AB Achema
Safety Data Sheet
In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH), with all subsequent amendments and supplements, and Commission Regulation (EU) No 2020/878

Slow release nitrogen fertilizers „LITFERT StabillioN®"

Revision date: 20/04/2026
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product trade name: Slow release nitrogen fertilizers „LITFERT StabillioN®"
Chemical name of the substance: Urea
Index number according to Regulation (EC) No 1272/2008: not applicable
EC No: 200-315-5
CAS No: 57-13-6
REACH registration number: 01-2119463277-33-XXXX
Other means of identification: None

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Identified uses:
Industrial use
- Industrial use: production of material (continuous and periodic production), including handling, warehousing, quality control.
- Industrial use: formation of chemicals, cosmetics and fertilizers (PC4, PC9a, PC12, PC21, PC39)

Professional use
- Professional use [SU1]: professional use as fertilizers (PC12).

Further customer use
- Further customer use: further customer use as fertilizers (PC12).

1.2.2. Uses advised against: None

1.3. Details of the supplier of the safety data sheet
Manufacturer: AB Achema
Address: Jonalaukio k. 1, Jonavos sen., LT-55296
Country: Lithuania
Phone: +370 349 56736
Manufacturer's website: www.achema.lt
Person responsible for the Safety Data Sheet: D. Bačianskas, d.bacianskas@achema.com.

1.4. Emergency telephone number
Please contact: the Poison Information Bureau in Lithuania by phone +370 (5)2362052 or call the single emergency number 112.
Helpdesk services work: 24 hours a day, 365 days a year.
Other assistance (language in which assistance is provided): assistance is provided in Lithuanian.
Poison Control Centres in Europe are available on site https://poisoncentres.echa.europa.eu/appointed-bodies
Telephone numbers of poison control centres in the European Economic Area: **IRELAND** (Dublin) +353 1 8379964; **AUSTRIA** (Vienna) +43 1 406 43 43; **BELGIUM** (Brussels) +32 70 245 245; **BULGARIA** (Sofia) +359 2 9154 409; **CZECH REPUBLIC** (Prague) +420 224 919 293; **DENMARK** (Copenhagen) 82 12 12 12; **ESTONIA** (Tallinn) 112; **GREECE** (Athens) +30 10 779 3777; **ICELAND** (Reykjavik) +354 525 111, +354 543 2222; **ITALY** (Rome) +39 06 305 4343; **LATVIA** (Riga) +371 704 2468; **MALTA**

(Valletta) 2425 0000; **NORWAY** (Oslo) 22 591300; **NETHERLANDS** (Bilthoven) +31 30 274 88 88; **FRANCE** (Paris) +33 1 40 0548 48; **FINLAND** (Helsinki) +358 9 471 977; **SWEDEN** emergency cases 112; in less acute cases 040 456 6700; **HUNGARY** (Budapest) 06 80 20 11 99; **GERMANY (Berlin)** +49 30 19240.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with Regulation (EC) No. 1272/2008 [CLP]:
Does not meet the criteria for classification set out in Regulation (EC) No 1272/2008.

2.2. Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 [CLP]:
Precautionary statements:
P102: Keep out of reach of children.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing eyes.

2.3. Other hazards

The product does not meet PBT and vPvB criteria according to Annex XIII of Regulation (EC) No 1907/2006.
The product is non-flammable. At temperatures above 130 °C, it decomposes to ammonia and isocyanic acid. Freely soluble in water. Hygroscopic.
This material does not contain any components considered to have endocrine-disrupting properties pursuant to Article 59 (1) of the REACH Regulation, Commission Delegated Regulation (EU) 2017/2100, or Commission Regulation (EU) 2018/605, in concentrations of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

According to the REACH Regulation (EC) No 1907/2006 the product is a mono-constituent substance.
Identity of the components of the mixture.

CAS No.	EC No.	Identification number according to Regulation (EC) No 1272/2008	REACH registration No.	Mass fraction, %	Chemical name	Classification in compliance with Regulation (EC) No. 1272/2008
57-13-6	200-315-5	Not applicable	01-2119463277-33-XXXX	98.8 – 100.0	urea	Does not meet classification criteria
108-19-0	203-559-0	Not applicable	Not applicable due to impurity of chemical substance – urea	≤ 1.2	biuret	Does not meet classification criteria

SECTION 4: First aid measures

4.1. Description of first aid measures

The material can get through: urea dust through the respiratory tract.
Inhalation: Remove the affected person from the area contaminated with urea dust, seek medical advice if health deterioration occurs.
Skin contact: Wash the affected area with plenty of water. Remove contaminated clothing and wash them before reuse. If skin irritation persists, seek medical advice.
Eye contact: Immediately after the eye contact rinse eyes with plenty of water for at least 10 minutes and seek medical advice.

Ingestion: Rinse the mouth with water. Do not induce vomiting. Seek medical advice. If the victim feels unwell but is conscious, call for aid immediately and give him/her to drink water before it arrives.

Personal protective equipment recommended for first aid responders: Observe general requirements of occupational hygiene. Avoid inhalation of product dust. Product contact with eyes is prohibited. Avoid repeated or prolonged contact with skin or clothing. Wear suitable protective clothing and gloves.

4.2. Most important symptoms and effects, both acute and delayed

Inhaled: There is no available data on the inhalation of the product which causes adverse symptoms.
Skin contact: May cause skin irritation on prolonged contact.
Eye contact: Eye irritation.
Ingestion: The product is not acutely toxic. Possible symptoms are nausea, vomiting, possible fainting.

4.3. Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: carbonic acid gas, water foam extinguishers.
Unsuitable extinguishing media: Chemical fire extinguishers.

5.2. Special hazards arising from the substance or mixture

When heated to 120÷130 ºC under a vacuum, the product sublimes without decomposition. At higher temperatures (160÷190 ºC) it decomposes releasing ammonium cyanate. At the atmospheric pressure at 180÷190 ºC it decomposes releasing biuret, cyanic acid. At temperatures higher than 200 ºC the product decomposes releasing ammonium and cyanic acid. Auto-ignition temperature: +715 ºC.

