative and Toxic
- vPvB = Very Persistent and Very Bioaccumulative
- bw = Body weight

Key literature references and sources for data :

- EU REACH IUCLID5 CSR.
- National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances.
- Sphera Solutions Inc., 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada.
- Regulation (EC) No 1272/2008 Annex VI.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	Calculation method

Full text of abbreviated H statements : Not applicable.

Full text of classifications [CLP/GHS] : Not applicable.

Revision comments : The safety data sheet has been revised according to Commission Regulation (EU) 2015/830.

Date of printing : 18.03.2017

Date of issue/ Date of revision : 02.02.2017

Date of previous issue : 13.12.2013

Version : 3.0

Prepared by : Yara Chemical Compliance (YCC).

|| Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information provided in this Safety Data Sheet is accurate as at the date of its issue. The information it contains is being given for safety guidance purposes and relates only to the specific material and uses described in it. This information does not necessarily apply to that material when combined with other material(s) or when used otherwise than as described herein, since all materials may represent unknown hazards and should be used with caution. Final determination of the suitability of any material is the sole responsibility of the user.