



# urea

## Safety Data Sheet

Version  
Revision date 11/29/2011/JK-IA

### SECTION 1. Product and company identification

Chemical type : Substance  
Substance name : Urea  
CAS No. : 57-13-6  
Product code : RC-112  
Formula : CH<sub>4</sub>N<sub>2</sub>O  
Synonyms : amide of carbonic acid / aquacare / aquadrate / basodexan / BIK / B-I-K / carbamide / carbamide, resin / carbamidic acid / carbonyldiamide / carbonyldiamine / isourea / keratinamin / mocovina / nutraplus / pastarom / prespersion / prespersion,75 urea / pseudo-urea / supercel 3000 / ureaphil / ureophil / urepearl / urevert / varioform II  
Company identification : G-Biosciences/ Geno Technology, Inc.  
9800 Page Avenue  
St. Louis, MO 63312-1429, USA  
Tel. 1-800-628-7730  
<http://www.GBiosciences.com>  
Emergency number : Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887

### SECTION: 2. Hazards identification

#### 2.1. Emergency Overview

Physical State : Solid  
Appearance : Crystalline solid. Crystalline powder. Little spheres. Grains  
Colour : White  
Odour : Odourless. In moist air: Ammonia odour

urea ( f )57-13-6

#### 2.2. OSHA Regulatory Status

No additional information available

#### 2.3. Potential health effects

Symptoms/injuries after inhalation : AFTER INHALATION OF DUST: Dry/sore throat. Coughing.  
Symptoms/injuries after eye contact : Redness of the eye tissue.  
Symptoms/injuries after ingestion : Nausea. Vomiting. Cramps/uncontrolled muscular contractions.

#### 2.4. Potential environmental effects

No additional information available

### SECTION: 3. Composition/information on ingredients

Name	CAS No.	%
urea	57-13-6	100

#### 4.1. First aid procedures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.  
First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.  
First-aid measures after skin contact : Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.  
First-aid measures after eye contact : Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.  
First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Call Poison Information Centre ([www.big.be/antigif.htm](http://www.big.be/antigif.htm)). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

#### 4.2. Note to physicians

No additional information available

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### SECTION: 5. Firefighting measures

#### 5.1. Flammable properties

Fire hazard	: DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".
Explosion hazard	: INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".
Reactivity	: Decomposes slowly on exposure to water (moisture) and in moist air: release of corrosive gases/vapours (ammonia). On burning: release of toxic and corrosive gases/vapours (nitrous vapours, ammonia, carbon monoxide - carbon dioxide). Violent to explosive reaction with (some) halogens compounds: release of heat. Reacts with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion.

#### 5.1. Extinguishing media

Suitable extinguishing media	: EXTINGUISHING MEDIA FOR SURROUNDING FIRES : All extinguishing media allowed.
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#### 5.3. Protection for firefighters

Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

### SECTION: 6. Accidental release measures

#### 6.1. Personal precautions

##### 6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. See "Material-Handling" to select protective clothing.
Emergency procedures	: Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes. In case of reactivity hazard: consider evacuation.

##### 6.1.2. For emergency responders

No additional information available

#### 6.2. Environmental precautions

No additional information available

#### 6.3. Methods for containment

For containment	: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.
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#### 6.4. Methods for clean up

Methods for cleaning up	: Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
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#### 6.5. Other information

No additional information available

#### 6.6. Spill or leak statements by type of chemical

No additional information available

### SECTION: 7. Handling and storage

#### 7.1. Handling

Precautions for safe handling	: Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Avoid raising dust. Use earthed equipment. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
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#### 7.2. Storage

Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. halogens. water/moisture.
Storage area	: Store in a dry area. Keep out of direct sunlight. Keep container in a well-ventilated place. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: hermetical. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: stainless steel. synthetic material. glass. cardboard. wood. MATERIAL TO AVOID: carbon steel. copper. bronze.

### SECTION: 8. Exposure controls/personal protection

#### 8.1. Exposure guidelines

No additional information available

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### 8.2. Engineering controls

No additional information available

### 8.3. Personal protective equipment (PPE)

Materials for protective clothing	: GIVE GOOD RESISTANCE: butyl rubber, chloroprene rubber, PVC. GIVE POOR RESISTANCE: neoprene, nitrile rubber, viton.
Hand protection	: Gloves.
Eye protection	: Face shield. In case of dust production: protective goggles.
Skin and body protection	: Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing.
Respiratory protection	: Dust production: dust mask with filter type P1.