5.3. Advice for firefighters

Firefighters must use personal protective equipment (safety shoes, special sealed work suits, protective gloves, eye and face protection, respiratory protection measures) in accordance with LST EN 469.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel: In the event of an accident, safely leave the place using personal protective equipment.

6.1.2. For emergency responders:

Wear protective clothing. Particular danger of slipping on leaked/spilled product. Avoid substance contact. Avoid generation of product dusts. Avoid inhalation of dusts. Ensure supply of fresh air in enclosed rooms. Personal precautions and collective precautions: filtering gas masks containing K mark cartridge, as well as personal protection measures as specified in section 8 of this SDS.

6.2. Environmental precautions

In the event of accidental spillage or release into the environment, do not allow the substance to enter drains, surface or ground water.

6.3. Methods and material for containment and cleaning up

Vacuum or sweep the spilled product into properly labelled disposal or waste containers. Dispose of the product waste in accordance with the requirements of sub-section 13.1 of this safety data sheet. If the product is not heavily contaminated, it can be used as a fertilizer. Wash the place of the former debris with plenty of water.

6.4. Reference to other sections

See section 8 of this safety data sheet for personal protection and section 13 for waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Technical measures/precautions:

Observe general requirements of occupational hygiene. Avoid generation and inhalation of product dust. Avoid product contact with eyes. Wear protective glasses, while spraying the fertilizer solution or using the product in other ways. Avoid repeated or prolonged contact with skin or clothing. Wear suitable protective clothing. Wear gloves when spreading the product as fertilizers. Wash hands after working with fertilizers.

Requirements for the packaging of chemical substances: fertilizers are packaged in polypropylene bags.

7.2. Conditions for safe storage, including any incompatibilities

In Lithuania, storing premises where fertilizers are stored must comply with the regulations of the Minister of Agriculture of the Republic of Lithuania of 2013 December 9th order No. 3D-825, "On Approval of the Rules for Technological Design of Warehouses for Mineral Fertilizers and Plant Protection Products", UAA TPT 10: 2013, as amended and supplemented thereafter. In other countries, the product must be stored in accordance with the storage requirements in force in those countries.

Pre-packaged urea and slow-release fertilizers may be stored in warehouses or outdoor sites.

Unpackaged urea and slow-release fertilizers must be stored in warehouses. Unpackaged urea and slow-release fertilizers are not allowed to be stored outdoors.

Storage conditions for the product in warehouses.

1. Warehouses must be closed, covered, dry, ventilated and clean.

2. The warehouse room must be a single storey building, without any basement or semi-basement. Once a year, the warehouse room must be emptied and the warehouse floor must be thoroughly cleaned.
3. In warehouses, the temperature must not exceed 30°C.
4. Warehouses of urea must be equipped with natural ventilation ensuring the change of the air in the room at least once an hour during non-working hours. Mechanical ventilation must be activated during work. Its intensity is calculated aiming to prevent the accumulation of harmful substances above the limit in the indoor air during work.
5. The size of the product piles and stacks in the warehouse must comply with the national regulations.
6. The height of piles of the unpackaged product or stacks of the pre-packaged product must be such that the distance between their tops and the ridge, beams and lamp holders is at least 1 m. This is necessary to prevent the product from being affected by heat (including frictional heat) and to prevent contamination of it.
7. In warehouses, a space of at least 1 meter wide must be left around each stack of the pre-packaged product (as well as from walls of the building). Inside the warehouses, fire and emergency vehicle paths must be left between all stacks of the pre-packaged product and piles of the unpackaged product and between all stacks of the pre-packaged product, which must be at least 0.5 m wider than the vehicle, but not narrower than 3 m.
8. When storing the unpackaged product, the storage room can be divided into several compartments of convenient shape and dimensions. Their size, shape and other parameters must comply with the national regulations.
9. In warehouses, big bags of the pre-packaged product must be stored stacked on flat pallets without protruding nails, wood screws, wood chips or other sharp objects that may damage the big bag.
10. As a rule, the product is loaded into the warehouse at temperatures of 30–55°C. Temperatures above 55°C should be avoided in order to prevent the product from collapsing.
11. The product is hygroscopic, so it can absorb moisture from the air when stored unpackaged in a pile. Adequate precautions must be taken to protect the product from moisture. This can be done by covering the product piles with a waterproof film. Warehouse doors should be kept closed as much as possible.
12. It is STRICTLY PROHIBITED to use explosives for breaking up the piles of the product that has stuck together into pieces. The product can be crushed by mechanical means.

Storage conditions for the product in outdoor sites.

1. The outdoor sites must have a hard floor coating.
2. In outdoor sites, the pre-packaged product must be stored in stacks.
3. For outdoor storage of packaged product in stacks, the fertiliser stacks should be placed on pallets to reduce the possibility of the lower bags getting wet and to reduce the amount of spoilt product.
4. The amount of product stored in outdoor sites, the size of the stacks, the distances between them must meet the national requirements.
5. When storing the pre-packaged product on outdoor sites, it must be protected from direct atmospheric precipitation, moisture (rain, snow; the package may not be located in water and water may not collect on it) and direct sunlight.

Conditions for the number of rows allowed for stacking the product.

1. Urea and slow-release fertilizers pre-packaged in big bags of 500 kg cannot be stacked on top of each other in more than 4 rows when stored in stacks.
2. Urea and slow-release fertilizers pre-packaged in big bags of 1000 kg cannot be stacked on top of each other in more than 3 rows when stored in stacks.

Storage conditions for urea and slow-release fertilizers with other products.

1. When storing the pre-packaged and unpackaged product in the same room as other non-explosive and non-flammable pre-packaged and unpackaged solid mineral fertilizers, it must be protected from the possibility of mixing.
2. A sufficient distance must be maintained between stacks of the pre-packaged product and piles of the unpackaged product to prevent contamination of the product with other substances.
3. If ammonium nitrate, nitrophoska and mineral fertilizer mixtures containing nitrates are stored in the same room or place as the product, it must be ensured that they are not stored next to each other and may not come into contact. Storage of the product and the above fertilizers must be organized in such a way that they may not contaminate or affect each other even in the event of fire.
4. Precautions must be taken to avoid accidental mixing of different fertilizer products, even if they are not classified as hazardous. During such accidental mixing, incompatible substances, including those classified as hazardous, with unpredictable properties could be mixed together.

