

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifier****Product Name:** Urea, Dry**Product Code(s):** Urea, Dry**Synonyms:** Carbamide resin, Carbamidic acid; Carbonyl diamide; Carbonyldiamine; Isourea**REACH Registration Number:** No data available**1.2 Relevant identified uses of the substance or mixture and uses advised against****General Use:** For industrial, agricultural, feed applications**Uses advised against:** No uses advised against**1.3 Details of the supplier and of the safety data sheet****Distributor**

Trammo, Inc.

4211 W. Boy Scout Blvd., Suite 600

Tampa, FL 33607 USA

+1-813-261-0600

1.4 Emergency telephone number

Chemtrec: +1-800-424-9300

SECTION 2 - HAZARDS IDENTIFICATION**2.1 Classification of substance or mixture****Product definition:** Substance**Classification (Regulation (EC) No 1272/2008)**

Not classified as hazardous in accordance to Regulation 1272/2008 (CLP) as well as with Directive 1999/45/EC (DPD).

2.2 Label Elements**Labeling (Regulation (EC) No 1272/2008)**

Not a dangerous substance according to GHS

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

% by Weight	Ingredient	CAS Number	EC Number	Index Number	EC Classification	GHS Classification
97.50 - 99.70	Urea	57-13-6	200-315-5	-----	-----	-----
0.00 - 1.50	Biuret	108-19-0	203-559-0	-----	-----	-----
0.00 - 2.42	Methylenediurea*	13547-17-6	236-918-5	-----	-----	-----

*Reagent and chemical grade Urea does not contain formaldehyde.

3.2 Mixtures**Chemical characterization (preparation)**

Not applicable

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to the health or the environment and hence require reporting in this section.

SECTION 4 - FIRST AID MEASURES**4.1 Description of first aid measures**

In all cases of doubt or when symptoms persist, seek medical attention.

Inhalation: If product dust causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist, seek prompt medical attention.**Eyes:** Immediately flush eyes with large amounts of water for 15 minutes, occasionally lifting upper and lower lids. Remove contact lenses, if present and easy to do, after first 2 minutes and continue rinsing. Obtain immediate medical attention, preferably from an ophthalmologist.**Skin:** Flush skin with large amounts of water while removing contaminated clothing. Wash affected area with soap and water. Wash contaminated clothing and shoes thoroughly before reuse. Seek prompt medical attention if irritation occurs or persists.**Ingestion:** Rinse mouth with water. Remove dentures if any. If swallowed, give 1 - 3 cupfuls of water or milk if victim is conscious and alert. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Obtain medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: Causes eye irritation characterized by redness, burning sensation, tearing, swelling and inflammation. Particulates may cause mechanical abrasion of the cornea and surrounding tissue.

Skin: May cause skin irritation. Prolonged and repeated skin contact may cause redness, itching and inflammation. Contact with heated material may cause thermal burns.

Inhalation: Inhalation of dust may be irritating to the respiratory system with irritation of the nose, throat, coughing and sneezing.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting, abdominal pain and diarrhea. May cause cardiac disturbances. May cause disturbed blood electrolyte balance.

Chronic: None known. Urea is a naturally occurring chemical in the body. It is an end product of protein metabolism and is excreted in the urine.

4.3 Indication of any immediate medical attention and special treatment needed

Advice to Doctor/Physician and Hospital Personnel: Treat symptomatically and supportively.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishable media

Suitable methods of extinction: Use media such as water fog, water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable methods of extinction: None known

5.2 Special hazards arising from the substance or mixture

Closed containers may explode due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. At temperatures above 132 °C (270 °F) urea decomposes to Biuret, ammonia and nitrogen oxides. Short term exposures to smoke and gases may lead to irreversible lung injury. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

Explosion hazards: Not considered to be an explosion hazard.

5.3 Advice for firefighters

Responders should stay upwind. Full protective equipment including self-contained breathing apparatus should be used (HAZMAT suits). Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat. If possible, firefighters should control run-off water to prevent environmental contamination.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust generation and accumulation. Do not inhale dust. Keep upwind of spill. Ventilate the area. Evacuate non-essential personnel. Wear appropriate protective clothing designated in Section 8. Remove all sources of ignition. Spill may cause a slip hazard.

