



14200 SOUTH PARKER ROAD HOMER GLEN, IL 60491

IN CASE OF EMERGENCY, CALL CHEMTREC  
UNITED STATES: 1-800-424-9300  
INTERNATIONAL: 1-202-483-7616

## MATERIAL SAFETY DATA

### 1. PRODUCT IDENTIFICATION

PRODUCT NAME: **RENEW**  
SYNONYMS: Monocarbamide Dihydrogensulfate (MCDS) Solution  
CHEMICAL FAMILY: Molecular addition compound  
RENEW® is registered in the U.S. Patent and Trademark Office.

### 2. HAZARDOUS INGREDIENTS

COMPONENTS	CAS#	WT%	EXPOSURE LIMITS
Monocarbamide Dihydrogen Sulfate	21351-39-3	79	Not Established
<u>OTHER COMPONENTS</u>			
Water	7732-18-5	17.5	Not Established
Urea	57-13-6	3.5	Not Established

NOTE: State, local or other agencies or advisory groups may have established more stringent limits. Consult a industrial hygienist or similar professional, or your local agencies, for further information.

### 3. EFFECTS OF OVEREXPOSURE:

**EYE:** Corrosive. Contact may cause severe irritation, eye burns and permanent eye damage.

**SKIN:** Severe skin irritant. While skin contact does not normally result in immediate irritation, prolonged or repeated contact may result in redness, swelling, burns, and severe skin damage. No harmful effects from skin absorption have been reported.

**INHALATION:** Corrosive and toxic. May be harmful if inhaled. May cause severe irritation and burns of the nose, throat and respiratory tract.

**INGESTION:** Corrosive and toxic. Harmful if swallowed. May cause severe irritation and burns of the mouth, throat, and digestive tract.

**SYMPTOMS:** Effects of overexposure may include severe irritation and burns of the mouth, nose, throat, respiratory and digestive tract, headaches, coughing, nausea, vomiting, and transient disorientation.

**PRE-EXISTING MEDICAL CONDITIONS:** Conditions aggravated by exposure may include skin and respiratory (asthma-like) disorders.

### 4. EMERGENCY FIRST AID

**EYE:** Immediately move victim away from exposure and into fresh air. If irritation or redness develops, flush eyes with clean water and seek immediate medical attention. For direct contact, immediately hold eyelids apart and flush the affected eye(s) with clean water for at least 30 minutes. Seek immediate medical attention.

**SKIN:** Immediately remove contaminated shoes, clothing and constrictive jewelry and flush affected area(s) with large amount of water. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse the affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

**INHALATION:** Immediately move victim away from exposure and into fresh air. If respiratory

symptoms and other symptoms persist, seek immediately medical attention. If victim

is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, qualified personnel should administer oxygen. Seek immediate medical attention.

**INGESTION:** DO NOT INDUCE VOMITING. CORROSIVE MATERIAL. ACID BURNS. If victim has any breathing difficulties, call for emergency help immediately. If victim is conscious and alert, immediately rinse mouth with water and dilute the ingested material by giving one glass of milk or water to drink; 1/2 glass to children under 5. Immediately call a physician or poison center for assistance. If possible, do not leave victim unattended.

**NOTE TO PHYSICIANS:** This material is corrosive and may cause acid burns, including gastroesophageal perforation. Late complications of severe acid burns include esophageal, gastric, or pyloric strictures and stenosis.

## 5. REACTIVITY DATA

**CHEMICAL STABILITY:** Stable up to 230°F under normal conditions of storage and handling. This material is acidic in nature. Can react with common metals generating hydrogen gas.

**CONDITIONS TO AVOID:** If heated above 230-300°F, material will vigorously decompose, releasing carbon dioxide gas.

**INCOMPATIBLE MATERIALS:** This material may be extremely hazardous in contact with chlorates or nitrates. Avoid contact with oxidizing agents. **Avoid contact with hypochlorites, (e.g., chlorine bleach), sulfides, or cyanide which will generate toxic gases.** Contact with alkaline materials (e.g., aqua ammonia) will generate heat. This material, especially dilute, is corrosive to common metals.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Small amounts of carbon dioxide are released from this material under normal storage condition. If involved in a fire, oxides of carbon, sulfur and nitrogen may be generated. Exposure to heat may liberate carbon dioxide.

