SECTION 1: Identification

1.1 Product identifier
Name: 0.1M Nickel Sulfate Solution
Product number: N6565 & N0122

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: General use

1.3 Details of the supplier of the safety data sheet
Teknova
2290 Bert Dr.
Hollister California 95023
United States
Telephone: 831-637-1100
Telefax: 831-637-2355
e-mail: info@teknova.com
Website: www.teknova.com

1.4 Emergency telephone number
CHEM TREC Emergency Phone Number (800)-424-9300

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture
Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Category</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.4R</td>
<td>respiratory sensitization</td>
<td>1</td>
<td>Resp. Sens. 1</td>
<td>H334</td>
</tr>
<tr>
<td>A.4S</td>
<td>skin sensitization</td>
<td>1</td>
<td>Skin Sens. 1</td>
<td>H317</td>
</tr>
<tr>
<td>A.5</td>
<td>germ cell mutagenicity</td>
<td>2</td>
<td>Muta. 2</td>
<td>H341</td>
</tr>
<tr>
<td>A.6</td>
<td>carcinogenicity</td>
<td>1A</td>
<td>Carc. 1A</td>
<td>H350</td>
</tr>
<tr>
<td>A.7</td>
<td>reproductive toxicity</td>
<td>1B</td>
<td>Repr. 1B</td>
<td>H360</td>
</tr>
<tr>
<td>A.9</td>
<td>specific target organ toxicity - repeated exposure</td>
<td>1</td>
<td>STOT RE 1</td>
<td>H372</td>
</tr>
</tbody>
</table>

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects
- Delayed or immediate effects can be expected after short or long-term exposure.

2.2 Label elements
Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
- Signal word danger
- Pictograms

GHS08

- Hazard statements

H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

- Precautionary statements

P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P285 In case of inadequate ventilation wear respiratory protection.
P302+P352 If on skin: Wash with plenty of water.
P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P308+P313 If exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
P321 Specific treatment (see on this label).
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container to industrial combustion plant.

- Hazardous ingredients for labelling

Nickel (II) Sulfate Hexahydrate

2.3 Other hazards

Hazards not otherwise classified

Toxic to aquatic life with long lasting effects (GHS category 2: aquatic toxicity - acute and/or chronic).

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture
## SECTION 4: First-aid measures

### 4.1 Description of first-aid measures

#### General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

#### Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

#### Following skin contact

Wash with plenty of soap and water.

#### Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

#### Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

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

Symptoms and effects are not known to date.

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

none

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media
  - Water spray, BC-powder, Carbon dioxide (CO2)
- Unsuitable extinguishing media
  - Water jet
5.2 Special hazards arising from the substance or mixture

5.3 Advice for firefighters
In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
For non-emergency personnel
Remove persons to safety.

For emergency responders
Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions
Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up
Advice on how to contain a spill
Covering of drains

Advice on how to clean up a spill
Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques
Use of adsorbent materials.

Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Recommendations
- Measures to prevent fire as well as aerosol and dust generation
  Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene
Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.
7.2 Conditions for safe storage, including any incompatibilities

Consideration of other advice
- Packaging compatibilities
  Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

This information is not available.

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No.</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>DNEL</td>
<td>0.05 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>DNEL</td>
<td>104 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - systemic effects</td>
</tr>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>DNEL</td>
<td>0.05 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - local effects</td>
</tr>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>DNEL</td>
<td>1.6 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - local effects</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls
  General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection
  Wear eye/face protection.

Skin protection
  - Hand protection
    Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

  - Type of material
    Nitrile

  - Other protection measures
    Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.
Respiratory protection
   In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls
   Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>no data available</td>
</tr>
<tr>
<td>Particle</td>
<td>not relevant (liquid)</td>
</tr>
<tr>
<td>Odor</td>
<td>no data available</td>
</tr>
</tbody>
</table>

Other safety parameters

<table>
<thead>
<tr>
<th>pH (value)</th>
<th>not determined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/freezing point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>100 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not relevant, (fluid)</td>
</tr>
</tbody>
</table>

Explosive limits

- Lower explosion limit (LEL) | 0 vol% |
- Upper explosion limit (UEL) | 0 vol% |

Vapor pressure               | not determined |
Density                      | not determined |
Vapor density                | not determined |
Relative density             | Information on this property is not available |
Solubility(ies)              | not determined |
0.1M Nickel Sulfate Solution

SECTION 10: Stability and reactivity

10.1 Reactivity
Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability
See below "Conditions to avoid".

10.3 Possibility of hazardous reactions
No known hazardous reactions.

10.4 Conditions to avoid
There are no specific conditions known which have to be avoided.

10.5 Incompatible materials
There is no additional information.

10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Test data are not available for the complete mixture.

Classification procedure
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
Acute toxicity
The classification criteria for these hazard classes are not met.
Acute toxicity estimate (ATE) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Exposure route</th>
<th>ATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>oral</td>
<td>361.9 mg/kg</td>
</tr>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>inhalation: dust/mist</td>
<td>2.48 mg/l/4h</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
The classification criteria for this hazard class are not met. Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
The classification criteria for this hazard class are not met. Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization
May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity
Suspected of causing genetic defects.

Carcinogenicity
May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Classification</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Legend
1: Carcinogenic to humans

National Toxicology Program (United States): Report on Carcinogens

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Classification</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td></td>
<td>Known to be human carcinogens</td>
<td>10th Report on Carcinogens</td>
</tr>
</tbody>
</table>

Reproductive toxicity
May damage the unborn child. May damage fertility.

Specific target organ toxicity - single exposure
The classification criteria for this hazard class are not met. Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
The classification criteria for this hazard class are not met.
12.1 Toxicity
Toxic to aquatic life with long lasting effects.

