

**SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION**

**1.1 Product identifier**

**Product name:** Metformin Hydrochloride Oral Solution, 500 mg/5 mL  
**Product Code:** Metformin Hydrochloride Oral Solution, 500 mg/5 mL  
**Synonym(s):** Active ingredient - Metformin hydrochloride; N,N-dimethylimidodicarbonimidic diamide hydrochloride

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

**Recommended use:** Metformin Hydrochloride Oral Solution, 500 mg/5 mL is a pharmaceutical product indicated as an adjunct to diet and exercise to improve glycemic control in adults and children with type 2 diabetes mellitus.  
**Restrictions on use:** Refer to the product insert and/or prescribing information for restrictions on use and contraindications.

**1.3 Details of the supplier and of the safety data sheet**

**Manufacturer/Distributor**  
 VistaPharm, Inc.  
 7265 Ulmerton Road  
 Largo, FL 33771 USA  
 +1-727-530-1633

**1.4 Emergency telephone number:** In the continental USA: +1-727-530-1633

**SECTION 2 - HAZARDS IDENTIFICATION**

**2.1 Classification of substance or mixture**

**Product definition:** Mixture  
**Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008**  
 Not a dangerous substance or mixture according to OSHA or to European Union Legislation

**2.2 Label elements**

Not a dangerous substance or mixture according to GHS

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS**

None known

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

**3.1 Substances**

Not applicable

**3.2 Mixtures**

Concentration	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
500 mg/5 mL	Metformin hydrochloride	1115-70-4	214-230-6	-----	H302, H315, H319

Inactive ingredients: Xylitol; Sucralose; Hydrochloric Acid; Sodium Hydroxide; Purified Water; Artificial Wild Cherry Flavor

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

**SECTION 4 - FIRST AID MEASURES**

**4.1 Description of first aid measures**

**Inhalation:** If product mist or vapor 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. Get immediate medical attention. If unconscious place in the recovery position and get immediate medical attention. Maintain an open airway. Loosen tight clothing such as a collar tie, belt or waistband. If symptoms persist or if other symptoms develop, seek medical attention.

**Eyes:** Immediately flush eyes with large amounts of water or saline solution for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do, after first 2 minutes and continue rinsing. If irritation persists, seek medical attention, preferably from an ophthalmologist.

**Skin:** Rinse skin with water while removing contaminated clothing. Wash the affected area with soap and water. Wash contaminated clothing and shoes before reuse. In the event of any complaints or symptoms, avoid further exposure and seek medical attention.

**Ingestion:** Rinse mouth with water if the victim is conscious. Remove dentures if present. DO NOT induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept lower than the waist so that vomit does not enter the lungs. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. If the victim is unconscious, place in the recovery position and immediately contact a POISON CONTROL CENTER or doctor. Seek medical attention if adverse health effects persist or are severe.

## 4.2 Most important symptoms and effects, both acute and delayed

### Potential health symptoms and effects

**Eyes:** May cause eye irritation.

**Skin:** May cause mild, transient skin irritation.

**Inhalation:** This product is not expected to be an inhalation hazard when used as directed. Inhalation of mist may cause irritation of the upper respiratory system.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting, abdominal pain and diarrhea. May cause low blood sugar, dizziness, light-headedness and weakness. May cause muscle pain or weakness and numb or cold feeling in the arms and legs. May cause breathing difficulty and slow or uneven heart rate. May cause lactic acidosis. Refer to product insert for complete side effect data.

**Chronic:** Refer to product insert for full details of chronic effects.

## 4.3 Indication of any immediate medical attention and special treatment needed

### Advice to doctor and hospital personnel

Refer to product insert and/or product prescribing information for comprehensive information regarding adverse reactions and other important symptoms and effects.

## SECTION 5 - FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

**Suitable methods of extinction:** Use extinguishing media suitable for the surrounding fire.

**Unsuitable methods of extinction:** None known

### 5.2 Special hazards arising from the substance or mixture

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

**Explosion hazards:** This product is not considered to be an explosion hazard.

### 5.3 Advice to firefighters

Full protective equipment including self-contained breathing apparatus should be used. If possible, firefighters should control runoff water to prevent environmental contamination.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing and equipment designated in Section 8.2. Ventilate the area. Remove all sources of ignition. No smoking. Clean up spills immediately. Spill creates 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. Small spills can be wiped up with absorbent material (e.g. cloth, fleece). Cover larger spills with inert absorbent. Do not use combustible material such as sawdust. Collect material and place into an approved, labeled container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Dispose of material via a licensed pharmaceutical waste contractor and in accordance with FDA and DEA regulations. Clean contaminated area with soap and water

### 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 all label precautions. Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. No smoking. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator.

