

Biuret Reagent Solution

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Biuret Reagent Solution

Synonyms/Generic Names: Biuret solution for protein test

SDS Number: 102.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Corrosive, Target organ effect

Target Organs: Kidney, Liver, Eyes, Skin, Mucous membranes, Respiratory system, Cardiovascular system

Signal Words: Danger

Pictograms:



GHS Classification:

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|------------------------|------------|
| Skin corrosion | Category 1 |
| Serious eye damage | Category 1 |
| Acute aquatic toxicity | Category 3 |

GHS Label Elements, including precautionary statements:

Hazard Statements:

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| H314 | Causes severe skin burns and eye damage. |
| H401 | Harmful to aquatic life. |

Precautionary Statements:

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| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. |
| P310 | Immediately call a POISON CENTER or doctor/physician. |

Potential Health Effects

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|-------------------|---|
| Eyes | Causes severe eye burns. |
| Inhalation | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| Skin | May be harmful if absorbed through skin. Causes skin burns. |
| Ingestion | May be harmful if swallowed. |

NFPA Ratings

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|------------------------|---------------|
| Health | 3 |
| Flammability | 0 |
| Reactivity | 1 |
| Specific hazard | Not Available |

HMIS Ratings

| | |
|-------------------|---|
| Health | 3 |
| Fire | 0 |
| Reactivity | 1 |
| Personal | J |

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | Weight % | CAS # | EINECS# / ELINCS# | Formula | Molecular Weight |
|------------------|-----------------|--------------|--------------------------|--------------------------------------|-------------------------|
| Cupric Sulfate | <1 | 7758-99-8 | 231-847-6 | CuSO ₄ ·5H ₂ O | 249.69 g/mol |
| Sodium Hydroxide | 30-31 | 1310-73-2 | 215-185-5 | NaOH | 40.00 g/mol |
| Water | 69-70 | 7732-18-5 | 231-791-2 | H ₂ O | 18.00 g/mol |

4. FIRST-AID MEASURES

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| Eyes | Immediately rinse with plenty of water for at least 15 minutes and seek medical attention immediately. |
| Inhalation | Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately. |
| Skin | Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately. |
| Ingestion | Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately. |

5. FIRE-FIGHTING MEASURES

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| Suitable (and unsuitable) extinguishing media | Product is not flammable. Use appropriate media for adjacent fire. Cool unopened containers with water. |
| Special protective equipment and precautions for firefighters | Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. |
| Specific hazards arising from the chemical | Emits toxic fumes (copper oxides, sulfur oxides, sodium oxides) under fire conditions. (See also Stability and Reactivity section). |

6. ACCIDENTAL RELEASE MEASURES

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| Personal precautions, protective equipment and emergency procedures | See section 8 for recommendations on the use of personal protective equipment. |
| Environmental precautions | Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements. |
| Methods and materials for | Neutralize spill. Absorb spill with noncombustible absorbent material, then |

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| containment and cleaning up | place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations. |
|------------------------------------|---|

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities

Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

| Component | Exposure Limits | Basis | Entity |
|------------------|---------------------|-------|--------|
| Copper Sulfate | 1 mg/m ³ | REL | NIOSH |
| Sodium Hydroxide | 2 mg/m ³ | CEIL | ACGIH |
| | 2 mg/m ³ | PEL | OSHA |
| | 2 mg/m ³ | CEIL | NIOSH |

- TWA: Time Weighted Average over 8 hours of work.
- TLV: Threshold Limit Value over 8 hours of work.
- REL: Recommended Exposure Limit
- PEL: Permissible Exposure Limit
- STEL: Short Term Exposure Limit during x minutes.
- IDLH: Immediately Dangerous to Life or Health
- WEEL: Workplace Environmental Exposure Levels
- CEIL: Ceiling

Personal Protection

| | |
|-------------------|--|
| Eyes | Wear chemical safety glasses or goggles with face shield. |
| Inhalation | Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator. |
| Skin | Wear nitrile or rubber gloves, and complete body suit. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. |
| Other | Not Available |