Other conditions for all storage sites.

1. Big bags of the product are stored in a vertical position.
2. For port storage, packed fertiliser bags/spools should be placed on pallets to reduce the possibility of the lower bags getting wet and to reduce the amount of spoiled produce.
3. The storage area of the product at a manufacturer's site, a port, a distributor's site and an end-user's site must be kept out of reach of unauthorized personnel. The warnings "Permitted access only" and other requirements for the safe storage of the product must be posted in clearly visible places in the product storage area.
4. Smoking, open flames, electric heaters with open radiant filaments are prohibited in the product storage area. Do not store the product where it can be exposed to any heat or heating source. "No smoking" warning signs must be posted in highly visible places of the product storage area.
5. Do not transport flammable materials through the product storage area.
6. Do not carry out activities that are not directly related to the storage area (e.g., vehicle maintenance or equipment repair) in warehouses and other storage areas of the product.
7. Do not use organic materials (e.g., sawdust) for cleaning the floor of the product warehouse; use inorganic absorbents (e.g., limestone, sand, dolomite, gypsum).
8. The product spilled during handling must be swept up and safely disposed of. It must be ensured that the spaces between the piles are clean.
9. Avoid storing the product in hot rooms or in direct sunlight, damage to the product packaging, ingress of moisture into the product, and contamination with incompatible substances.
10. Do not store the product near explosives. If explosives are stored in the same place as the product, they must be stored under strict compliance with the national requirements for explosives.
11. The product is not subject to restrictions in accordance with Regulation (EU) No 2019/1148; however, economic operators selling, using and protecting the product must report suspicious transactions, material disappearances and thefts of this substance to a national contact point in the Member State where the suspicious transaction, disappearance or theft occurred. Refer to:
https://home-affairs.ec.europa.eu/policies/internal-security/counter-terrorism-and-radicalisation/protection/legislation-chemicals-used-home-made-explosives_en
12. In addition to the storage conditions for the product presented here, the recommendations provided in the document "Guidelines for the storage, handling and transportation of solid mineral fertilizers" (2007) published by the European Fertilizer Manufacturers Association "Fertilizers Europe" must be followed.

The guaranteed shelf life of urea and slow-release fertilizers stored in warehouses is 12 months from the date of manufacture, and 9 months from the date of manufacture when stored outdoors.

As of the date of approval of these storage conditions, the "Storage Conditions for Ammonium Nitrate, Calcium Ammonium Nitrate, Nitrogen Fertilizers with additives, Urea, and Slow-Release Nitrogen Fertilizer LITFERT StabillioN" approved by Technical Director on 12/04/2019 are repealed.
The product is not subject to restrictions according to the Resolution No 966 of the Government of the Republic of Lithuania of 7 of August 2004 "On Approval of the Provisions on the Prevention, Liquidation and Investigation of Industrial Accidents and the List of Materials, Mixtures or Preparations of Hazardous Substances in the Hazardous Objects and the Description of the Attribution Criteria for the List thereof" (Official Gazette, 2004, No 130-4649) with all subsequent amendments and supplements) and according to Part 2 of Annex I of Directive 2012/18/EU.

7.3. Specific end use(s)
All final uses specified in sub-section 1.2.1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
Exposure limit values of the chemical in the occupational environment air:
Long-term exposure limit value (LTELV): 10 mg/m^3 according to urea (applicable in Lithuania according to hygiene regulations HN 23).
Short-term exposure limit value (STELV): not applicable (in Lithuania according to hygiene regulations HN 23).
Non-limit value (s) (DNEL): A DNEL is given for the physicochemical property of the urea that is likely to cause the greatest adverse effect.

Workers exposure

Exposure mode	Exposure type	Hazard	Physiochemical property that could caus the greatest negative effect
Inhaled	Systemic effect – long lasting	DNEL (derived no-effect level) 292 mg/m³	Toxicity
Inhaled	Systemic effect – acute	DNEL (derived no-effect level) 292 mg/m³	Toxicity
Inhaled	Systemic effect – long lasting	The hazard is unknown, but there is no need to collect more hazard information as there is no likelihood of human exposure.	
Inhaled	Local effect – acute	The hazard is unknown, but there is no need to collect more hazard information as there is no likelihood of human exposure.	
Dermal	Systemic effect – long lasting	DNEL (derived no-effect level) 580 mg/kg bw/day	Toxicity
Dermal	Systemic effect – acute	DNEL (derived no-effect level) 580 mg/kg bw/day	Toxicity
Dermal	Local effect – long	The hazard is unknown	

	lasting			
Dermal	Local effect – acute	The hazard is unknown		
Eye contact	Local effect	The hazard is unknown		

Public exposure

Exposure mode	Exposure type	Hazard	Physiochemical property that could caus the greatest negative effect
Inhaled	Systemic effect – long lasting	DNEL (derived no-effect level) 125 mg/m³	Toxicity
Inhaled	Systemic effect – acute	DNEL (derived no-effect level) 125 mg/m³	Toxicity
Inhaled	Local effect – long lasting	The hazard is unknown, but there is no need to collect more hazard information as there is no likelihood of human exposure.	
Inhaled	Local effect – acute	The hazard is unknown, but there is no need to collect more hazard information as there is no likelihood of human exposure.	
Dermal	Systemic effect – long lasting	DNEL (derived no-effect level) 580 mg/kg bw/day	Toxicity
Dermal	Systemic effect – acute	DNEL (derived no-effect level) 580 mg/kg bw/day	Toxicity
Dermal	Local effect – long lasting	The hazard is unknown	
Dermal	Local effect – acute	The hazard is unknown	
Ingestion	Systemic effect – long lasting	DNEL (derived no-effect level) 42 mg/kg bw/day	Toxicity
Ingestion	Systemic effect – acute	DNEL (derived no-effect level) 42 mg/kg bw/day	Toxicity
Eye contact	Local effect	The hazard is unknown	

