SAFETY DATA SHEET

Conforms to regulation (EC) no. EU 453/2010

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

1.1 Product Identifier

Product Name: UreaGel Concentrate **Product Number:** EC-830

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	Agent
National Diagnostics	AGTC Bioproducts
305 Patton Drive	Unit 4 Fleet Business Park
Atlanta, GA 30036	Itlings Lane, Hessle
(404) 699-2121	East Riding of Yorkshire HU139LX
(800) 526-3867	44(0) 1482 646020
info@nationaldiagnostics.com	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	< 25	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	< 2.0	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 extremeties, 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 other positive pressure mode.

5.4 Further Information
No data available.

SECTION 6 - ACCIDENTAL RELEASE MEASURES
6.1 Personal Precautions
If water solvent has evaporated, wear NIOSH approved air-purifying respirator.

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

Investigational research by professional users

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

8.1 Control Parameters

Component: ACRYLAMIDE

ACGIH Threshold Limit Value (TLV): 0.03 mg/m3 (TWA) (skin) for solid
OSHA Permissable Exposure Limit (PEL): 0.3 mg/m3 (TWA) (skin) for solid

Component: Urea

ACGIH Threshold Limit Value (TLV): 10 mg/m3, 8-hour TWA
OSHA Permissable Exposure Limit (PEL): not available

Component: BIS-ACRYLAMIDE

ACGIH Threshold Limit Value (TLV): 5 mg/m3 (TWA) (skin) for solid
OSHA Permissable 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 contaminant 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 (^{o}C)	-5	**f. Boiling point (^{o}C)**	105
g. Flash Point (^{o}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)**	1.06
m. Relative Density	1.13	**n. Water Solubility**	Soluble
o. Partition Coefficient n-octanol/water	Mixture	**p. Autoignition Temperature (^{o}C)**	N.A.
q. Decomposition Temperature (^{o}C)	N.A.	**r. Viscosity**	No data available.
s. Explosive Properties	May polymerize exothermically	**t. Oxidizing Properties**	N.A.

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

Reacts with vinyl polymerization initiators to produce polymer- this reaction is exothermic and may produce a hazardous condition.

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)
417-1683

Dermal Rabbit LD50 (mg/kg)
3642

Component Cancer List Status

	NTP Carcinogen		
	Known	Anticipated	IARC Category
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 INFOMATION

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

	Birds	Arthropods	Plants	Microorganisms
Terrestial 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
Terrestial 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
Terrestial 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
K0c=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	NA	NA	NA	NA
14.2 Shipping Name	Not Regulated	Not Regulated	Not Regulated	Not Regulated
14.3 Hazard Class	NA	NA	NA	NA
14.4 Packing Group	NA	NA	NA	NA
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 Inventory.

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

MANUFACTURER DISCLAIMER: The information given herein is offered in good faith as accurate, but without guarantee. Conditions of the use and

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.