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Cover drains and contain spill. Sweep up, vacuum or shovel up material and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Dispose of waste via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 13 for additional waste treatment information.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling

Observe label precautions. Wear all appropriate protective equipment specified in Section 8. Keep containers closed when not in use.

Advice on protection against fire and explosion

Material does not create a fire or explosion hazard.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10.5), food and drink. Transfer only to approved containers having correct labeling. Keep container tightly closed. Protect container against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent spillage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids). Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Do not take internally. Keep out of reach of children.

7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

CAS Number	Ingredient	OSHA	ACGIH	NIOSH
57-13-6	Urea	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)	-----	10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable dust)

8.2 Exposure controls

Engineering Measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking or using the lavatory.

Eye/face protection: Wear protective chemical goggles and a face shield use. Refer to 29 CFR 1910.133, ANSI Z87.1 or European Standard EN 166.

Hand Protection: Wear gloves recommended by supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

Other protective equipment: Protective clothing. Protective boots, if the situation requires.

Respiratory Protection: Always use an approved respirator when vapor/fumes/dust are generated. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental exposure controls: Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	White, spherical granular solid or spherical prills
Odor	Mild ammonia odor
Odor Threshold	No data available
Molecular Weight	60.07
Chemical Formula	CH ₄ N ₂ O
pH	7.1 - 7.3 (10% aqueous solution)
Freezing/Melting Point, Range	133 °C (271 °F)
Boiling Point	135 °C (275 °F), decomposes
Evaporation Rate	Not applicable
Flammability (solid, gas)	Non-flammable
Flash Point	Not applicable
Autoignition Temperature	Not applicable
Decomposition Temperature	>132 °C (>270 °F)
Lower Explosive Limit (LEL)	Not applicable
Upper Explosive Limit (UEL)	Not applicable
Vapor Pressure	80 Pa @ 20°C (calculated)
Vapor Density	Not applicable
Density	750 kg/m ³
Solubility in Water	1,193 g/l @ 25°C
Partition Coefficient: n-octanol/water	log Pow = -1.59 (25 °C)
Viscosity	Not applicable
Volatiles by Volume @ 70 °F	Negligible

9.2 Other data

No data available

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

No special reactivity has been reported.

10.2 Chemical stability

Stable under recommended storage conditions. May slowly hydrolyze to ammonium carbamate after a long period of time, which decomposes to ammonia and carbon dioxide.

10.3 Possibility of hazardous reactions

May react with hypochlorites to form explosive nitrogen trichloride.

Hazardous polymerization will not occur.

10.4 Conditions to avoid

High temperatures; avoid contact with incompatible materials

10.5 Incompatible materials

Strong oxidizers, acids, bases, nitrates, hypochlorites

10.6 Hazardous decomposition products

Thermal decomposition products include carbon oxides, nitrogen oxides, ammonia, Biuret.

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Oral Toxicity

LD50, rat: 14,300 mg/kg

Acute inhalation toxicity

No data available

Acute dermal toxicity

LD50, rat: 8,200 mg/kg

Skin irritation

May cause skin irritation.

Eye irritation

Causes eye irritation. May cause mechanical abrasion of the cornea.

Sensitization

Human experience - negative result

Genotoxicity in vitro

Ames test - negative results

Mutagenicity

No data available

Specific organ toxicity - single exposure

No data available

Specific organ toxicity - repeated exposure

No data available

Aspiration hazard

Based on available data the classification criteria are not met.