Predicted no effect concentration(s) (PNEC)

Section	Hazard	Comments/justification
Fresh water	PNEC aqua (fresh water): 0.47 mg/L Periodic releases: No PNEC	Exposure factor: 100 Extrapolation method: exposure factor The PNEC of water was derived using an exposure factor of 100, up t 47 mg/L for M. aeruginosa (the most sensitive culture) **Justification for the PNEC of the re-release:** Separate PNEC of the re-release was not proposed.
See water	PNEC aqua (sea water):	Exposure factor: 100

	0.047 mg/L Periodic releases: No PNEC	Extrapolation method: exposure factor No effect is expected due to the inclusion of urea in the urea cycle.
Freshwater sediment	There is no probability of sediment exposure	No data: It is proposed not to apply and not to derive the PNEC value.
Seawater sediment	There is no probability of sediment exposure	No data: It is proposed not to apply and not to derive the PNEC value.
Microorganisms in sewage treatment systems	The hazard is unknown	Urea is naturally low toxic to microorganisms and is used as a nutrient and a source of nitrogen (N). Based on this, PNEC is not proposed.
Soil	The hazard to soil is unknown	No data: It is proposed not to apply and not to derive the PNEC value.
Air	The hazard is unknown	
Food chain	No bioaccumulation potential	

The product must be manufactured and professionally used following the regulations of Order No 97/406 of the Minister of Social Security and Labour and the Minister of Health of the Republic of Lithuania of 24 July 2001 "On Approval of Regulations for the Protection of Workers from Chemical Factors at Work and Regulations for the Protection of Workers form the Exposure to Carcinogens and Mutagens at Work" (Official Gazette, 2001, No 65-2396), with all subsequent amendments and supplements.

8.2. Exposure controls

Dispose of wastewater in accordance with national legislation.

8.2.1. Appropriate engineering controls: Adequate natural ventilation of good quality must be provided in the storing premises of the product, which would change the air in the premises at least once an hour during non-working hours. Mechanical ventilation must be switched on during operation. Its intensity is calculated taking into account that the amount of harmful substances in the indoor air during operation is not exceeded. When vehicles with internal combustion engines are used for loading, it is necessary to take this into account when calculating the ventilation of the premises.

8.2.2. Individual protection measures:

Respiratory protection: Use a P3 class filtering face piece (respirator) for light dusting. In the event of high dust, use a half mask or mask with filter A2B2E2K2P3 that meets the requirements of LST EN 405.

Hand protection: Wear protective gloves that meet the requirements of LST EN 420, LST EN ISO 21420 for the protection against chemical hazards, and LST EN 388 for the protection against mechanical hazards. Protective gloves must be made of one of the materials listed in the table and must be at least as thick and resistant to penetration as provided.

Glove material	Glove thickness, mm	Breakthrough time of the glove material, min*
Butyl rubber/butyl	0.50	> 480
Nitrile rubber/nitrile latex	0.35	> 480
Fluorocarbon rubber	At least 0.40	> 480
Polychloroprene	At least 0.50	> 480
Natural rubber/natural latex	0.50	> 480
Polyvinyl chloride	0.50	> 480

* the breakthrough time of the glove material is the time taken for the product to come in full contact with the glove. The shorter the breakthrough time, the less resistant the glove material to the product.

The product user must select the glove material from the provided ones taking into account the situation, the nature of the work, the probability of contact of the gloves with the product, and the possible duration of contact. It is recommended to use glove materials with a breakthrough time of at least 480 minutes when working with the product on a regular basis. Gloves should not be used for longer than the breakthrough time when handling the product.
Skin protection creams do not provide sufficient protection against the product.
Note that the breakthrough time indicated herein was determined using urea at 22 °C. When using the product of higher temperature or using mixtures or solutions of urea and other materials at normal temperatures, the resistance of the glove material may be reduced and the permissible life of the gloves must be reduced in such cases. We recommend before starting to use gloves of a new type or those from another manufacturer, make sure that they are sufficiently chemically and mechanically resistant for the work under the current working conditions. If you have any questions about the suitability of any gloves, please contact the glove manufacturers/suppliers.
The inside the gloves should not contain powder which can cause hand skin allergies.
Always check the gloves for tears, cracks or other defects before putting them on. After the work, gloves should be thoroughly cleaned and washed before removing. Sufficient attention must be focused to the hand skin care after the work.
Eye/face protection: sealed safety goggles according or a face shield according to LST EN ISO 16321-1 and LST EN ISO 16321-3.
Other skin protection measures: Working clothes according LST EN ISO 13688, working boots according to LST EN ISO 20345.

Personal hygiene measures: Wash the skin with soap and sufficient amount of water after handling the product and at the end of the working day. After finishing the work change clothes.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

a) Physical state: solid granules in the physical state at a temperature of 20 °C and a pressure of 101.3 kPa.
b) Color: light blue.
c) Odor: light ammonia smell.
d) Melting and solidifying temperature: 407 K or 134 ºC at a pressure of 101,3 kPa. Justification: according to the literature, CRC Handbook, 2006 – the melting point at atmospheric pressure is 133.3 ºC. The melting temperature determined by the differential scanning calorimetry method was 134 °C (source Gwerder et al, 2009).
e) Boiling point or initial boiling point and boiling range: at 101.3 kPa, the product decomposes without reaching the boiling point (source: CRC Handbook, 2006).
f) Flammability: Nonflammable. Justification: On the basis of the literature – Handbook Sax & Lewis, 1987 – and the results of the analyzes carried out (source Gwerder etal, 2009).
g) Upper and lower explosion limits: non-combustible and non-explosive.

