



## Section 1: Identification

### Product identifier

**Product Name** • Urea

**Synonyms** • Carbamide; Carbonyl diamide; Carbonyldiamine

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

**Recommended use** • Consult manufacturer for the recommended product use

### Details of the supplier of the safety data sheet

**Manufacturer** • Dakota Gasification  
420 County Road 26  
Beulah, ND 58523-9400  
United States  
www.dakotagas.com

**Telephone (General)** • 701-873-2100

### Emergency Contact Information

**Email** • DGCEmergency@bepc.com

**Manufacturer** • (701) 873-6600

**CHEMTREC** • 800-424-9300

## Section 2: Hazard Identification

### United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

### Classification of the substance or mixture

**OSHA HCS 2012** • Skin Irritation 2

### Label elements

**OSHA HCS 2012**

### WARNING



**Hazard statements** • Causes skin irritation

### Precautionary statements

**Prevention** • Wash thoroughly after handling.  
Wear protective gloves/protective clothing/eye protection/face protection.

**Response** • If on skin: Wash with plenty of water.  
Specific treatment, see supplemental first aid information.

Take off contaminated clothing and wash before reuse.  
If skin irritation occurs: Get medical advice/attention.

## Other hazards

### OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

## Canada

According to: WHMIS 2015

## Classification of the substance or mixture

### WHMIS 2015

- Skin Irritation 2

## Label elements

### WHMIS 2015

## WARNING



**Hazard statements** • Causes skin irritation

### Precautionary statements

- Prevention** • Wash thoroughly after handling.  
Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • IF ON SKIN: Wash with plenty of water.  
Specific treatment, see supplemental first aid information.  
Take off contaminated clothing and wash it before reuse.  
If skin irritation occurs: Get medical advice/attention.

## Other hazards

### WHMIS 2015

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

## Section 3 - Composition/Information on Ingredients

### Substances

- Material does not meet the criteria of a substance.

### Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Urea	CAS:57-13-6	95% TO 97%	Ingestion/Oral-Rat LD50 • 8471 mg/kg	OSHA HCS 2012: Skin Irrit. 2 WHMIS 2015: Skin Irrit. 2	NDA
Urea, reaction products with formaldehyde	CAS:68611-64-3	1% TO 2%	NDA	OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA
Biuret	CAS:108-19-0	< 1%	NDA	OSHA HCS 2012: Not Classified WHMIS 2015: Not Classified	NDA

## Section 4: First-Aid Measures

## Description of first aid measures

- Inhalation** • Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
- Skin** • In case of contact with substance, immediately flush skin with running water for at least 20 minutes. If irritation develops and persists, get medical attention.
- Eye** • In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.
- Ingestion** • Rinse mouth. Do not give anything by mouth to an unconscious person.

## Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

## Indication of any immediate medical attention and special treatment needed

- Notes to Physician** • All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

## Section 5: Fire-Fighting Measures

### Extinguishing media

- Suitable Extinguishing Media** • LARGE FIRE: Water spray, fog or regular foam.  
SMALL FIRES: Dry chemical, CO<sub>2</sub>, water spray or regular foam.

- Unsuitable Extinguishing Media** • No data available

### Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards** • Some may burn, but none ignite readily.

- Hazardous Combustion Products** • No data available

### Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

## Section 6 - Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

- Personal Precautions** • Ventilate enclosed areas. Do not walk through spilled material. Wear appropriate protective clothing.

- Emergency Procedures** • As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. Keep unauthorized personnel away.

### Environmental precautions

- Avoid run off to waterways and sewers.

### Methods and material for containment and cleaning up

- Containment/Clean-up Measures** • Avoid generating dust.  
SMALL DRY SPILLS: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.  
LARGE SPILLS: Cover powder spill with plastic sheet or tarp to minimize spreading.

## Section 7 - Handling and Storage

### Precautions for safe handling

- Handling** • Use only with adequate ventilation. Wear appropriate personal protective equipment. Avoid breathing dust. Avoid contact with skin, eyes, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

### Conditions for safe storage, including any incompatibilities

**Storage** • Keep container closed. Store in a well-ventilated place.

## Section 8 - Exposure Controls/Personal Protection

### Control parameters

**Exposure Limits/Guidelines** • No applicable exposure limits available for product or components.

### Exposure controls

**Engineering Measures/Controls** • Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values. Ensure that dust handling systems (such as exhaust ducts, dust collectors, vessels and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is not leakage from the equipment).

### Personal Protective Equipment

**Respiratory** • For limited exposure use an N95 dust mask. For prolonged exposure use an air-purifying respirator with high efficiency particulate air (HEPA) filters. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

**Eye/Face** • Wear safety goggles.

**Skin/Body** • Wear appropriate gloves. Wear long sleeves and/or protective coveralls.

**Environmental Exposure Controls** • Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

## Section 9 - Physical and Chemical Properties

### Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	White, solid granules.
Color	White	Odor	No data available
Odor Threshold	No data available		
General Properties			
Boiling Point	No data available	Melting Point/Freezing Point	270.8 °F(132.6667 °C)
Decomposition Temperature	270.8 °F(132.6667 °C)	pH	7.2
Specific Gravity/Relative Density	No data available	Water Solubility	Soluble
Viscosity	1.78 Centipoise (cPs, cP) or mPas @ 68 °F(20 °C) (46% solution)		
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available		
Flammability			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

## Section 10: Stability and Reactivity

### Reactivity

- No dangerous reaction known under conditions of normal use.

## Chemical stability

- Stable under normal temperatures and pressures.

## Possibility of hazardous reactions

- Hazardous polymerization will not occur.

## Conditions to avoid

- Avoid generating dust.

