SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Vitamin B Formulation

Manufacturer or supplier's details
Company: MSD
Address: 91-105 Harpin Street
          Bendigo 3550, Victoria Australia
Telephone: +1-908-740-4000
Emergency telephone number: 1 800 033 461
E-mail address: EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use
Recommended use: Pharmaceutical

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Not a hazardous substance or mixture.

GHS label elements
Not a hazardous substance or mixture.

Other hazards which do not result in classification
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyridoxine hydrochloride</td>
<td>58-56-0</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>Thiamine hydrochloride</td>
<td>67-03-8</td>
<td>&lt; 10</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

If inhaled: If inhaled, remove to fresh air.
            Get medical attention if symptoms occur.
In case of skin contact: Wash with water and soap as a precaution.
                          Get medical attention if symptoms occur.
In case of eye contact: Flush eyes with water as a precaution.
                        Get medical attention if irritation develops and persists.
If swallowed: If swallowed, DO NOT induce vomiting.
              Get medical attention if symptoms occur.
              Rinse mouth thoroughly with water.
SAFETY DATA SHEET

Vitamin B Formulation

Most important symptoms and effects, both acute and delayed: None known.

Protection of first-aiders: No special precautions are necessary for first aid responders.

Notes to physician: Treat symptomatically and supportively.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media: None known.

Specific hazards during firefighting: Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides
Nitrogen oxides (NOx)
Chlorine compounds
Oxides of phosphorus
Metal oxides

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions: Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-
mine which regulations are applicable.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Local/Total ventilation: Use only with adequate ventilation.
Advice on safe handling: Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Take care to prevent spills, waste and minimize release to the environment.
Hygiene measures: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
Conditions for safe storage: Keep in properly labelled containers.
Store in accordance with the particular national regulations.
Materials to avoid: Do not store with the following product types: Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyridoxine hydrochloride</td>
<td>58-56-0</td>
<td>TWA</td>
<td>OEB 3 (&gt;= 10 &lt; 100 µg/m3)</td>
<td>Internal</td>
</tr>
<tr>
<td>Thiamine hydrochloride</td>
<td>67-03-8</td>
<td>TWA</td>
<td>OEB 1 (&gt;= 1000 µg/m3)</td>
<td>Internal</td>
</tr>
</tbody>
</table>

Engineering measures: Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
Filter type: Particulates type
Hand protection: Remarks: Wash hands before breaks and at the end of workday.
Eye protection: Wear the following personal protective equipment: Safety glasses
Skin and body protection: Skin should be washed after contact.
### Appearance
- **Appearance**: liquid

### Colour
- **Colour**: No data available

### Odour
- **Odour**: No data available

### Odour Threshold
- **Odour Threshold**: No data available

### pH
- **pH**: No data available

### Melting point/freezing point
- **Melting point/freezing point**: No data available

### Initial boiling point and boiling range
- **Initial boiling point and boiling range**: No data available

### Flash point
- **Flash point**: No data available

### Evaporation rate
- **Evaporation rate**: No data available

### Flammability (solid, gas)
- **Flammability (solid, gas)**: Not applicable

### Flammability (liquids)
- **Flammability (liquids)**: No data available

### Upper explosion limit / Upper flammability limit
- **Upper explosion limit / Upper flammability limit**: No data available

### Lower explosion limit / Lower flammability limit
- **Lower explosion limit / Lower flammability limit**: No data available

### Vapour pressure
- **Vapour pressure**: No data available

### Relative vapour density
- **Relative vapour density**: No data available

### Relative density
- **Relative density**: No data available

### Density
- **Density**: No data available

### Solubility(ies)
- **Water solubility**: No data available

### Partition coefficient: n-octanol/water
- **Partition coefficient: n-octanol/water**: No data available

### Auto-ignition temperature
- **Auto-ignition temperature**: No data available

### Decomposition temperature
- **Decomposition temperature**: No data available

### Viscosity
- **Viscosity, dynamic**: No data available
- **Viscosity, kinematic**: No data available

### Explosive properties
- **Explosive properties**: Not explosive

### Oxidizing properties
- **Oxidizing properties**: The substance or mixture is not classified as oxidizing.
SAFETY DATA SHEET

Vitamin B Formulation

Molecular weight : No data available
Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Can react with strong oxidizing agents.
Conditions to avoid : None known.
Incompatible materials : Oxidizing agents
Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Exposure routes : Inhalation
                  Skin contact
                  Ingestion
                  Eye contact

Acute toxicity
Not classified based on available information.

Components:

Pyridoxine hydrochloride:
Acute oral toxicity : LD50 (Rat): 4,000 mg/kg

Thiamine hydrochloride:
Acute oral toxicity : LD50 (Rat): 3,710 mg/kg
                  Target Organs: Central nervous system, Lungs
                  LD50 (Mouse): 8,224 mg/kg
Skin corrosion/irritation
Not classified based on available information.

Components:

Pyridoxine hydrochloride:
Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation
Not classified based on available information.

Components:

Pyridoxine hydrochloride:
Species : Rabbit
Result : No eye irritation
Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Components:

Pyridoxine hydrochloride:
Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative

Chronic toxicity

Germ cell mutagenicity
Not classified based on available information.

Components:

Pyridoxine hydrochloride:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

Components:

Pyridoxine hydrochloride:
Effects on foetal development: Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

**Pyridoxine hydrochloride:**
- **Toxicity to fish:** LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
  Exposure time: 96 h
- **Toxicity to daphnia and other aquatic invertebrates:** EC50 (Daphnia magna (Water flea)): > 100 mg/l
  Exposure time: 48 h

Persistence and degradability

Components:

**Pyridoxine hydrochloride:**
- **Biodegradability:** Result: Readily biodegradable.
  Biodegradation: 94 %
  Exposure time: 28 d
  Method: OECD Test Guideline 301E

Bioaccumulative potential

Components:

**Pyridoxine hydrochloride:**
- **Partition coefficient: n-octanol/water:** log Pow: 4.32

Mobility in soil
No data available

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- **Waste from residues:** Dispose of in accordance with local regulations.
- **Contaminated packaging:** Empty containers should be taken to an approved waste handling site for recycling or disposal.
  If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

**UNRTDG**
Not regulated as a dangerous good

**IATA-DGR**
Not regulated as a dangerous good
IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

National Regulations
ADG
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

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

Prohibition/Licensing Requirements : There is no applicable prohibition, authorisation and restricted use requirements, including for carcinogens referred to in Schedule 10 of the model WHS Act and Regulations.

The components of this product are reported in the following inventories:
AICS : not determined
DSL : not determined
IECSC : not determined

SECTION 16. OTHER INFORMATION

Further information
Revision Date : 10.10.2020
Date format : dd.mm.yyyy

Full text of other abbreviations
AICS - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with % response; ELx - Loading rate associated with % response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and
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