h) Flash-point: Based on column 2 of Annex VII to the REACH Regulation, no clarification is provided: product is a solid material which decomposes below the melting point, so it is technically impossible to determine the flash point.
i) Auto ignition temperature: not characteristic at a pressure of 1013 hPa. Justification: there was no evidence of autoinflammability in a proprietary study (Gwerder etal, 2009): the substance melted at 134 °C.
j) Decomposition temperature: urea heated under vacuum up to 120÷130 0C sublimes without decomposition. Decomposes at higher temperatures (160÷190 0C) to form ammonium cyanate. At atmospheric pressure, it decomposes at 180÷190 0C to form biuret, cyanuric acid and amelide. At temperatures above 200 °C, urea decomposes into ammonia and cyanuric acid.
k) pH-value: 9.2 ÷ 9.5 (determined with a solution of 100 g/l at 20 ºC).
l) Kinematic viscosity: production in the form of granules and therefore not detectable.
m) Solubility:
Highly soluble in water: 624 000 mg/l at 20 ºC. Justification: Solubility in water was determined at 624 g / l at 20 °C (source – Gwerder etal, 2009). In the literature – Yalkowsky, 1989 – the declared solubility is 545000 mg / l at 25 °C.
Highly soluble in acetone;
Soluble in glycerin (33,3 % at 15 ºC);
Soluble in ethanol (5,1 % at 20 ^{0}C) (13,1 % at 60 ºC);
Insoluble in chloroform, ether and xylene.
n) Partition coefficient: n-octanol/water (log value): -1.73 at 20 °C. Justification: The logKow set was -1.56, the calculated coefficient was similar to -1.73.
o) Vapor pressure: 0.002 Pa at a temperature of 298 K. Justification: Jones, 1960, states that the vapor pressure is equal to 1.2 x 10 – 5mmHg at 25 °C.
p) Density and / or relative density: according to LST EN 1236 the bulk density of the product is determined 680 ÷ 720 kg/m^3.
q) Relative vapor density: not determined for solids.
r) Particle properties: The granulometric composition:
- from 2 mm to 5 mm is not less than 95%;
- granules smaller than 1 mm is no more than 1.5%;
The average granule size is not less than 2.3 mm.

9.2. Other information

Explosive properties: based on column 2 of Annex VII to the REACH Regulation, this is not detected providing an explanation: urea is a non-combustible substance and does not contain any groups that could lead to explosive properties.
Oxidising properties: based on column 2 of Annex VII to the REACH Regulation, this is not detected providing an explanation: urea is not an oxidizing agent based on the chemical structure of urea, the experience with urea, other data found in the scientific literature, and the criteria applicable under the ADR (urea contains oxygen, but it is connected only with coal).

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is stable under normal storage, transportation and handling conditions (see section 7 "Handling and Storage" of this SDS).

10.2. Chemical stability

The product is stable under normal storage, transportation and handling conditions (see section 7 "Handling and Storage" of this SDS). Stabilizers are not necessary.

10.3. Possibility of hazardous reactions

When heated to 120÷130 ºC under a vacuum, the product sublimes without decomposition. At higher temperatures (160÷190 ºC) it decomposes releasing ammonium cyanate. At the atmospheric pressure and 180÷190 ºC it decomposes releasing biuret, cyanic acid. At temperatures higher than 200 ºC the product decomposes releasing ammonium and cyanic acid. Auto-ignition temperature: +715 ºC.
A fire in the environment where the product is may result in the release of hazardous substances: nitrogen oxides, ammonia.
There is an explosion hazard if the product contacts with chlorine, ammonium nitrate, calcium hypochlorite, chlorinating agents, chromyl chloride, hexanitroethane, sodium hypochlorite, sodium nitrite, sodium perchlorate, nitrosyl perchlorate or phosphorus pentachlorite.
The product may hazardously react with fluorine, strong oxidants, hydrogen peroxide, alkaline chlorites, alkaline chromates, alkalis, alkaline nitrates, perchlorates or titanium pentachloride.

10.4. Conditions to avoid

High temperatures. The temperature in product warehouses must not be higher than 30 °C. As a rule, the product is loaded into the warehouse at a temperature of 30 - 55 °C. Temperatures higher than 55 °C should be avoided in order to prevent the product from collapsing.

10.5. Incompatible materials

Contact with other bulk materials is not permitted. Also see sub-section 7.2 and 10.3 of this SDS.

10.6. Hazardous decomposition products

When heated to 120÷130 ºC under a vacuum, the product sublimes without decomposition. At higher temperatures (160÷190 ºC) it decomposes releasing ammonium cyanate. At the atmospheric pressure and 180÷190 ºC it decomposes releasing biuret, cyanic acid. At temperatures higher than 200 ºC the product decomposes releasing ammonium and cyanic acid. A fire in the environment where the product is may result in the release of hazardous substances: nitrogen oxides, ammonia.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity:

Practical experience/human information: Based on available data, the product does not meet the classification criteria for acute toxicity according to Regulation (EC) No 1272/2008.

Effects on animals

	Exposure dose/concentration	Species	Method	Symptoms/delayed effects	Notes

Acute oral toxicity	LD50: 14,300 mg/kg bw (male) LD50: 15,000 mg/kg bw (female)	Rats	OECD 423	Negative effects have not been determined.	Direct ATE validation for trusted data
Acute dermal toxicity	Any relevant information is not available.				
Acute inhalation toxicity (vapour)	Any relevant information is not available.				

Other information: No data available.
Assessment/classification: Based on the available data, the product does not meet the classification criteria according to Regulation (EC) No 1272/2008.
Skin corrosion/irritation: Studies in rats have shown that urea is non-irritating to skin. Based on these results, urea was interpreted as non-irritating to skin and humans (source: urea registration under the REACH dossier). Based on the available data, it does not meet this classification criterion according to Regulation (EC) No 1272/2008.
Serious eye damage/irritation: Studies in rats have shown that urea is mildly irritating to eyes. Based on medical data on urea-related incidents reported by urea manufacturers, it was interpreted that urea is not classified as an eye irritant to humans (source: urea registration under the REACH dossier). Based on the available data, it does not meet this classification criterion according to Regulation (EC) No 1272/2008.
Respiratory or skin sensitisation: Any relevant information is not available (source: urea registration under the REACH dossier). Based on the available data, it does not meet this classification criterion according to Regulation (EC) No 1272/2008.
Germ cell mutagenicity: According to the results of the Ames-test study performed with various urea concentrations (the test results were negative), it was interpreted that urea does not exhibit mutagenic effects (source: urea registration according to the REACH dossier). Based on the available data, it does not meet this classification criterion according to Regulation (EC) No 1272/2008.
Carcinogenicity: The product does not meet the criteria (Ames-test: negative; source: urea registration according to the REACH dossier). Based on the available data, it does not meet this classification criterion according to Regulation (EC) No 1272/2008.
Reproductive toxicity: The product meets the criteria (Ames-test: negative; source: urea registration according to the REACH dossier). Based on the available data, it does not meet this classification criterion according to Regulation (EC) No 1272/2008.
Specific target organ toxicity (STOT-single exposure): Based on the available data, it does not meet this classification criterion according to Regulation (EC) No 1272/2008.
Specific target organ toxicity (STOT-repeated exposure): Based on the available data, it does not meet this classification criterion according to Regulation (EC) No 1272/2008.
Aspiration hazard: The product does not meet classification criteria.

