Section 1. Identification

1.1 Product identifier
Product name : THEROLINK 1000, Part Number 6040-0239
Part no. : 6040-0239
Validation date : 10/21/2018

1.2 Relevant identified uses of the substance or mixture and uses advised against
Material uses : Reagents and Standards for Analytical Chemistry Laboratory Use

1.3 Details of the supplier of the safety data sheet
Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

1.4 Emergency telephone number
In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H320</td>
<td>EYE IRRITATION - Category 2B</td>
</tr>
<tr>
<td>H400</td>
<td>AQUATIC HAZARD (ACUTE) - Category 1</td>
</tr>
<tr>
<td>H410</td>
<td>AQUATIC HAZARD (LONG-TERM) - Category 1</td>
</tr>
</tbody>
</table>

Ingredients of unknown toxicity : Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: > 60%

2.2 GHS label elements
Hazard pictograms : ![Hazard Pictogram]

Signal word : Warning

Hazard statements : H320 - Causes eye irritation.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : P273 - Avoid release to the environment.
P264 - Wash hands thoroughly after handling.

Response : P391 - Collect spillage.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical attention.

Storage : Not applicable.

Disposal : 

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Section 2. Hazards identification

2.3 Other hazards
Hazard not otherwise classified: None known.

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>≥75 - ≤90</td>
<td>1314-13-2</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present 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.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Causes eye irritation.
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Date of issue: 10/21/2018
Section 4. First aid measures

**Eye contact**: Adverse symptoms may include the following:
- irritation
- watering
- redness

**Inhalation**: No specific data.

**Skin contact**: No specific data.

**Ingestion**: No specific data.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**: No specific treatment.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

**Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: None known.

5.2 Special hazards arising from the substance or mixture

**Specific hazards arising from the chemical**: This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- metal oxide/oxides

5.3 Advice for firefighters

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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Section 6. Accidental release measures

6.2 Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up
Methods for cleaning up: Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling
Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)
Recommendations: Industrial applications, Professional applications.
Industrial sector specific solutions: Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters
Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| Zinc oxide      | NIOSH REL (United States, 10/2016).  
|                 | CEIL: 15 mg/m³ Form: Dust  
|                 | TWA: 5 mg/m³ 10 hours. Form: Dust and fumes  
|                 | STEL: 10 mg/m³ 15 minutes. Form: Fume  
|                 | TWA: 5 mg/m³ 8 hours. Form: Fume  
|                 | STEL: 10 mg/m³ 15 minutes. Form: Fume  
|                 | TWA: 5 mg/m³ 10 hours. Form: Respirable fraction  
|                 | TWA: 10 mg/m³ 8 hours. Form: Total dust  
|                 | OSHA PEL (United States, 6/2016).  
|                 | TWA: 5 mg/m³ 8 hours. Form: Fume |

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Section 8. Exposure controls/personal protection

| TWA: 5 mg/m³ 8 hours. Form: Respirable fraction |
| TWA: 15 mg/m³ 8 hours. Form: Total dust |
| **ACGIH TLV (United States, 3/2017)**. |
| TWA: 2 mg/m³ 8 hours. Form: Respirable fraction |
| STEL: 10 mg/m³ 15 minutes. Form: Respirable fraction |

### 8.2 Exposure controls

#### Appropriate engineering controls
- Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

#### Environmental exposure controls

- Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

- Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

#### Skin protection

- Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

- Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

- Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

- Respiratory protection: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance
- Physical state: Solid. [Paste.]
- Color: White. [Light]
- Odor: Not available.
- Odor threshold: Not available.
- pH: Not available.
- Melting point: Not available.
- Boiling point: Not available.
- Flash point: Not available.
- Evaporation rate: Not available.
- Flammability (solid, gas): Not available.
- Lower and upper explosive (flammable) limits: Not available.
- Vapor pressure: Not available.
- Vapor density: Not available.
- Relative density: 2.58
- Density: 2.58 g/cm³
- Solubility: Very slightly soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water: Not available.
- Auto-ignition temperature: Not available.
- Decomposition temperature: Not available.
- Viscosity: Not available.

Section 10. Stability and reactivity

10.1 Reactivity: No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability: The product is stable.

10.3 Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid: No specific data.

10.5 Incompatible materials: May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>LC50 Inhalation Dusts and mists</td>
<td>Rat</td>
<td>&gt;5.7 mg/l</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td></td>
</tr>
</tbody>
</table>

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
irritation
watering
redness

Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.
Section 11. Toxicological information

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

Long term exposure
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

Potential chronic health effects
- General: No known significant effects or critical hazards.
- Carcinogenicity: No known significant effects or critical hazards.
- Mutagenicity: No known significant effects or critical hazards.
- Teratogenicity: No known significant effects or critical hazards.
- Developmental effects: No known significant effects or critical hazards.
- Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Section 12. Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>Acute IC50 1.85 mg/l Marine water</td>
<td>Algae - Skeletonema costatum</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute IC50 46 µg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 98 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1.1 ppm Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.058 mg/l Fresh water</td>
<td>Daphnia</td>
<td>21 days</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
Not available.

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>-</td>
<td>60960</td>
<td>high</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

| Soil/water partition coefficient (K_{oc}) | Not available. |

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Section 12. Ecological information

12.5 Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

DOT / TDG / Mexico / IMDG / IATA: Not regulated.

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not available.

Section 15. Regulatory information

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

U.S. Federal regulations: TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 307: Zinc oxide
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed
Clean Air Act Section 602 Class I Substances: Not listed
Clean Air Act Section 602 Class II Substances: Not listed

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Section 15. Regulatory information

DEA List I Chemicals
(Precursor Chemicals) : Not listed

DEA List II Chemicals
(Essential Chemicals) : Not listed

SARA 302/304
Composition/information on ingredients
No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312
Classification : EYE IRRITATION - Category 2B

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>≥75 - ≤90</td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
</tbody>
</table>

SARA 313

<table>
<thead>
<tr>
<th>Form R - Reporting requirements</th>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>1314-13-2</td>
<td>≥75 - ≤90</td>
<td></td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: ZINC OXIDE FUME
New York : None of the components are listed.
New Jersey : The following components are listed: ZINC OXIDE
Pennsylvania : The following components are listed: ZINC OXIDE; ZINC OXIDE FUME

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals
Not listed.

Montreal Protocol (Annexes A, B, C, E)
Not listed.

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list

Australia : Not determined.
Canada : Not determined.
China : Not determined.
Europe : Not determined.

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Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Country</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>Japan inventory (ENCS): Not determined.</td>
</tr>
<tr>
<td></td>
<td>Japan inventory (ISHL): Not determined.</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Not determined.</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Philippines</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Thailand</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Turkey</td>
<td>Not determined.</td>
</tr>
<tr>
<td>United States</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

Section 16. Other information

History

| Date of issue       | 10/21/2018                  |
| Date of previous issue | 11/22/2016                |
| Version             | 5                           |

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>EYE IRRITATION - Category 2B</td>
<td>Calculation method</td>
</tr>
<tr>
<td>AQUATIC HAZARD (ACUTE) - Category 1</td>
<td>Calculation method</td>
</tr>
<tr>
<td>AQUATIC HAZARD (LONG-TERM) - Category 1</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Notice to reader

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