

# SAFETY DATA SHEET

## SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifier

Product Name: UreaGel-6

Product Number: EC-836

### 1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users

### 1.3 Details of the Supplier of the Safety Data Sheet

#### Manufacturer

National Diagnostics  
305 Patton Drive  
Atlanta, GA 30036  
(404) 699-2121  
(800) 526-3867  
info@nationaldiagnostics.com

#### Agent

AGTC Bioproducts  
Unit 4 Fleet Business Park  
Itlings Lane, Hessle  
East Riding of Yorkshire HU139LX  
44(0) 1482 646020  
office@agtcbioproducts.com

### 1.4 Emergency Telephone Number

#### Chemtrec

1-800 424-9300 (U.S. & Canada)  
01-703-527-3887 (outside U.S. & Canada)

## SECTION 2 - HAZARDS IDENTIFICATION

### 2.1 Classification of the Substance or Mixture

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

H302 - Acute Toxicity-Oral (Category 4)  
H312 - Acute Toxicity-Dermal (Category 4)  
H315 - Skin Corrosion/Irritation (Category 2)  
H317 - Skin Sensitizer (Category 1)  
H319 - Serious Eye Damage/Eye Irritation (Category 2A)  
H332 - Acute Toxicity-Inhalation (Category 4)  
H340 - Germ Cell Mutagenicity (Category 1B)  
H350 - Carcinogenicity (Category 1B)  
H361 - Toxic to Reproduction (Category 2)  
H372 - Specific Target Organ Toxicity Following Repeated Exposure (Category 1)

### 2.2 Label Elements

#### GHS LABEL ELEMENTS AND CLASSIFICATION

##### GHS Label Elements



#### DANGER

H302 - Harmful if swallowed  
H312 - Harmful in contact with skin.  
H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H319 - Causes serious eye irritation.  
H332 - Harmful if inhaled.  
H340 - May cause genetic defects.  
H350 - May cause cancer.  
H361 - Suspected of damaging fertility or the unborn child.  
H372 - Causes damage to organs through prolonged or repeated exposure.  
P201 - Obtain special instructions before use.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P308+P360 - IF ON CLOTHING: Rinse immediately contaminated CLOTHING and SKIN with plenty of water before removing clothes.  
P308+P313 - IF exposed or concerned: Call a POISON CENTER or doctor/physician.

### 2.3 Other Hazards

None found.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixture

## Chemical Names/Description

Aqueous solution of acrylamides and urea.

## Component List

Component	% Comp.	CAS #	EC #	1278/2008 Classification
ACRYLAMIDE	< 10	79-06-1	201-173-7	H301, H312, H315, H317, H319, H332, H340, H350, H361, H372
Urea	< 50	57-13-6	200-315-5	N.A.
BIS-ACRYLAMIDE	< 1.0	110-26-9	203-750-9	H302, H332

## SECTION 4 - FIRST AID MEASURES

### 4.1 Description of First Aid Measures

#### Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

#### Ingestion

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.

#### Skin

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

#### Eyes

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

### 4.2 Most Important Symptoms and Effects, Both Acute and Delayed

#### Inhalation

##### ACRYLAMIDE:

Contact with this material by inhalation of mist may cause nervous system effects. See ingestion effects for more details.

##### Urea:

Symptoms may include coughing, shortness of breath. May be absorbed into the bloodstream with symptoms similar to ingestion.

##### BIS-ACRYLAMIDE:

Drowsiness, tingling sensations, fatigue, weakness, stumbling, slurred speech, and shaking.

#### Ingestion

##### ACRYLAMIDE:

Contact with this material by any route (eyes/skin, inhalation or ingestion) may cause nervous system effects (neurotoxicity). These effects can result from a single overexposure but are more likely to occur after repeated exposures to small amounts over a period of several days or weeks. Signs and symptoms of toxic effects include increased sweating of the hands and feet, numbness, tingling and weakness in the extremities, unsteady gait and decreased reflexes

##### Urea:

Symptoms may include nausea, vomiting, and diarrhea. May also cause headache, confusion and electrolyte depletion.

##### BIS-ACRYLAMIDE:

Drowsiness, tingling sensations, fatigue, weakness, stumbling, slurred speech, and shaking.

#### Skin

##### ACRYLAMIDE:

Acrylamide is readily absorbed through unbroken skin. If the exposure route is dermal, the signs and symptoms described above under 'Signs and Symptoms of Overexposure - Ingestion' may be preceded by peeling and redness of skin at the areas of exposure, normally the hands and feet.

