

Safety Data Sheet



Section 1: Identification

Product identifier

Product Name

- **US-28**

Synonyms

- 28/27; 28-0-0-9(S); Urea Sulfate (2:1) - Urea Solution

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

Recommended use

- Fertilizer Solution

Details of the supplier of the safety data sheet

Manufacturer

- Verdegaal Brothers, Inc.
13555 S. 11th Ave.
Hanford, CA 93230-9591
United States
www.verdegaalbrothers.com
verdegaal@verdegaalbrothers.com, jgregory@verdegaalbrothers.com
receptionist@verdegaalbrothers.com

Telephone (General) • (559) 582-9205

Telephone (General) • (888) 742-8728

Emergency telephone number

Manufacturer

- 1-800-535-5053 - INFOTRAC - for emergency notification

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012

- Acute Toxicity Oral 4
Skin Irritation 2
Serious Eye Damage 1

Label elements

OSHA HCS 2012

DANGER



- Hazard statements** • Harmful if swallowed
Causes skin irritation
Causes serious eye damage

Precautionary statements

- Prevention** • Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
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.
Wash contaminated clothing before reuse.
If skin irritation occurs: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth.
- Storage/Disposal** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Other hazards

- OSHA HCS 2012**
 - Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Section 3 - Composition/Information on Ingredients

Substances

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Urea sulfate, also known as monocarbamide dihydrogen sulfate	CAS:21351-39-3	100%	NDA	OSHA HCS 2012: Acute Tox. 4 (Oral); Eye Dam. 1; Skin Irrit. 2	NDA

Mixtures

- Material does not meet the criteria of a mixture.

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention immediately.

Skin

- In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing. If irritation develops and persists, get medical attention.

Eye

- Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get medical attention immediately.

Ingestion

- Do NOT induce vomiting. If swallowed, rinse mouth with water (only if the person is conscious) Have person sip a glass of water if able to swallow. Obtain medical attention immediately if ingested.

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 • In case of fire use media as appropriate for surrounding fire.

Unsuitable Extinguishing Media • No data available

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • Containers may explode when heated. During a fire, irritating and highly toxic gases may be generated by thermal decomposition of combustion.

Hazardous Combustion Products • Combustion may yield oxides of carbon, nitrogen, and sulfur may be formed. Exposure to heat may liberate carbon dioxide and ammonia.

Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
Wear positive pressure self-contained breathing apparatus (SCBA).
SMALL FIRES: Move containers from fire area if you can do it without risk.

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 personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures • As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

Environmental precautions

- Avoid run off to waterways and sewers.

Methods and material for containment and cleaning up

Containment/Clean-up Measures • Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Dike to collect large liquid spills.
After removal, flush contaminated area thoroughly with water.
Do not return spills to original containers for re-use.

Section 7 - Handling and Storage

Precautions for safe handling

Handling • Handle and open container with care. Use only with adequate ventilation. Small quantities of carbon dioxide may be liberated during storage. Do not enter confined spaces such as tanks or pits without following proper confined space entry procedures. Wear appropriate personal protective equipment, avoid direct contact. Avoid breathing mist, vapours and/or spray. Avoid contact with skin, eyes or 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 tightly closed. Store in a cool, dry, well-ventilated place. Keep away from incompatible materials. Protect containers against physical damage.

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 • Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory • In case of insufficient ventilation, wear suitable respiratory equipment. 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 eye/face protection - Chemical splash safety goggles, - Face shield.

Skin/Body • Wear appropriate gloves. Wear protective clothing

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	Liquid	Appearance/Description	Odorless liquid that may be dyed blue.
Color	Clear or may be dyed blue.	Odor	Odorless
Odor Threshold	No data available		
General Properties			
Boiling Point	212 °F(100 °C)	Melting Point/Freezing Point	No data available
Decomposition Temperature	No data available	pH	1
Specific Gravity/Relative Density	= 1.43 Water=1	Bulk Density	11.87 lbs/gal
Water Solubility	Soluble 100 %	Viscosity	No data available
Volatility			
Vapor Pressure	No data available	Vapor Density	> 1 Air=1
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)	Not relevant.		
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

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Do not heat above 140°F.