11.2 Further information

The components in this product are not listed as carcinogens by ACGIH, IARC, NTP or OSHA. No data are available regarding the mutagenicity or teratogenicity of this material, nor is there any available data that indicates it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Acute and prolonged toxicity to fish: LC50 - *Rasbora heteromorpha* (Harlequin rasbora), 96 h: 12,000 mg/l (IUCLID)

LC50 - *Leuciscus idus* (Golden orfe), 96 h: 6,810 mg/l (IUCLID)

Toxicity to aquatic invertebrates: EC50 - *Daphnia magna* (Water flea), 24 h: >10,000 mg/l (IUCLID)

Toxicity to aquatic plants: IC5 - *Scenedesmus quadricauda* (Green algae), 7 d: >10,000 mg/l (maximum permissible toxic concentration)

Toxicity to micro-organisms: EC5 - *Pseudomonas putida* (Bacteria), 16 h: >10,000 mg/l (maximum permissible toxic concentration)

12.2 Persistence and degradability

Product is expected to biodegradable.

12.3 Bioaccumulation potential

Not expected to bioaccumulate

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Other adverse effects

Additional ecological information

Do not allow material to run into surface waters, waste water or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Hazardous waste: The classification of this product may meet the criteria for a hazardous waste.

SECTION 14 - TRANSPORT INFORMATION

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

This material is not regulated for transport.

SECTION 15 - REGULATORY INFORMATION

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

U. S. Federal Regulations

OSHA Hazard Communication Standard: This material is not classified as highly hazardous as defined by the OSHA Hazard Communication Standard (28 CFR 1910.1200).

TSCA Status: All components of this product are listed on the Toxic Substance Control Act (TSCA) Inventory. This material is not subject to TSCA 12(b) Export Notification.

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories: None known

SARA 313 Information: None of the chemicals in this product exceed the threshold (de minimis) reporting levels established by Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance

None of the components of the product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification

None of the components of the product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): Product contains no CERCLA reportable materials.

Clean Air Act (CAA)

This product does not contain any Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

This product does not contain any Class 1 Ozone depletors.

This product does not contain any Class 2 Ozone depletors.

Clean Water Act (CWA)

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no substances known to the State of California to cause cancer or other reproductive harm.

Other U.S. State Inventories

None of the substances in this material are listed on any of the State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists.

Canada

WHMIS Hazard Symbol and Classification: Uncontrolled product according to WHMIS classification criteria

Canadian Controlled Products Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations, and the SDS contains all the information required by the Controlled Products Regulations.

Canadian Ingredient Disclosure List (IDL): None of the ingredients are listed on the IDL.

Canadian National Pollutant Release Inventory (NPRI): None of the ingredients are listed on the NPRI.

European Economic Community

Labeling (67/548/EEC or 1999/45/EC)

Not a hazardous substance according to EC directives 67/458/EEC or 1999/45/EC.

WGK, Germany (Water danger/protection): 1

Global Chemical Inventory Lists

Country	Inventory Name	Inventory Listing*
Canada:	Domestic Substance List (DSL)	Yes
Canada:	Non-Domestic Substance List (NDSL)	No
Europe:	Inventory of New and Existing Chemicals (EINECS)	Yes
United States:	Toxic Substance Control Act (TSCA)	Yes
Australia:	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand:	New Zealand Inventory of Chemicals (NZIoC)	Yes
China:	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan:	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea:	Existing Chemicals List (ECL)	Yes
Philippines:	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Yes

**Yes" indicates that all components of this product are in compliance with the inventory requirements administered by the governing country.

**No" indicates that one or more components of this product are not on the inventory and are not exempt from listing.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16 - OTHER INFORMATION

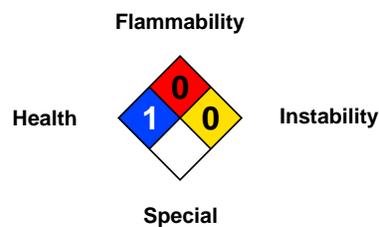
Hazardous Material Information System (HMIS)

Health	1
Flammability	0
Physical Hazard	0
Personal Protection	C

HMIS and NFPA Hazard Rating Legend

* = Chronic Health Hazard	2 = MODERATE
0 = INSIGNIFICANT	3 = HIGH
1 = SLIGHT	4 = EXTREME

National Fire Protection Association (NFPA)



Safety Glasses



Gloves



Protective Apron

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