## SECTION: 9. Physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Crystalline powder. Little spheres. Grains.
Molecular mass	: 60.07 g/mol
Colour	: White.
Odour	: Odourless. In moist air: Ammonia odour.
Odour threshold	: No data available
pH	: 7.2
pH solution	: 10 %
Melting point	: 133 °C
Solidification point	: No data available
Boiling point	: Not applicable
Flash point	: Not applicable
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Vapour pressure	: < 0.01 hPa (20 °C)
Vapour pressure at 50 °C	: < 0.01 hPa (50 °C)
Relative vapour density at 20 °C	: 2.1
Relative density	: 1.3
Density	: 1335 kg/m <sup>3</sup>
Solubility	: Soluble in water. Soluble in ethanol. Soluble in acetic acid. Soluble in pyrimidine. Soluble in hydrogenchloride. Water: 100 g/100ml Ethanol: 10 g/100ml
Log Pow	: -2.59 - -1.59
Self ignition temperature	: No data available
Decomposition temperature	: > 133 °C
Viscosity	: dynamic: 0.002 Pa.s (20 °C)
Explosive properties	: No data available
Oxidising properties	: No data available
Saturation concentration	: < 0.01 g/m <sup>3</sup>
VOC content	: 0 %
Other properties	: Hygroscopic. May generate electrostatic charges.

## SECTION: 10. Stability and reactivity

### 10.1. Chemical stability

Decomposes slowly on exposure to water (moisture) and in moist air: release of corrosive gases/vapours (ammonia). On burning: release of toxic and corrosive gases/vapours (nitrous vapours, ammonia, carbon monoxide - carbon dioxide). Violent to explosive reaction with (some) halogens compounds: release of heat. Reacts with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion.

Unstable on exposure to moisture.

### 10.2. Conditions to avoid

No additional information available

### 10.3. Incompatible materials

No additional information available

### 10.4. Hazardous decomposition products

No additional information available

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### 10.5. Possibility of hazardous reactions

No additional information available

## SECTION: 11. Toxicological information

### Information on toxicological effects

Acute toxicity : Not classified

urea (57-13-6)	
LD50 oral rat	8471 mg/kg
LD50 dermal rat	> 3200 mg/kg
LD50 dermal rabbit	> 21000 mg/kg

Skin corrosion/irritation : Not classified  
pH: 7.2

Serious eye damage/irritation : Not classified  
pH: 7.2

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

## SECTION: 12. Ecological information

### 12.1 Ecotoxicity

Ecology - general : Classification concerning the environment: not applicable.

Ecology - air : Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009). Germany: TA-Luft Klasse 5.2.5/l.

urea ( f )57-13-6	
LC50 fishes 1	> 6810 mg/l (96 Hours; LEUCISCUS IDUS; STATIC SYSTEM)
EC50 Daphnia 1	> 10000 mg/l (48 Hours; DAPHNIA MAGNA)
LC50 fishes 2	17500 mg/l (96 Hours; POECILIA RETICULATA)
EC50 Daphnia 2	> 10000 mg/l (24 Hours; DAPHNIA MAGNA)
EC50 other aquatic organisms 2	24000 mg/l (<1 Hours; BACTERIA; MICROTOXTEST)

### 12.2. Persistence and degradability

urea ( f )57-13-6	
Persistence and degradability	Nitrification isn't inhibited at 100 mg/l . Inherently biodegradable. test: 81 %, OECD 302B Zahn- Well . Hydrolysis in water.
ThOD	0.27 g O <sub>2</sub> /g substance

### 12.3. Bioaccumulation/Accumulation

urea ( f )57-13-6	
BCF fishes 2	1 (72 Hours; BRACHYDANIO RERIO; FRESH WATER)
BCF other aquatic organisms 2	11700 (CHLORELLA SP.)
Log Pow	-2.59 - -1.59
Bioaccumulative potential	Bioaccumulation: not applicable.

### 12.4. Mobility in environmental media

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION: 13. Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Remove to an authorized dump (Class II). Do not discharge into drains or the environment.

Additional information : LWCA (the Netherlands): KGA category 03.

## SECTION: 14. Transport information

### 14.1. Basic shipping description

No additional information available

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### 14.2 Additional information

Other information : No supplementary information available.  
State during transport (ADR-RID) : Rail and road transport: not subject to ADR-RID.

#### Overland transport

No additional information available

#### Transport by sea

No additional information available

#### Air transport

No additional information available

## SECTION: 15. Regulatory information

### 15.1. US Federal regulations

No additional information available

### 15.2. International regulations

#### CANADA

No additional information available

#### EU-Regulations

No additional information available

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

Not classified

#### Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

#### 15.2.2. National regulations

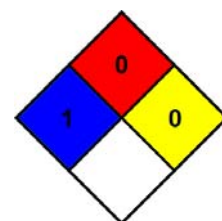
No additional information available

### 15.3. US State regulations

No additional information available

## SECTION: 16. Other information

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.  
NFPA fire hazard : 0 - Materials that will not burn.  
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



#### HMIS III Rating

No additional information available

SDS US (ANSI) GBiosciences