Incompatible materials

- Avoid contact with oxidizers. This material may be extremely hazardous in contact with chlorates or nitrates. This material is acidic in nature. The diluted material is corrosive to metal. Contact with hypochlorites (e.g., aqua ammonia) will generate heat.

Hazardous decomposition products

- Combustion may yield oxides of carbon, nitrogen, and sulfur may be formed. Exposure to heat may liberate carbon dioxide and ammonia.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Urea, sulfate (1:1) (100%)	21351-39-3	Acute Toxicity: Ingestion/Oral-Rat LD50 • 350 mg/kg; Skin-Rabbit LD50 • >2 g/kg

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Acute Toxicity - Oral 4
Skin corrosion/Irritation	OSHA HCS 2012 • Skin Irritation 2
Serious eye damage/Irritation	OSHA HCS 2012 • Serious Eye Damage 1
Skin sensitization	OSHA HCS 2012 • No data available
Respiratory sensitization	OSHA HCS 2012 • No data available
Aspiration Hazard	OSHA HCS 2012 • No data available
Carcinogenicity	OSHA HCS 2012 • No data available
Germ Cell Mutagenicity	OSHA HCS 2012 • No data available
Toxicity for Reproduction	OSHA HCS 2012 • No data available
STOT-SE	OSHA HCS 2012 • No data available
STOT-RE	OSHA HCS 2012 • No data available

Potential Health Effects

Inhalation

- Acute (Immediate)** • May cause irritation.
- Chronic (Delayed)** • No data available

Skin

- Acute (Immediate)** • Causes skin irritation.
- Chronic (Delayed)** • No data available

Eye

- Acute (Immediate)** • Causes serious eye damage.
- Chronic (Delayed)** • No data available

Ingestion

- Acute (Immediate)** • Harmful if swallowed.
- Chronic (Delayed)** • No data available

Key to abbreviations

LD = Lethal 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
UN1760	Corrosive liquid, n.o.s. (Urea, sulfate)	8	III	NDA

Special precautions for user • None known.**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** • Not relevant.**Other information**

- Not regulated if transported by motor vehicle or railcar in packaging that will not react dangerously or be degraded by this material. For reference, see 49 CFR 173.154 (d). If this exemption is not used, shipments should be shipped: UN1760, (urea sulfate), Corrosive Liquid, n.o.s., Class 8, Packing Group III, Corrosive.
- Corrosive to mild steel. Do not ship in aluminum tanks.
- STCC# 2871431 Fertilizing Compounds (Manufactured Fertilizers), n.e.c., Liquid or Paste, or Plant Food, Liquid or Paste.

Section 15 - Regulatory Information

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

SARA Hazard Classifications • Acute

Inventory

Component	CAS	TSCA
Urea sulfate, also known as monocarbamide dihydrogen sulfate	21351-39-3	Yes

United States

Labor

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Urea, sulfate (1:1) 21351-39-3 Not Listed

Environment

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1) 21351-39-3 Not Listed

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

• Urea, sulfate (1:1)	21351-39-3	Not Listed
-----------------------	------------	------------

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

• Urea, sulfate (1:1)	21351-39-3	Not Listed
-----------------------	------------	------------

Section 16 - Other Information**Revision Date**

- June 2017

Preparation Date

- 23/November/2015

Disclaimer/Statement of Liability

- The information in this document is believed to be correct as of the date issued. However, no warranty of merchantability, fitness for any use, or any other warranty is expressed or is to be implied regarding the accuracy of completeness of this information, the results to be obtained from use of this information or the product, the safety of this product, or the hazards related to its use. This information and the product are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of its use thereof.

Key to abbreviations

NDA = No Data Available