##### Urea:

Symptoms include redness, itching, and pain.

##### BIS-ACRYLAMIDE:

Pain and redness. Symptoms of absorption of solutions through the skin may parallel ingestion.

#### Eyes

##### ACRYLAMIDE:

Contact with this material by eyes may cause nervous system effects. See 'Signs and Symptoms of Overexposure - Ingestion' above for more details.

**Urea:**  
Redness, itching and pain.

**BIS-ACRYLAMIDE:**  
Pain and redness.

#### **4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed**

Unknown/not applicable

### **SECTION 5 - FIRE FIGHTING MEASURES**

#### **5.1 Extinguishing media**

Use media appropriate to the primary cause of fire.

#### **5.2 Special Hazards Arising from the Substance/Mixture**

##### **Hazardous Combustion Products**

Thermal decomposition products may include toxic oxides of nitrogen and carbon.

##### **Hazardous Decomposition Products**

Upon heating, may produce ammonia, nitrogen oxides, cyanuric acid, cyanic acid, biuret, carbon dioxide, carbon monoxide, and hydrogen.

##### **Hazardous Polymeriation**

May occur

#### **5.3 Advice for Firefighters**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or positive pressure mode.

#### **5.4 Further Information**

No data available.

### **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

#### **6.1 Personal Precautions**

Wear appropriate protective equipment as specified in Section 8.

#### **6.2 Environmental Precautions**

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

#### **6.3 Methods and Materials for Containment and Cleaning Up**

Contain and clean up spill immediately, prevent from entering floor drains. Contain liquids using absorbents. Shovel all spill materials into disposal drum. Scrub spill area with detergent, flush with copious amounts of water.

#### **6.4 References to Other Sections**

For disposal information, see Section 13. For Protective clothing and equipment, see Section 8.

### **SECTION 7 - HANDLING AND STORAGE**

#### **7.1 Precautions for Safe Handling**

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. Wear special protective equipment (Sec. 8) where exposures may exceed established levels.

#### **7.2 Conditions for Safe Storage (including any incompatibles)**

Keep in a tightly closed container, stored in a cooled, dry, ventilated area. Protect from physical damage. Isolate from incompatible materials (section 10).

##### **Incompatibles**

###### **ACRYLAMIDE:**

Acrylamide reacts with acids, oxidizing agents, and bases. Spontaneously reacts with hydroxyl-, amino-, and sulfhydryl- containing compounds. Avoid vinyl polymerization initiators or contamination with aluminum, iron, copper, brass, and bronze.

###### **Urea:**

Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride. It is incompatible with sodium nitrite, gallium perchlorate, strong oxidizing agents (permanganate, dichromate, nitrate, chlorine), phosphorus penta

###### **BIS-ACRYLAMIDE:**

Strong bases, strong acids, and oxidizing agents.

#### **7.3 Specific End Uses**

## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

### 8.1 Control Parameters

**Component: ACRYLAMIDE**

ACGIH Threshold Limit Value (TLV): 0.03 mg/m<sup>3</sup> (TWA) (skin) for solid  
 OSHA Permissible Exposure Limit (PEL): 0.3 mg/m<sup>3</sup> (TWA) (skin) for solid

**Component: Urea**

ACGIH Threshold Limit Value (TLV): 10 mg/m<sup>3</sup>, 8-hour TWA  
 OSHA Permissible Exposure Limit (PEL): not available

**Component: BIS-ACRYLAMIDE**

ACGIH Threshold Limit Value (TLV): 5 mg/m<sup>3</sup> (TWA) (skin) for solid  
 OSHA Permissible Exposure Limit (PEL): None established

### 8.2 Exposure Controls

**Engineering Controls**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminated at its source.

**Respiratory Protection**

If exposure limits are exceeded, wear a full-face respirator with organic vapor cartridge and high efficiency dust mist filter. Beyond fifty times exposure limits or when exposure levels are not known, wear a full-face piece positive pressure respirator.