## Incompatible materials

- Strong acids. Strong bases. Strong oxidizers. Halogens. Hypochlorites. Nitric acid. Sodium nitrite, phosphorus pentachloride, and nitrosyl or gallium perchlorate. Urea will form urea nitrate when mixed with nitric acid at low pH.

## Hazardous decomposition products

- Nitrogen oxides. Ammonia. Carbon oxides (CO, CO<sub>2</sub>). Cyanuric acid.

## Section 11 - Toxicological Information

### Information on toxicological effects

Components		
Urea (95% TO 97%)	57-13-6	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • 8471 mg/kg; <b>Irritation:</b> Skin-Human • 20 % 24 Hour(s) • Moderate irritation; <b>Mutagen:</b> DNA damage • Unreported Route-Human • Liver (Somatic cell) • 31.6 µmol/L 48 Hour(s); <b>Reproductive:</b> Intraplacental-Woman TDLo • 1400 mg/kg (16W preg); <i>Reproductive Effects:Effects on Fertility:Abortion;</i> <b>Tumorigen / Carcinogen:</b> Ingestion/Oral-Rat TDLo • 821 g/kg 1 Year(s)-Continuous; <i>Tumorigenic:Neoplastic by RTECS criteria; Blood:Tumors; Blood:Lymphoma, including Hodgkin's disease</i>

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012•No data available WHMIS 2015•No data available
Skin corrosion/Irritation	OSHA HCS 2012•Skin Irritation 2 WHMIS 2015•Skin Irritation 2
Serious eye damage/Irritation	OSHA HCS 2012•No data available WHMIS 2015•No data available
Skin sensitization	OSHA HCS 2012•No data available WHMIS 2015•No data available
Respiratory sensitization	OSHA HCS 2012•No data available WHMIS 2015•No data available
Aspiration Hazard	OSHA HCS 2012•No data available WHMIS 2015•No data available
Carcinogenicity	OSHA HCS 2012•No data available WHMIS 2015•No data available
Germ Cell Mutagenicity	OSHA HCS 2012•No data available WHMIS 2015•No data available
Toxicity for Reproduction	OSHA HCS 2012•No data available WHMIS 2015•No data available
STOT-SE	OSHA HCS 2012•No data available WHMIS 2015•No data available
STOT-RE	OSHA HCS 2012•No data available WHMIS 2015•No data available

## Potential Health Effects

### Inhalation

**Acute (Immediate)** • Exposure to dust may cause irritation. Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may affect the lungs but reactions are typically reversible.

**Chronic (Delayed)** • No data available

### Skin

**Acute (Immediate)** • Causes skin irritation.

**Chronic (Delayed)** • No data available

### Eye

**Acute (Immediate)** • Exposure to dust may cause mechanical irritation. Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.

**Chronic (Delayed)** • No data available

### Ingestion

**Acute (Immediate)** • Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.

**Chronic (Delayed)** • No data available

#### Key to abbreviations

LD = Lethal Dose

TD = Toxic Dose

## Section 12 - Ecological Information

### Toxicity

• Non-mandatory section - information about this substance not compiled for this reason.

### Persistence and degradability

• Non-mandatory section - information about this substance not compiled for this reason.

### Bioaccumulative potential

• Non-mandatory section - information about this substance not compiled for this reason.

### Mobility in Soil

• Non-mandatory section - information about this substance not compiled for this reason.

### Other adverse effects

• Non-mandatory section - information about this substance not compiled for this reason.

## Section 13 - Disposal Considerations

### Waste treatment methods

**Product waste** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Packaging waste** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	Not Applicable	Not Regulated	Not Applicable	Not Applicable	NDA
TDG	Not Applicable	Not Regulated	Not Applicable	Not Applicable	NDA

**Special precautions for user**

• None specified.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** • No data available

## Section 15 - Regulatory Information

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

**SARA Hazard Classifications**

• Acute

Inventory			
Component	CAS	Canada DSL	Canada NDSL
Biuret	108-19-0	Yes	No
Urea	57-13-6	Yes	No
Urea, reaction products with formaldehyde	68611-64-3	No	Yes

## Canada

### Labor

#### Canada - WHMIS - Classifications of Substances

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Uncontrolled product according to WHMIS classification criteria

#### Canada - WHMIS - Ingredient Disclosure List

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

### Environment

#### Canada - CEPA - Priority Substances List

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

## United States

### Labor

#### U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

#### U.S. - OSHA - Specifically Regulated Chemicals

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

### Environment

#### U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**Inventory - United States - Section 8(b) Inventory (TSCA) - PMN Number to EPA Accession Number Link**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**United States - California****Environment****U.S. - California - Proposition 65 - Carcinogens List**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - California - Proposition 65 - Developmental Toxicity**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Female**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**U.S. - California - Proposition 65 - Reproductive Toxicity - Male**

•Biuret	108-19-0	Not Listed
•Urea, reaction products with formaldehyde	68611-64-3	Not Listed
•Urea	57-13-6	Not Listed

**Section 16 - Other Information**

**Revision Date** • 19/September/2019

**Preparation Date** • 26/May/2016



**Disclaimer/Statement  
of Liability**

- The information contained in this Safety Data Sheet (SDS) is believed to be correct since it was obtained from sources we believe are reliable. However no representation, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications, hazards connected with the use of the material, or the results to be obtained from the use thereof. User assumes all risks and liability of any use, processing or handling of any material, variations in methods, conditions and equipment used to store, handle, or process the material and hazards connected with the use of the material are solely the responsibility of the user and remain at his sole discretion. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user, and the user has the responsibility to provide a safe work place to examine all aspects of its operation and to determine if or where precautions, in addition to those described herein, are required.

**Key to abbreviations**

NDA = No Data Available