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

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|--|---------------------------|
| Appearance (physical state, color, etc.) | Opaque, dark blue liquid. |
| Odor | Not Available |
| Odor threshold | Not Available |
| pH | Basic. |
| Melting point/freezing point | Not Available |

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|---|------------------|
| Initial boiling point and boiling range | Not Available |
| Flash point | Not Flammable |
| Evaporation rate | Not Available |
| Flammability (solid, gas) | Not Flammable |
| Upper/lower flammability or explosive limit | Not Explosive |
| Vapor pressure | Not Available |
| Vapor density | Not Available |
| Density | 1.33 (water = 1) |
| Solubility (ies) | Not Available |
| Partition coefficient: n-octanol/water | Not Available |
| Auto-ignition temperature | Not Available |
| Decomposition temperature | Not Available |

10. STABILITY AND REACTIVITY

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|---|--|
| Chemical Stability | Stable |
| Possibility of Hazardous Reactions | Will not occur. |
| Conditions to Avoid | Not Available |
| Incompatible Materials | Acids, organic materials, chlorinated solvents, aluminum, phosphorus, zinc, tin, oxidizing agents. |
| Hazardous Decomposition Products | Copper oxides, sulfur oxides, sodium oxides. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| | |
|--------------------|---------------|
| Skin | Not Available |
| Eyes | Not Available |
| Respiratory | Not Available |
| Ingestion | Not Available |

Carcinogenicity

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|--------------|--|
| IARC | No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| ACGIH | No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |
| NTP | No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| OSHA | No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |

Signs & Symptoms of Exposure

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|--------------------|---|
| Skin | Redness, blistering, burning, itching, tissue destruction with slow healing. |
| Eyes | Redness, tearing, itching, burning, damage to cornea, conjunctivitis, loss of vision. |
| Respiratory | Coughing, wheezing, shortness of breath, headache, spasm, inflammation and edema of bronchi, pneumonitis. |
| Ingestion | Nausea, vomiting, burning, diarrhea, ulceration, convulsions, shock. |

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| Chronic Toxicity | Repeated/prolonged skin contact may cause thickening, blackening or cracking. Repeated eye exposure may cause corneal erosion or loss of vision. |
| Teratogenicity | Not Available |
| Mutagenicity | Not Available |
| Embryotoxicity | Not Available |
| Specific Target Organ Toxicity | Not Available |

| | |
|---------------------------------------|---------------|
| Reproductive Toxicity | Not Available |
| Respiratory/Skin Sensitization | Not Available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

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|-----------------------------|---------------|
| Aquatic Vertebrate | Not Available |
| Aquatic Invertebrate | Not Available |
| Terrestrial | Not Available |

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|--------------------------------------|---------------|
| Persistence and Degradability | Not Available |
| Bioaccumulative Potential | Not Available |
| Mobility in Soil | Not Available |
| PBT and vPvB Assessment | Not Available |
| Other Adverse Effects | Not Available |

13. DISPOSAL CONSIDERATIONS

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|---------------------------|--|
| Waste Residues | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residues. |
| Product Containers | Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container. |

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

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| US DOT | UN1824, Sodium hydroxide solution, 8, pg II |
| TDG | UN1824, SODIUM HYDROXIDE SOLUTION, 8, PG II |
| IMDG | UN1824, SODIUM HYDROXIDE SOLUTION, 8, PG II |
| Marine Pollutant | No |
| IATA/ICAO | UN1824, Sodium hydroxide solution, 8, pg II |

15. REGULATORY INFORMATION

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|---------------------------|---|
| TSCA Inventory Status | All ingredients are listed on the TSCA inventory. |
| DSCL (EEC) | All ingredients are listed on the DSCL inventory. |
| California Proposition 65 | Not Listed |
| SARA 302 | Not Listed |
| SARA 304 | Not Listed |
| SARA 311 | Sodium Hydroxide, Cupric Sulfate |
| SARA 312 | Sodium Hydroxide, Cupric Sulfate |
| SARA 313 | Listed: Cupric Sulfate |
| WHMIS Canada | Class E: Corrosive material. |

16. OTHER INFORMATION

| Revision | Date |
|------------|------------|
| Revision 1 | 01/11/2013 |
| Revision 2 | 06/21/2013 |
| | |

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