**Eye Protection**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**Skin Protection**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical & Chemical Properties

a. Appearance	Clear, colorless solution	b. Odor	None
c. Odor Threshold	N.A.	d. pH	Neutral
e. Melting/Freezing Point (°C)	-10	f. Boiling point (°C)	102
g. Flash Point (°C)	N.A.	h. Evaporation Rate	1.0
i. Flammability	N.A.	j. Upper/Lower Flammability or Explosive Limits	N.A.
k. Vapor Pressure	Water	l. Vapor Density (Air = 1)	1.12
m. Relative Density	1.16	n. Water Solubility	Soluble
o. Partition Coefficient n-octanol/water	Mixture	p. Autoignition Temperature (°C)	N.A.
q. Decomposition Temperature (°C)	N.A.	r. Viscosity	No data available.
s. Explosive Properties	N.A.	t. Oxidizing Properties	Not an oxidizer

## SECTION 10 - STABILITY AND REACTIVITY

### 10.1 Reactivity

Contains urea and unsaturated compounds- may react with strong acids or oxidizing agents.

### 10.2 Chemical Stability

Stable under ordinary conditions of use and storage.

### 10.3 Possibility of Hazardous Reactions

May occur

### 10.4 Conditions to Avoid

Heat, shock, UV light, and incompatibles.

### 10.5 Incompatible Materials

**ACRYLAMIDE:**

Acrylamide reacts with acids, oxidizing agents, and bases. Spontaneously reacts with hydroxyl-, amino-, and sulfhydryl- containing compounds. Avoid vinyl polymerization initiators or contamination with aluminum, iron, copper, brass, and bronze.

**Urea:**

Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride. It is incompatible with sodium nitrite, gallium perchlorate, strong oxidizing agents (permanganate, dichromate, nitrate, chlorine), phosphorus penta

**BIS-ACRYLAMIDE:**

Strong bases, strong acids, and oxidizing agents.

**10.6 Hazardous Decomposition Products**

Upon heating, may produce ammonia, nitrogen oxides, cyanuric acid, cyanic acid, biuret, carbon dioxide, carbon monoxide, and hydrogen.

**SECTION 11 - TOXICOLOGICAL INFORMATION****Product LD50 Values****Oral Rat LD50 (mg/kg)**

3920

**Dermal Rabbit LD50 (mg/kg)**

3360

**Component Cancer List Status**

	NTP Carcinogen		IARC Category
	Known	Anticipated	
ACRYLAMIDE	No	Yes	2A
Urea	No	No	None
BIS-ACRYLAMIDE	No	No	None

**Potential Health Effects****Inhalation****ACRYLAMIDE**

Inhalation of mist causes irritation to the respiratory tract. Symptoms may parallel ingestion.

**Urea**

Causes irritation to the respiratory tract.

**BIS-ACRYLAMIDE**

Inhalation of mist may cause drowsiness, tingling sensations, fatigue, weakness, stumbling, slurred speech, and shaking. Inhalation studies with this compound have produced acute pulmonary edema in animals. Effects in humans not known.

**Ingestion****ACRYLAMIDE**

Toxic! May cause systemic poisoning. May cause drowsiness, tingling sensations, fatigue, weakness, stumbling, slurred speech, and shaking. May cause central and peripheral nervous system damage. Severe intoxication may cause permanent nerve damage. May affect reproductive system and act as a teratogen.

**Urea**

Causes irritation to the gastrointestinal tract.

**BIS-ACRYLAMIDE**

Toxic! Unsaturated amides cause systemic poisoning.

**Skin****ACRYLAMIDE**

May cause irritation and redness. Can be absorbed through the skin causing systemic poisoning; symptoms may parallel ingestion.

**Urea**

Causes irritation to the skin.

**BIS-ACRYLAMIDE**

Unsaturated amides cause irritation and redness. Solutions may be absorbed through the skin causing systemic poisoning.

**Eyes****ACRYLAMIDE**

Acrylamide solutions may cause eye irritation.

**Urea**

Causes irritation to the eyes.

**BIS-ACRYLAMIDE**

Contact with the eyes causes irritation.

## Carcinogenicity

### ACRYLAMIDE

Acrylamide is suspected as a cancer hazard. May cause cancer. Listed by NTP as a suspected carcinogen. Acrylamide is known to the State of California to cause cancer.

### Urea

Not listed as a carcinogen by NTP or IARC.

### BIS-ACRYLAMIDE

Not listed as a known or anticipated carcinogen by NTP or IARC.

## Mutagenicity

### ACRYLAMIDE

Acrylamide was negative in the Ames assay both with and without metabolic activation.

### Urea

No information found.

### BIS-ACRYLAMIDE

No information available.

## Reproductive Toxicity

### ACRYLAMIDE

Acrylamide induced male reproductive toxicity has been demonstrated in Long-Evans rats where given greater than or equal to 15 mg/kg/day acrylamide orally by gavage for five consecutive days. In this study, males receiving greater than or equal to 15 mg/kg/day acrylamide had a reduced fertility index.