**HAZARDOUS POLYMERIZATION:** Will not occur.

## 6. PHYSICAL PROPERTIES

**FLASH POINT:** None to boiling.

**FLAMMABLE/EXPLOSIVE LIMITS (%):** No data.

**AUTOIGNITION TEMPERATURE:** No data.

**APPEARANCE:** Orange

**PHYSICAL STATE:** Liquid.

**ODOR:** None.

**pH:** No data.

**VAPOR PRESSURE (mm Hg):** Not determined.

**VAPOR DENSITY (air=1):** 0.6 H<sub>2</sub>O, 1 Aerosol

**BOILING POINT:** Decomposes between 230-300 °F.

**FREEZING/MELTING POINT:** No data.

**SOLUBILITY IN WATER:** 100%

**SPECIFIC GRAVITY:** 1.52

**NOTE:** Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

## 7. NFPA HAZARD RATING (National Fire Protection Association)

**HEALTH:** 2 (moderate)

**FLAMMABILITY:** 0 (least)

**REACTIVITY:** 2 (moderate)

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## 8. FIRE AND EXPLOSION HAZARD INFORMATION

FLASHPOINT:	None to boiling.
OSHA FLAMMABILITY CLASS:	Not applicable.
LEL/UEL:	No data.
AUTOIGNITION TEMP:	No data.
UNUSUAL FIRE & EXPLOSION HAZARDS:	This material will vigorously decompose, releasing carbon dioxide, if heated above 230-300°F. Closed containers exposed to extreme heat can rupture due to pressure buildup. Contact with common metals can generate hydrogen, which can form flammable mixture with air.
EXTINGUISHING MEDIA:	Use extinguishing agent suitable for type of surrounding fire.
FIRE FIGHTING INSTRUCTIONS:	For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant. Isolate immediate hazard area and keep unauthorized personnel out. If tank, railcar or tank truck is involved in a fire, isolate for 1/2 mile in all directions. Consider initial evacuation for 1/2 mile in all directions. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors. Cool equipment exposed to fire with water, if it can be done with minimal risk.

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## 9. SPECIAL PRECAUTIONS

HANDLING:	Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits. Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Use good personal hygiene practice.
STORAGE:	Keep container(s) tightly closed. Use and store this material in cool, dry, well ventilated areas. Store only in approved containers. Keep away from any incompatible material. Protect container(s) against physical damage. Product degradation may occur if heated above 176°F. Prolonged storage in mild steel containers is not recommended.

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## 10. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	A NIOSH/MSHA approved air purifying respirator with a N95 filter may be used under conditions where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is potential for uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
SKIN:	The use of gloves impermeable to the specific material handled is advised to prevent skin contact and possible irritation, absorption, and skin damage. Depending on conditions of use, apron and/or arm covers may be necessary.
EYE/FACE:	The use of a face shield and/or chemical goggles to safeguard against potential eye contact, irritation, or injury is recommended.
OTHER PROTECTION:	Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn.

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## 11. SPILL OR LEAK PROCEDURES

SPILLS OR RELEASES:	Stay upwind and away from spill/release. Notify persons downwind of spill/release, isolate immediate hazard area for at least 80 to 160 feet in all directions and keep
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unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material. Notify appropriate federal, state and local agencies. Immediate cleanup of any spill is recommended. If spill/release in excess of EPA reportable quantity is made into the environment, immediately notify the National Response Center 800-424-8802.

**NOTE:** Dilute any remaining pools of liquid 3 or 1 with water and then neutralize with sodium bicarbonate or sodium carbonate (soda ash). Do not attempt to neutralize without first diluting with water.

**DISPOSAL:**

This material, if discarded as produced, is not a RCRA "listed" or "characteristic" hazardous waste. If material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Use resulting in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material. Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

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## 12. TRANSPORT INFORMATION

DOT PROPER SHIPPING/TECHNICAL NAME: Corrosive Liquid, N.O.S. (Monocarbamide dihydrogensulfate)

DOT HAZARD CLASS OR DIVISION: 8

DOT ID NUMBER (UN/NA): UN1760

PACKAGING: III

Note: DOT corrosive to aluminum. Not regulated if transported by motor vehicle or railcar in packaging that will not react dangerously or be degraded by this material (49 CFR 173.154(d)).

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## 13. REGULATORY INFORMATION

COMPOUNDS WHICH REQUIRE REPORTING UNDER SARA TITLE 313 and 40 CFR 372.

Sara Regulated Compounds	Section	CAS NO.	Percent
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None Known



The recommendation for safe handling and protection procedures is believed to be generally suitable for the standard uses of this compound. However, each user should identify his intended uses of this material and determine whether they are appropriate. All data included in this document is released as typical values and should not be utilized to determine the suitability of this material for a particular use or purpose. No warranty, either expressed or implied, is hereby made, nor do we give permission, inducement, or recommendations to practice any patented invention without a license. All data is offered for consideration, investigation and verification purposes only.