

# SAFETY DATA SHEET

Creation Date 08-Nov-2010

Revision Date 18-Jan-2018

Revision Number 4

## 1. Identification

**Product Name** Guanidine hydrochloride

**Cat No. :** BP178-1; BP178-500

**CAS-No** 50-01-1  
**Synonyms** No information available

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Not for food, drug, pesticide or biocidal product use

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

#### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

#### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                                  |            |
|--------------------------------------------------|------------|
| Acute oral toxicity                              | Category 4 |
| Acute Inhalation Toxicity - Dusts and Mists      | Category 4 |
| Skin Corrosion/irritation                        | Category 2 |
| Serious Eye Damage/Eye Irritation                | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Central nervous system (CNS).    |            |
| Combustible dust                                 | Yes        |

### Label Elements

#### **Signal Word**

Warning

#### **Hazard Statements**

May form combustible dust concentrations in air  
Harmful if swallowed  
Causes skin irritation  
Causes serious eye irritation  
Harmful if inhaled  
May cause drowsiness or dizziness

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear protective gloves/protective clothing/eye protection/face protection

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician if you feel unwell

**Skin**

IF ON SKIN: Wash with plenty of soap and water  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing and wash before reuse

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth

**Storage**

Store in a well-ventilated place. Keep container tightly closed  
Store locked up

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

**3. Composition/Information on Ingredients**

| Component               | CAS-No  | Weight % |
|-------------------------|---------|----------|
| Guanidine hydrochloride | 50-01-1 | >95      |

**4. First-aid measures****General Advice**

If symptoms persist, call a physician.

**Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

**Inhalation**

Move to fresh air. Obtain medical attention. If not breathing, give artificial respiration.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Most important symptoms and effects**

None reasonably foreseeable.

Notes to Physician Treat symptomatically

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable Extinguishing Media** No information available

**Flash Point** No information available  
**Method -** No information available

**Autoignition Temperature**

**Explosion Limits**

**Upper** No data available

**Lower** No data available

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

### Specific Hazards Arising from the Chemical

Fine dust dispersed in air may ignite. Dust can form an explosive mixture in air. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

### Hazardous Combustion Products

Hydrogen chloride gas Nitrogen oxides (NO<sub>x</sub>) Carbon monoxide (CO) Carbon dioxide (CO<sub>2</sub>)

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### NFPA

**Health**  
2

**Flammability**  
0

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation.  
**Environmental Precautions** Should not be released into the environment. See Section 12 for additional ecological information.

**Methods for Containment and Clean Up** Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

## 7. Handling and storage

**Handling** Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Avoid ingestion and inhalation. Do not get in eyes, on skin, or on clothing.

**Storage** Keep containers tightly closed in a dry, cool and well-ventilated place.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering Measures** Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

**Eye/face Protection** Tightly fitting safety goggles.

|                                 |                                                                                                                                                                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Skin and body protection</b> | Long sleeved clothing.                                                                                                                                                                                                                            |
| <b>Respiratory Protection</b>   | 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 if irritation or other symptoms are experienced. |
| <b>Hygiene Measures</b>         | Handle in accordance with good industrial hygiene and safety practice.                                                                                                                                                                            |

## 9. Physical and chemical properties

|                                               |                                 |
|-----------------------------------------------|---------------------------------|
| <b>Physical State</b>                         | Solid                           |
| <b>Appearance</b>                             | White                           |
| <b>Odor</b>                                   | Odorless                        |
| <b>Odor Threshold</b>                         | No information available        |
| <b>pH</b>                                     | 4.8                             |
| <b>Melting Point/Range</b>                    | 178 - 188 °C / 352.4 - 370.4 °F |
| <b>Boiling Point/Range</b>                    | No information available        |
| <b>Flash Point</b>                            | No information available        |
| <b>Evaporation Rate</b>                       | Not applicable                  |
| <b>Flammability (solid,gas)</b>               | No information available        |
| <b>Flammability or explosive limits</b>       |                                 |
| Upper                                         | No data available               |
| Lower                                         | No data available               |
| <b>Vapor Pressure</b>                         | No information available        |
| <b>Vapor Density</b>                          | Not applicable                  |
| <b>Specific Gravity</b>                       | No information available        |
| <b>Solubility</b>                             | Soluble in water                |
| <b>Partition coefficient; n-octanol/water</b> | No data available               |
| <b>Autoignition Temperature</b>               |                                 |
| <b>Decomposition Temperature</b>              | No information available        |
| <b>Viscosity</b>                              | Not applicable                  |
| <b>Molecular Formula</b>                      | C H5 N3 . H Cl                  |
| <b>Molecular Weight</b>                       | 95.53                           |

## 10. Stability and reactivity

|                                         |                                                                                                       |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>Reactive Hazard</b>                  | None known, based on information available                                                            |
| <b>Stability</b>                        | Stable under normal conditions. Hygroscopic.                                                          |
| <b>Conditions to Avoid</b>              | Incompatible products. Excess heat. Avoid dust formation. Exposure to moist air or water.             |
| <b>Incompatible Materials</b>           | Strong oxidizing agents                                                                               |
| <b>Hazardous Decomposition Products</b> | Hydrogen chloride gas, Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ) |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.                                                              |
| <b>Hazardous Reactions</b>              | None under normal processing.                                                                         |

## 11. Toxicological information

### Acute Toxicity

### Product Information

### Component Information

| Component               | LD50 Oral       | LD50 Dermal          | LC50 Inhalation   |
|-------------------------|-----------------|----------------------|-------------------|
| Guanidine hydrochloride | 475 mg/kg (Rat) | >2000 mg/kg (Rabbit) | 3.2 mg/L/4h (Rat) |

|                                    |                          |
|------------------------------------|--------------------------|
| <b>Toxicologically Synergistic</b> | No information available |
|------------------------------------|--------------------------|

**Products****Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** Irritating to eyes and skin

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component               | CAS-No  | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-------------------------|---------|------------|------------|------------|------------|------------|
| Guanidine hydrochloride | 50-01-1 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** Not mutagenic in AMES Test

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** Central nervous system (CNS)

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

| Component               | Freshwater Algae | Freshwater Fish                            | Microtox                                    | Water Flea |
|-------------------------|------------------|--------------------------------------------|---------------------------------------------|------------|
| Guanidine hydrochloride | Not listed       | LC50: = 1758 mg/L, 48h<br>(Leuciscus idus) | = 88.7 mg/L EC50<br>Pseudomonas putida 18 h | Not listed |

**Persistence and Degradability** Persistence is unlikely

**Bioaccumulation/ Accumulation** No information available.

**Mobility** . Will likely be mobile in the environment due to its water solubility.

| Component               | log Pow |
|-------------------------|---------|
| Guanidine hydrochloride | -1.7    |

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT** Not regulated  
**TDG** Not regulated  
**IATA** Not regulated  
**IMDG/IMO** Not regulated

## 15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

### International Inventories

| Component               | TSCA | DSL | NDSL | EINECS    | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|-------------------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Guanidine hydrochloride | X    | X   | -    | 200-002-3 | -      |     | X     | X    | X    | X     | X    |

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

### U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration  
Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know  
Regulations Not applicable

### U.S. Department of Transportation

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

### U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

### Other International Regulations

Mexico - Grade No information available

## 16. Other information

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**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**