### Urea

No information found.

### BIS-ACRYLAMIDE

No information available.

## Teratogenic Effects

### ACRYLAMIDE

Not Available.

### Urea

No information found.

### BIS-ACRYLAMIDE

No information available.

## Routes of Entry

### ACRYLAMIDE

Contact with this material by any route of exposure (eye/skin, inhalation or ingestion) may cause serious adverse health consequences.

### Urea

Ingestion and inhalation.

### BIS-ACRYLAMIDE

Ingestion, inhalation, skin contact.

## Target Organ Statement

### ACRYLAMIDE

Not Available.

### Urea

Supersensitive individuals with skin or eye problems, kidney impairment or asthmatic condition should have physician's approval before exposure to urea dust.

### BIS-ACRYLAMIDE

Persons with pre-existing skin disorders, eye problems, or central or peripheral nervous system conditions may be more susceptible to the effects of this substance.

## SECTION 12 - ECOLOGICAL INFORMATION

### 12.1 Toxicity

COMPONENT: ACRYLAMIDE

Vertebrates

Invertebrates

Algae

Microorganisms

Aquatic Toxicity (ppm unless otherwise noted)	96 hr LC50: 180ppm (Rainbow Trout)	48-hour EC50: 98 mg/l (Daphnea)	ICA50 (growth inhibition): 67.7 mg/l (Selenastrum capricornutum)	No data
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	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

**COMPONENT: Urea**

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	>6810 @96 hrs	>10000 @ 24 hrs	>10000@ 7 days	>10000 @ 72 hrs

	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	>16000mg/kg	no data	no data	no data

**COMPONENT: BIS-ACRYLAMIDE**

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

## 12.2 Persistence and Degradability

**ACRYLAMIDE**

Readily biodegradable: The test material was found to degrade approximately 100% in 28 days in the OECD Closed Bottle Test (301D).

**Urea**

Readily biodegradable

**BIS-ACRYLAMIDE**

No data

## 12.3 Bioaccumulative Potential

**ACRYLAMIDE**

No data

**Urea**

No data

**BIS-ACRYLAMIDE**

No data

## 12.4 Mobility in Soil

**ACRYLAMIDE**

No data

**Urea**

K<sub>0c</sub>=0.037 - 0.064.

**BIS-ACRYLAMIDE**

No data

## 12.5 Results of PBT and vPvB Assessment

**ACRYLAMIDE**

Not PBT or vPvB

**Urea**

Not a PBT or vPvB

**BIS-ACRYLAMIDE**

No data

## 12.6 Other Adverse Effects

**ACRYLAMIDE**

No data

**Urea**

No data

**BIS-ACRYLAMIDE**

None

## SECTION 13 - DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

## SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	Not regulated	Not regulated	Not regulated	Not regulated
14.2 Shipping Name	Not regulated	Not regulated	Not regulated	Not regulated
14.3 Hazard Class	Not regulated	Not regulated	Not regulated	Not regulated
14.4 Packing Group	Not regulated	Not regulated	Not regulated	Not regulated
14.5 Environmental Hazards	N.A.	N.A.	N.A.	N.A.
14.6 Special Precautions	N.A.	N.A.	N.A.	N.A.

## SECTION 15 - REGULATORY INFORMATION

### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture

#### United States

##### TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA

##### SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
ACRYLAMIDE	No	No	No	Yes	Yes
Urea	No	No	No	Yes	Yes
BIS-ACRYLAMIDE	No	No	No	Yes	Yes

#### Europe

##### EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

## SECTION 16 - OTHER INFORMATION

### Revisional Updates

5/29/2015 - Updated Sections 2.1 and 3.2

1/28/2015 - Updated Sections 2.1 and 2.2

7/16/2013 - Released Version 1.0

### NFPA Codes

Health 2 Flammability 1 Reactivity 1

### Dangers

#### ACRYLAMIDE

H302 - Harmful if swallowed.

H312 - Harmful in contact with skin.

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

H332 - Harmful if inhaled.

H340 - May cause genetic defects.

H350 - May cause cancer.

H361 - Suspected of damaging fertility or the unborn child.

H372 - Causes damage to organs through prolonged or repeated exposure.

#### Urea

None

#### BIS-ACRYLAMIDE

H302 - Harmful if swallowed

H332 - Harmful if inhaled



suitability of the product for particular uses are beyond our control. All risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.