11.2. Information on the other hazards

11.2.1. Endocrine disrupting properties

Data not available on the current product.

11.2.2. Other information

None.

SECTION 12: Ecological information

12.1. Toxicity

Based on available data, the product does not meet the classification criteria as hazardous for the environment according to Regulation (EC) No 1272/2008.
The maximum allowable concentration of the product in potable water reservoirs cannot exceed the calculated amount of organic substances in accordance with the allowable biochemical concentration (ABC) and dissolved oxygen levels. The maximum allowable urea concentration in water reservoirs of fishery farms is 80 mg/dm^3.
Leuciscus idus (orfe): 96-h LC_{50}> 6.810 mg/L.
Daphnia magna (short-term): 24-h EC_{50}: > 10.000 mg/l.
Daphnia magna (long-term): No data.

Toxicity to fish

Exposure dose/concentration	Test duration	Species used in tests	Result/assessment	Method
LC50: > 10,000 mg/L	48 h	Golden orfe	Urea is of inherently low toxicity for fish	OECD 203
LC50: 6,810 mg/L	96 h	Golden orfe	Urea is of inherently low toxicity for fish	OECD 203

Toxicity to aquatic invertebrates (short-term effects)

Exposure dose/concentration	Test duration	Species used in tests	Result/assessment	Method
LC50: > 10,000 mg/L	24 h	Daphnia magna	Low toxicity level	OECD 202
LC50: 14,241 mg/L	24 h	Aquatic molluscs: Herisoma trivolvis	Low toxicity level	OECD 202

Toxicity to aquatic invertebrates (long-term effects): No relevant data.

Toxicity to algae and aquatic plants

Exposure dose/concentration	Test duration	Species used in tests	Result/assessment	Method
LC50: > 10,000 mg/L	192 h	Algae	Low toxicity level	OECD 209
LC50: > 10,000 mg/L	7 days	Algae	Low toxicity level	OECD 209

12.2. Persistence and degradability

The product is well degradable: 4 mg/L in 1 h at 20 ºC/68 °F, Zahn-Wellens-Test / 400 mg/L 3 h: 2 %, 7 days: 52 %, 14 days: 85 %, 16 days: 96 %. In soil the product is easily transformed into forms well-assimilated by vegetation.

12.3. Bioaccumulative potential

Octanol-water partition coefficient (Kow): low (based on high solubility in water). The product does not have any bioaccumulative properties, does not form any toxic mixture with other substances in the air or groundwater.

Bioconcentration factor (BCF): low. The product does not form any toxic compounds in the soil.

12.4. Mobility in soil
Adsorption coefficient: low (based on the substance parameters).

12.5. Results of PBT and vPvB assessment
The product does not meet any PBT and vPvB criteria according to Annex XIII of Regulation (EC) No 1907/2006.

12.6 Endocrine disrupting properties:
No data available.

12.7 Other side effects:
This material does not contain any components considered to have endocrine-disrupting properties pursuant to Article 59 (1) of the REACH Regulation, Commission Delegated Regulation (EU) 2017/2100, or Commission Regulation (EU) 2018/605, in concentrations of 0.1% or higher.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Wastes from residues. The product waste that are not contaminated with other hazardous substances are classified as non-hazardous waste in accordance with Regulation (EU) No 1357/2014. Product waste must be transferred to waste management institutions. In Lithuania, the product waste must be managed in accordance with the Law on Waste Management of the Republic of Lithuania; in other countries observe the national legislation. The final waste code of the product shall be assigned by the waste holder/manager.

Product packaging waste. All residues of the product must be removed from the bags by gently shaking them. The emptied packaging waste of the product are classified as non-hazardous waste in accordance with Regulation (EU) No 1357/2014. The packaging waste of the product must be transferred to waste management institutions. In Lithuania, such waste must be managed in accordance with the Law on the Management of Packaging and Packaging Waste of the Republic of Lithuania and the applicable waste management rules; in other countries observe the national legislation. The final waste code of the product shall be assigned by the waste holder/manager.
The marking of the product in accordance with (EC) No 1272/2008 may be removed only after completely emptying the packages.
Care must be taken to prevent product waste from entering drains. It is recommended not to encourage disposal of the product with leaks.

SECTION 14: Transport information

14.1. UN Number or ID number
Unavailable because the product is not subject to ADR requirements.

14.2. UN proper shipping name

Unavailable because the product is not subject to ADR requirements.

14.3. Transport hazard class(es)
Unavailable because the product is not subject to ADR requirements.

14.4. Packing group
Unavailable because the product is not subject to ADR requirements.

14.5. Environmental hazards
The product is not classified as hazardous substance according to the UN Orange Book and International Transport Codes RID (Railway), ADR (Road) and IMDG (Sea transport).

14.6. Special precautions for users
The product is transported in all vehicles in accordance with the applicable freight regulations.
Mixing of unpackaged product with other substances is not permitted.
When transporting the product, packed in big bags of 500 kg, by vessels, during the cold season (from 16 September to 15 April), the bags can be stacked on top of each other no more than 7 rows, during the warm season (16 April to 15 September), they may be stacked on top of each other no more than 4 rows.
When transporting the product, packed in big bags of 1000 kg, by vessels, it is possible to load it by stacking the bags on top of each other no more than 3 rows.
When the product is loaded and unloaded on board, when the rain begins to fall, the hold of the vessel must be closed and loading stopped.
When transporting the product packed in big bags in sea containers, bags can be stacked on top of each other in no more than 2 rows.
Do not transport together with incompatible materials.