#### Advice on protection against fire and explosion

Product does not present a fire or explosion hazard.

### 7.2 Conditions for safe storage, including any incompatibilities

Store at controlled room temperature between 20 - 25 °C (68 - 77 °F); excursions permitted between 15 - 30 °C (59 - 86). Store in a dry, well-ventilated area away from incompatible materials (see Section 10.5), food and drink. Protect from light. Do not refrigerate. Keep container tightly closed when not in use. Protect containers from physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers of this material are hazardous when empty as they contain product residue. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Keep locked up and 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

#### Occupational exposure limit values

Contains no substances with occupational exposure values.

### 8.2 Exposure controls

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

**Individual protection measures:** Not normally required. 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.

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

**Eye/face protection:** None normally required. If there is a danger of splashing wear safety glasses with unperforated side shields during use.

**Hand protection:** Wear Nitrile rubber gloves or those recommended by glove supplier for protection against materials in Section 3. Breakthrough time of selected gloves must be greater than the intended use period.

**Other protective equipment:** Not normally needed. Wear protective clothing and protective boots if the situation requires.

**Respiratory protection:** No personal respiratory protective equipment normally required. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to vapor/fume at levels exceeding the exposure limits.

**Environmental exposure controls:** Do not empty into drains.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

<b>Appearance</b>	Clear, colorless solution
<b>Odor</b>	Wild cherry
<b>Odor Threshold</b>	No data available
<b>Molecular Weight</b>	165.62 g/mol (Metformin hydrochloride)
<b>Chemical Formula</b>	C <sub>4</sub> H <sub>11</sub> N <sub>5</sub> •HCl (Metformin hydrochloride)
<b>pH (1% aqueous solution)</b>	6.68
<b>Freezing/Melting Point</b>	No data available
<b>Boiling Point Range</b>	No data available
<b>Evaporation Rate</b>	No data available
<b>Flammability (solid, gas)</b>	Not applicable
<b>Flash Point</b>	No data available
<b>Autoignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Lower Explosive Limit (LEL)</b>	No data available
<b>Upper Explosive Limit (UEL)</b>	No data available
<b>Vapor Pressure</b>	No data available
<b>Vapor Density</b>	No data available
<b>Specific Gravity</b>	No data available
<b>Density</b>	No data available
<b>Viscosity</b>	No data available
<b>Solubility in Water</b>	Soluble
<b>Partition Coefficient (n-octanol/water)</b>	No data available
<b>Oxidizing Properties</b>	Not applicable
<b>Explosive Properties</b>	Not applicable
<b>Volatiles by Weight @ 21 °C</b>	No data available

### 9.2 Other Data

No data available

## SECTION 10 - STABILITY AND REACTIVITY

### 10.1 Reactivity

No special reactivity has been reported during normal conditions of handling and use.

### 10.2 Chemical Stability

This material is stable under recommended storage and handling conditions.

### 10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4 Conditions to avoid

Avoid temperature extremes and contact with incompatible materials. Do not refrigerate.

### 10.5 Incompatible materials

Strong oxidizing agents, strong bases

### 10.6 Hazardous decomposition products

Thermal decomposition products may include oxides of carbon, nitrogen oxides, hydrogen chloride gas.

## SECTION 11 - TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute oral toxicity

May be harmful if swallowed in large quantities.

#### Acute inhalation toxicity

Expected to have low acute inhalation toxicity

#### Acute dermal toxicity

Expected to have low acute dermal toxicity

#### Skin irritation

May cause mild skin irritation.

#### Eye irritation

May cause eye irritation.