### Aquatic toxicity (acute) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>LC50</td>
<td>15.3 mg/l</td>
<td>fish</td>
<td>96 h</td>
</tr>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>EC50</td>
<td>406 µg/l</td>
<td>aquatic invertebrates</td>
<td>24 h</td>
</tr>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>EcC50</td>
<td>237 µg/l</td>
<td>algae</td>
<td>72 h</td>
</tr>
</tbody>
</table>

### Aquatic toxicity (chronic) of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>ErC50</td>
<td>8,363 µg/l</td>
<td>fish</td>
<td>40 d</td>
</tr>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>LC50</td>
<td>≤144 µg/l</td>
<td>aquatic invertebrates</td>
<td>21 d</td>
</tr>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>EC50</td>
<td>≤108 µg/l</td>
<td>aquatic invertebrates</td>
<td>21 d</td>
</tr>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td>10101-97-0</td>
<td>EbC50</td>
<td>6.2 µg/l</td>
<td>aquatic invertebrates</td>
<td>30 d</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
Data are not available.

12.3 Bioaccumulative potential
Data are not available.

12.4 Mobility in soil
Data are not available.

12.5 Results of PBT and vPvB assessment
Data are not available.

12.6 Endocrine disrupting properties
Information on this property is not available.

12.7 Other adverse effects
Data are not available.
SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information
Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages
Only packagings which are approved (e.g. acc. to DOT) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks
Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number

DOT UN 3082
IMDG-Code UN 3082
ICAO-TI UN 3082

14.2 UN proper shipping name

Environmentally hazardous substance, liquid, n.o.s.

14.3 Transport hazard class(es)

DOT 9
IMDG-Code 9
ICAO-TI 9

14.4 Packing group

DOT III
IMDG-Code III
ICAO-TI III

14.5 Environmental hazards

hazardous to the aquatic environment

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.
Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information

Particulars in the shipper’s declaration: UN3082, Environmentally hazardous substance, liquid, n.o.s., 9, III

Danger label(s): 9, fish and tree

Environmental hazards: yes (hazardous to the aquatic environment)

Special provisions (SP): 8, 146, 173, 335, IB3, T4, TP1, TP29

ERG No: 171

International Maritime Dangerous Goods Code (IMDG) - Additional information

Marine pollutant: yes (hazardous to the aquatic environment) (Nickel (II) Sulfate Hexahydrate)

Danger label(s): 9, fish and tree

Special provisions (SP): 274, 335, 969

Excepted quantities (EQ): E1

Limited quantities (LQ): 5 L

EmS: F-A, S-F

Stowage category: A

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Environmental hazards: yes (hazardous to the aquatic environment)

Danger label(s): 9, fish and tree

Special provisions (SP): A97, A158, A197, A215

Excepted quantities (EQ): E1

Limited quantities (LQ): 30 kg
0.1M Nickel Sulfate Solution

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Superfund Amendment and Reauthorization Act (SARA TITLE III)
- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)
  none of the ingredients are listed
- Specific Toxic Chemical Listings (EPCRA Section 313)
  none of the ingredients are listed

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)
  none of the ingredients are listed

Clean Air Act
  none of the ingredients are listed

Right to Know Hazardous Substance List
- Hazardous Substance List (NJ-RTK)

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No.</th>
<th>Remarks</th>
<th>Classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (II) Sulfate Hexahydrate</td>
<td></td>
<td></td>
<td>CA</td>
</tr>
</tbody>
</table>

Legend
CA Carcinogenic

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987
  none of the ingredients are listed

Industry or sector specific available guidance(s)

NPCA-HMIS® III

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic</td>
<td>*</td>
<td>chronic (long-term) health effects may result from repeated overexposure</td>
</tr>
<tr>
<td>Health</td>
<td>2</td>
<td>temporary or minor injury may occur</td>
</tr>
<tr>
<td>Flammability</td>
<td>0</td>
<td>material that will not burn under typical fire conditions</td>
</tr>
<tr>
<td>Physical hazard</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive</td>
</tr>
<tr>
<td>Personal protection</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

United States: en
NFPA® 704

<table>
<thead>
<tr>
<th>Category</th>
<th>Degree of hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>0</td>
<td>material that will not burn under typical fire conditions</td>
</tr>
<tr>
<td>Health</td>
<td>2</td>
<td>material that, under emergency conditions, can cause temporary incapacitation or residual injury</td>
</tr>
<tr>
<td>Instability</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions</td>
</tr>
</tbody>
</table>

National inventories

<table>
<thead>
<tr>
<th>Country</th>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>TSCA</td>
<td>not all ingredients are listed</td>
</tr>
</tbody>
</table>

Legend

TSCA       Toxic Substance Control Act

15.2 Chemical Safety Assessment
Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information, including date of preparation or last revision

Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
<th>Safety-relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Product number: N6565</td>
<td>Product number: N6565 &amp; N0122</td>
<td>yes</td>
</tr>
<tr>
<td>14.7</td>
<td>Special provisions (SP): A97, A158, A197</td>
<td>Special provisions (SP): A97, A158, A197, A215</td>
<td>yes</td>
</tr>
</tbody>
</table>

Key literature references and sources for data

Classification procedure
Physical and chemical properties: The classification is based on tested mixture.
Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).
**0.1M Nickel Sulfate Solution**

Version number: GHS 6.0
Replaces version of: 2022-01-19 (GHS 5)

**Disclaimer**

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculation are based on information furnished by the manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstance of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in section 1. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Teknova, inc. Shall not be held liable for any damage resulting from handling or from contact with the above product.

Teknova, inc.