14.7 Carriage of bulk cargoes by sea in accordance with IMO measures
The hazard class of the product according to the International Maritime Bulk Cargo Code (IMSBC Code) is "Slow Acting Nitrogenous Fertilizer".

SECTION 15: Regulatory information

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

EU legislation
- Regulation (EU) 2019/1009 of the European Parliament and of the Council of 2019 June 5 laying down rules for the supply of EU fertilizing products to the market and amending Regulation (EC) No. 1069/2009 and (EC) no. 1107/2009 and repealing Regulation (EC) No. 2003/2003 (published in the Official Journal of the European Union No. L 170, 25 June 2019) with all subsequent amendments and supplements.

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/9 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC,

93/67/EEC, 93/105/EC and 2000/21/EC) (18 December 2006) (published in the Official Journal of the European Union L 396 of 30 December 2006), with any subsequent amendments and additions.

- Commission Regulation no. (EU) 2020/878 amending Regulation of the European Parliament and of the Council Annex II to Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) (published in Official Journal of the European Union L 203 of 26 June 2020).

- Commission Regulation (EU) No 552/2009 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards Annex XVII (published in the Official Journal of the European Union L164 of 22 June 2009).

- Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (published in the Official Journal of the European Union L353 of 31 December 2008), with any subsequent amendments and additions.

- Commission Regulation (EU) No 1357/2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives (published in the Official Journal of the European Union L365 of 19 December 2014).

- Regulation (EU) 2019/1148 of the European Parliament and of the Council 20th of June 2019 on trade in and use of explosives precursors and amending Regulation (EC) No. 1907/2006 and repealing Regulation (EU) No. 98/2013 (published in the Official Journal of the European Union L 186/1, 2019) as subsequently amended and supplemented.

- Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (published in the Official Journal of the European Union L197 of 27 July 2012).

- Regulations concerning the international carriage of dangerous goods by rail (RID).

- International Maritime Dangerous Goods Code (IMDG).

- International Convention for the Prevention of Pollution from Ships (MARPOL).

- International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (the IBC Code).

National legislation (Lithuania)

- Order No 3D-825 of the Minister of Agriculture of the Republic of Lithuania of 9 December 2013 "On Approval of the Rules for Technological Design of Warehouses for Mineral Fertilizers and Plant Protection Products, ŽŪ TPT 10:2013", as amended and supplemented thereafter.

- Order No 97/406 of the Minister of Health of the Republic of Lithuania of 24 July 2001 "On tApproval of Regulations on Protection of Employees from Risks Related to Exposure to Chemical Agents at Work and Regulations on Protection of Employees from Risks Related to Exposure to Carcinogens and Mutagens at Work" (Official Gazette, 2001, No 65-2396, identification code of the Register of Legislation: 1012230ISAK0097/406), with any subsequent amendments and additions.

- Applicable Law on Waste Disposal of the Republic of Lithuania.

- Applicable Law on Package and Package Waste Handling of the Republic of Lithuania.

- Hygiene regulations HN 23 "Occupational Exposure Limits of Chemicals. General Requirements for Measurements and Effect Assessment".

Hygiene regulations HN 36 "Banned and Restricted Substances".

- Applicable "Regulations for Workers Protection against the Effects of Chemical Factors" and "Regulations for Workers Protection against Carcinogenic Effects";

- Applicable "Procedure of Safety Data Sheet Requirements and Supply thereof to Professional Users";

- Applicable "Rules on Labelling of Items (Products) to be Sold in Lithuania and Referring Prices thereof";

- Applicable "Rules on Waste Disposal";

- Resolution No 966 of the Government of the Republic of Lithuania of 17 August 2004 „On Approval of the Provisions on the Prevention, Liquidation and Investigation of Industrial Accidents and the List of Materials, Mixtures or Preparations of Hazardous Substances in the Hazardous Objects and the Description of the Attribution Criteria for List thereof" (Official Gazette, 2004, No 130-4649, No 131-4731; 2008, No 109-4159; 2009, No 90-3855; 2010, No 59-2894; 2012, No 61-3078) with all subsequent amendments and supplements.

- LST EN 388 "Protective gloves against mechanical risks";

- LST EN 405+A1 "Respiratory protective devices. Valved filtering half masks to protect against gases or gases and particles. Requirements, testing, marking"

- LST EN 420 "Protective gloves. General requirements and test methods";

- LST EN 469 "Protective clothing for firefighters. Performance requirements for protective clothing for firefighting";

- LST EN ISO 780 "Packaging. Distribution packaging. Graphical symbols for handling and storage of packages";

- LST EN ISO 13688 "Protective clothing. General requirements (ISO 13688:2013)";

- LST EN ISO 16321-1 „Eye and face protection equipment for work". Part 1. General requirements (ISO 16321-1:2021)";

- LST EN ISO 16321-3 „Eye and face protection equipment for work". Part 3. Additional requirements for mesh guards (ISO 16321-3:2021)";

- LST EN ISO 20345 „Personal protective equipment. Safe footwear (ISO 20345: 2011)";

- LST EN ISO 21420 „Protective gloves. General requirements and test methods".

Additional information presented on the package (container) label of chemical substance:
- visual signs No 6 "Protect from rain" and No 4 "Protect from sun" in compliance with LST EN ISO 780.

Additional information about the relevant Community provisions on safety, health and the environment for the product
The product is not subject to restrictions according to Resolution No 966 of the Government of the Republic of Lithuania of 7 August 2004 "On Approval of the Provisions on the Prevention, Liquidation and Investigation of Industrial Accidents and the List of Materials, Mixtures or Preparations of Hazardous Substances in the Hazardous Objects and the Description of the Attribution Criteria for List thereof" (Official Gazette, 2004, No 130-4649) with all subsequent amendments and supplements) and according to Part 2 of Annex I of Directive 2012/18/EU.