#### Sensitization

No data available

#### Genotoxicity in vitro

No data available

#### Mutagenicity

No data available

#### Specific organ toxicity - single exposure

No data available

#### Specific organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

### 11.2 Further information

Metformin Hydrochloride (CAS #11115-70-4) may cause lactic acidosis, a rare, but serious metabolic complication that can occur due to metformin accumulation. Lactic acidosis is characterized by elevated blood lactate levels (>5 mmol/L), decreased blood pH, electrolyte disturbances with an increased anion gap, and an increased lactate/pyruvate ratio. When metformin is implicated as the cause of lactic acidosis, metformin plasma levels >5 µg/mL are generally found.

Refer to product insert and/or product prescribing information for comprehensive information regarding adverse reactions and other important symptoms and effects.

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12 - ECOLOGICAL INFORMATION

### 12.1 Toxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulation potential

The bioaccumulation potential for this material is low.

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

No data available

## 12.6 Other effects

### Additional ecological information

Do not allow material to enter surface waters, wastewater 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

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 via a licensed pharmaceutical waste contractor and in accordance with FDA and DEA regulations. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

**RCRA F-Series:** No listings above the reportable threshold (de minimis)

**RCRA U-Series:** No listings above the reportable threshold (de minimis)

## 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.

**NOT REGULATED FOR TRANSPORT (NOT DANGEROUS GOODS)**

## 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 hazardous in accordance with OSHA 29 CFR 1910-1200.

**Toxic Substance Control Act (TSCA) Inventory:** Metformin Hydrochloride (CAS #1115-70-4) is not listed on the Toxic Substance Control Act (TSCA) Inventory as it is intended for use in applications regulated by the Food and Drug Administration in the United States. It can only be used for TSCS exempt purposes such as R&D or drug use. It is not subject to TSCA 12(b) Export Notification.

**Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.4(f)(2)) and Chemical Code Number:**  
No listings

**Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number:** No listings

#### **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 this product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

**SARA 302/304 Emergency Planning & Notification:** None of the components of this product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

**Comprehensive Response Compensation and Liability Act (CERCLA):** No components of the product exceed the threshold (de minimis) reporting levels for hazardous wastes established by CERCLA.

#### **Clean Air Act (CAA)**

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

This product does not contain Class 1 ozone depleters.

This product does not contain Class 2 ozone depleters.

#### **Clean Water Act (CWA)**

This product does not contain Hazardous Substances listed under the CWA.

This product does not contain Priority Pollutants.

This product does not contain Toxic pollutants.

#### U.S. State Regulations

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

This product contains no chemical(s) known to the state of California to cause cancer birth defects or reproductive harm in concentrations that exceed the threshold (de minimis) reporting levels established under Proposition 65.

##### **Other U.S. State Inventories**

None of the components of this product exceed the threshold (de minimis) reporting level of any the State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists.

#### Canada

**WHMIS Hazard Classification:** Uncontrolled product according to WHMIS classification criteria

Canadian National Pollutant Release Inventory (NPRI): None of the chemicals in this product are listed on the NPRI.

European Economic Community

WGK, Germany (Water danger/protection): No data available

Global Chemical Inventory Lists

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

\*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.

No - One or more components of this product are not on the inventory or are 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	

**HMIS Hazard Rating Legend**

0 = Minimal 1 = Slight 2 = Moderate

3 = Serious 4 = Severe

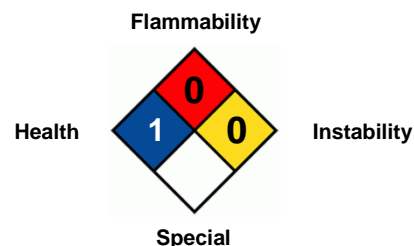
\* = Chronic Health Hazard

**NFPA Hazard Rating Legend**

0 = Insignificant 1 = Slight 2 = Moderate

3 = High 4 = Extreme

**National Fire Protection Association (NFPA)**



**Full text of GHS Hazard Phrases referenced in Section 3 (not covered in Section 2)**

H302 - Harmful if swallowed

H315 - Causes skin irritation

H319 - Causes serious eye irritation

The information herein is given in good faith and is believed to be accurate and correct; however, no warranty, expressed or implied, is made.

VistaPharm, Inc assumes no responsibility for personal injury or property damage that may arise from the use of this material since the conditions of handling and use are beyond our control. It is the responsibility of the user to comply with all Federal, State and local laws and regulations regarding use of this product. Vendees or users assume all risks associated with the use of this material.

Preparation date: 19 September 2018, Version 1

<end of document>