SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form: Mixture
Trade name: Murashige & Skoog Medium vitamin mixture
Product code: M0409
Synonyms: Murashige & Skoog Medium vitamin mixture to prepare a 1000X vitamin stock solution.
Product group: Raw material

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
Main use category: Professional use
Industrial/Professional use spec: For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

1.2.2. Uses advised against
No additional information available

1.3. Details of the supplier of the safety data sheet
Manufacturer
Duchefa Biochemie B.V.
A. Hofmanweg 71
2031 BH Haarlem - The Netherlands
T +31(0)23-5319093 - F +31(0)23-5318027
info@duchefa.nl

1.4. Emergency telephone number
Emergency number: Supplier contact information:
+31(0)23-5319093 (M-F 09:00-17:00)
+31(0)6-30109355 (outside office hours)

<table>
<thead>
<tr>
<th>Organisation/Company</th>
<th>Address</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Health Organization world directory of poison centres</td>
<td><a href="http://apps.who.int/poisoncentres/">http://apps.who.int/poisoncentres/</a></td>
<td>Consult website for a local poison centre</td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No. 1272/2008 [CLP]
Not classified

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable
2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myo-Inositol</td>
<td>(CAS-No.) 87-89-8</td>
<td>96,993</td>
<td>Not classified</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 201-781-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycine</td>
<td>(CAS-No.) 56-40-6</td>
<td>1,94</td>
<td>Not classified</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-272-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pyridoxine HCl (Vitamine B6)</td>
<td>(CAS-No.) 58-56-0</td>
<td>0,485</td>
<td>Eye Dam. 1, H318</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-386-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nicotinic acid</td>
<td>(CAS-No.) 59-67-6</td>
<td>0,485</td>
<td>Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-441-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thiamine hydrochloride</td>
<td>(CAS-No.) 67-03-8</td>
<td>0,097</td>
<td>Not classified</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 200-641-8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general: Seek medical attention if ill effect develops.
First-aid measures after inhalation: Remove victim to fresh air.
First-aid measures after skin contact: Wash skin with mild soap and water.
First-aid measures after eye contact: Rinse with water.
First-aid measures after ingestion: Rinse mouth.

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

Symptoms/effects after skin contact: Causes skin irritation.
Symptoms/effects after eye contact: Redness, pain.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Alcohol resistant foam.
Dry chemical powder.
Carbon dioxide (CO2).
Water spray.
Murashige & Skoog Medium vitamin mixture
Safety Data Sheet
according to Regulation (EU) 2015/830

5.2. Special hazards arising from the substance or mixture
Hazardous decomposition products in case of fire: Under fire conditions, hazardous fumes will be present:
- COx
- NOx
- SOx.

5.3. Advice for firefighters
Firefighting instructions: Prevent fire fighting water from entering the environment.
Protection during firefighting: Wear proper protective equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Avoid raising powdered materials into airborne dust.

6.1.1. For non-emergency personnel
Emergency procedures: Wear suitable protective clothing.

6.1.2. For emergency responders
No additional information available

6.2. Environmental precautions
Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Sweep up dry powder and dispose properly.

6.4. Reference to other sections
No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Avoid dust formation. Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store at room temperature
- Store in dry, well-ventilated area
- Hygroscopic
- Keep container tightly closed and dry.

7.3. Specific end use(s)
For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Exposure controls
Hand protection:
SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Powder</td>
</tr>
<tr>
<td>Colour</td>
<td>White to slightly yellow.</td>
</tr>
<tr>
<td>Odour</td>
<td>Characteristic. Weak.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Readily soluble in water.</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions of storage, handling and use.
10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
Moisture.

10.5. Incompatible materials
Strong oxidizers.

10.6. Hazardous decomposition products
Thermal decomposition generates:
- COx
- NOx
- SOx.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified
Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available
12.6. Other adverse effects
Additional information: Prevent entry to sewers and public waters. Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste treatment methods: Dispose in a safe manner in accordance with local/national regulations. Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / IATA / IMDG

<table>
<thead>
<tr>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number</td>
<td>Not regulated</td>
<td>Not regulated</td>
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<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td>14.2. UN proper shipping name</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es)</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td>14.4. Packing group</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td>14.5. Environmental hazards</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Not regulated</td>
<td>Not regulated</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

No supplementary information available

14.6. Special precautions for user

- Overland transport
  Not regulated

- Transport by sea
  Not regulated

- Air transport
  Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
  Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations
Ensure all national/local regulations are observed.
Germany
Reference to AwSV

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV

Netherlands
SZW-lijs van kankerverwekkende stoffen
SZW-lijs van mutagene stoffen
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling

15.2. Chemical safety assessment
No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimate</td>
</tr>
<tr>
<td>ADR</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>BCF</td>
<td>Bioconcentration factor</td>
</tr>
<tr>
<td>CLP</td>
<td>Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</td>
</tr>
<tr>
<td>DPD</td>
<td>Dangerous Preparations Directive 1999/45/EC</td>
</tr>
<tr>
<td>DSD</td>
<td>Dangerous Substances Directive 67/548/EEC</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods</td>
</tr>
<tr>
<td>LC50</td>
<td>Median lethal concentration</td>
</tr>
<tr>
<td>LD50</td>
<td>Median lethal dose</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>NOAEC</td>
<td>No-Observed Adverse Effect Concentration</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent Bioaccumulative Toxic</td>
</tr>
<tr>
<td>SDS</td>
<td>Safety Data Sheet</td>
</tr>
</tbody>
</table>


Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation, Category 1</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

SDS Biochemicals version 2018
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.