Product Restrictions on Regulation (EU) No. 2019/1148: The product is not subject to restrictions in accordance with Regulation (EU) No. 2019/1148. However economic operators selling, using, and protecting the product must, in accordance with this regulation to report suspicious transaction of this

substance, material disappearances and theft or theft or loss of theft to a national contact point according to contacts found on the internet link:
https://home-affairs.ec.europa.eu/policies/internal-security/counter-terrorism-and-radicalisation/protection/legislation-chemicals-used-home-made-explosives_en
For substances on the candidate list of substances of very high concern. The product does not contain chemicals included in the candidate list of substances of very high concern, which due to their content (≥ 0.1%) according to Regulation (EC) No. 1907/2006 should be declared.

15.2. Chemical safety assessment

The product does not comply with the classification criteria set out in Regulation No 1272/2008 [CLP], therefore, its chemical safety assessment has not been carried out according to Annex 14 of Regulation (EC) No 1907/2006.

SECTION 16: Other information

- Revision date: 20/04/2026
- Version No: 12.0
- Revision No: 0
- Amendment date: 20/04/2026

(i) Amendments indicated:
The following changes were made to the safety data sheet as compared to the previous version:
The headline: Revision date, version number and issuing date of this safety data sheet has been changed;
- sub-section 1.4: The inactive mobile number has been removed and the listed website has been updated;
- sub-section 2.3: Information regarding substances with endocrine-disrupting properties has been included;
- sub-section 12.6: Information regarding substances with endocrine-disrupting properties has been included;
- section 16: revision date, version number and issuing date of this safety data sheet has been changed.

(ii) Abbreviations and acronyms:
ATE – acute toxicity estimate;
ADR– European Agreement concerning the international carriage of dangerous goods;
C&L – Classification and labelling;
CLP – Classification, Labelling and Packaging Regulation; Regulation (EC) No 1272/2008;
CAS – Chemical Abstract Services;
CSR – Chemical Safety Report;
DNEL – Derived no-effect value;
EC – European Community;
EC – European Commission;
ECHA – European Chemicals Agency;
EC No – EINECS and ELINCS numbers;
EINECS – European Inventory of Existing Commercial Chemical Substances;
ELINCS – European List of Notified Chemical Substances;
EU – European Union;
GHS – Globally Harmonised System;

HN – Hygiene regulations;
IMDG – International Maritime Dangerous Goods Code;
IMSBC – International Maritime Solid Bulk Cargoes Code;
IUCLID – International Uniform Chemical Information Database;
IUPAC – International Union of Pure and Applied Chemistry;
UN – United Nations;
Kow – Octanol-water partition coefficient;
LC50 – Lethal concentration for 50 % of the tested population;
LD50 – Lethal dose of for 50 % of the tested population (median lethal dose);
LR – Primary registrar;
LT – Lithuanian;
OJ – Official Journal;
PBT – Persistent, bioaccumulative and toxic;
PEC – Predicted environmental concentration;
PNEC(s) – Predicted no effect concentration(s);
PPE – Personal protective equipment;
REACH Regulation – Registration, Evaluation, Authorization and Restriction of Chemicals (EC) No 1907/2006;
RID – Regulations concerning the international carriage of dangerous goods by rail;
EL – Occupational exposure limit value;
RMM – Risk management measures;
SCBA – Self-contained breathing apparatus;
SDS – Safety data sheet;
SIEF – Substance Information Exchange Forum;
STOT – Specific target organ toxicity;
(STOT) RE – Repeated exposure;
(STOT) SE – Single exposure;
SVHC – Substance of very high concern;
(Q)SAR – (Quantitative) structure activity relationship;
vPvB – Very persistent and very bioaccumulate;
See – refer.
Explanation of Sectors of Use (SU):
SU1 – Agriculture, forestry, fishery.
Explanation of Product Category (PC):
PC4 – Anti-Freeze and De-icing products;
PC9a – Coatings and paints, thinners, paint removers;
PC12 – Fertilizers;
PC21 – Laboratory chemicals;
PC39 – Cosmetics, personal care products.

(iii) Key literature references and sources for data:
1) Gwerder, C., Misslin, P.-P., Meier, P., Durrer, M., Schweighauser, U., Reuse, P. & Holzschuh, O. 2009: Determination of some physical-chemical properties of Urea (study report), Testing laboratory: Institute of Safety and Security, Report No: 204611.18.0640.03. Owner company; Borealis, Report date;
2) Sax, N.I. & Lewis, S.R. 1987: Hawley's Condensed Chemical Dictionary. (review article or handbook),

Hawley's Condensed Chemical Dictionary. 11th ed. New York: Van Nostrand Reinhold Co., 1987, p. 1209. Report date;
3) Registration of urea according to the REACH dossier is published on the website of the European Chemicals Agency;
4) http://gestis-en.itrust.de/nxt/gateway.dll?f=templates&fn=default.htm&vid=gestiseng:sdbeng. (data taken 2021-01-29).

(iv) Applicable classification and procedures used to determine the classification of mixtures in accordance with Regulation (EC) No 1272/2008 [CLP Regulation]: The product is a mono-constituent substance, so this sub-section is not applicable.

(v) Hazard statements and precautionary statements:
P102 – Keep out of reach of children.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

(vi) Training advice: People that manufacture, handle, use and store this product must be trained to work with chemicals, have adequate hygiene skills and knowledge on the product properties, potential hazards, working methods, applicable personal protective equipment, first aid principles, and information on emergency procedures. This safety data sheet must be made available to those working with the product. Individuals must be instructed before working with the product.

NOTE. The information provided in this safety data sheet must be made available to anyone working with the chemical, and preparation. The data comply with our current knowledge and are intended to describe the chemical product in terms of occupational safety and health and environmental protection. The information of the safety data sheet will be supplemented by new data on the health and environmental effects of the substance or preparation, on preventive measures to reduce or eliminate the hazards, when they are available. The information provided in the safety data sheet does not reveal any other specific properties of the substance or mixture.

This version replaces all previous documents.

The End of Safety Data Sheet