1. **Product Identifier**
   - **Product Name:** ResistancePlus® MG FleXible Cartridge
   - **Catalogue Number:** S2A-2000410
   - **Part Number:** 2000410-CART

2. **Relevant Identified Uses of the Substance or Mixture and Uses Advised Against**
   - Relevant Identified Use(s) Laboratory use

3. **Details of the Supplier of the Safety Data Sheet**
   - **Manufacturer:** SpeeDx Pty. Ltd
     - Suite G16
     - National Innovation Centre
     - Australian Technology Park
     - 4 Cornwallis Street
     - Eveleigh, NSW, 2015
     - Australia
   - **Telephone (General):** +61 (0)2 9209 4170

4. **Emergency Telephone Number**
   - **Manufacturer:** International: +61 (0)2 9209 4169

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**SECTION 2. HAZARDS IDENTIFICATION**

**EU/EEC**


2.1 **Classification of the Substance or Mixture**

   **CLP**

   The following SDS is for the final finished mixture product only as used in the laboratory. The product contains beads and reagents in the cartridge or in off-board containers. Exemptions for disclosing some component information are pursuant to CLP Article 1(5)(d) and 29 CFR 1910.1200(g)(2)(i)(C)(1)&(2).

   Not classified

2.2 **Label Elements125**

   **CLP**

   **WARNING**

   - **Hazard Statements:**
     - H302 – Harmful if swallowed.
     - EUH031 – Contact with acids liberates toxic gas.
     - H412 – Harmful to aquatic life with long lasting effects.

   - **Precautionary Statements Prevention:**
     - P264 – Wash thoroughly after handling.
Response

P270 – Do not eat, drink or smoke when using this product.
P301+312 – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
P330 – Rinse mouth.

Storage/Disposal

P501 – Dispose of contents/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other Hazards

CLP According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

UN GHS Revision 3 (Labeling Content Used on Products)
According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Third Revised Edition

2.1 Classification of the Substance or Mixture

UN GHS
Acute Toxicity Oral 5
Skin Mild Irritation 5
Eye Mild Irritation 2B

2.2 Label Elements

UN GHS

WARNING

Hazard Statements
May be harmful if swallowed
Causes mild skin irritation
Causes eye irritation

Precautionary Statements

Prevention
Wash thoroughly after handling.
If skin irritation occurs: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Call a POISON CENTER or doctor/physician if you feel unwell.

United States (US)

According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous.
SAFETY DATA SHEET

ResistancePlus® MG FleXible Cartridge

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the Substance or Mixture
OSHA HCS 2012  Eye Mild Irritation 2B

2.2 Label Elements
OSHA HCS 2012

WARNING

Hazard Statements
Causes eye irritation

Precautionary Statements
Wash thoroughly after handling.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

2.3 Other Hazards
OSHA HCS 2012


Canada

According to: WHMIS

2.1 Classification of the Substance or Mixture
WHMIS  Not classified

2.2 Label Elements
WHMIS  No label element(s) required.

2.3 Other Hazards
WHMIS  In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

2.4 Other Information
All other reagents, beads, and other constituents are at concentrations less than 1% in the mixture or not considered hazardous under US hazard communication regulations (29 CFR 1910.1200), EU directives for classification and labeling of substances or mixtures or the Global Harmonization System for classification and labeling of substances or mixtures.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1 Substances
Material does not meet the criteria of a substance.

3.2 Mixtures

### Composition

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Identifiers</th>
<th>%</th>
<th>LD50/LC50</th>
<th>Classifications According to Regulation/Directive</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidine thiocyanate</td>
<td>CAS:593-84-0 EINECS:209-812-1</td>
<td>15% TO 20%</td>
<td>NDA</td>
<td>EU CLP: Acute Tox. 5, H302; H313, H320 UN GHS Revision 3: Acute Tox. 5 (oral); Skin Irrit. 3; Eye Irrit. 2B OSHA HCS 2012: Acute Tox. 5 (oral); Eye Irrit. 2B</td>
<td>NDA</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST AID MEASURES

4.1 Description of First Aid Measures

**Inhalation** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. Move victim to fresh air. Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing.

**Skin** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing.

**Eye** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

**Ingestion** First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Refer to Section 11 - Toxicological Information.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Notes to Physician All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
Suitable Extinguishing Media
LARGE FIRES: Dry chemical, CO2, alcohol-resistant foam or water spray.
SMALL FIRES: Dry chemical, CO2 or water spray.

Unsuitable Extinguishing Media
No data available

5.2 Special Hazards Arising from the Substance or Mixture

Unusual Fire and Explosion Hazards
May emit toxic vapors of carbon oxides, sulfur oxides, nitrogen oxides.

Hazardous Combustion Products
No data available

5.3 Advice for Firefighters

Structural firefighters’ protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Wear positive pressure self-contained breathing apparatus (SCBA).

SMALL FIRES: Move containers from fire area if you can do it without risk.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions
In the event a cartridge is broken these personal precautions are applicable. Wear appropriate protective clothing. Do not walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate enclosed areas.

Emergency Procedures
No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended.

6.2 Environmental Precautions

Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and Material for Containment and Cleaning Up

Containment/ Clean-up Measures
For small spills, wear gloves and absorb spill with paper towel. Do not dispose spilled materials down drain.

6.4 Reference to Other Sections

Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

SECTION 7. HANDLING and STORAGE

7.1 Precautions for Safe handling
Handling
No special handling necessary. If cartridge is broken avoid contact with spilled reagents.

7.2 Conditions for Safe Storage, Including Any Incompatibilities
Storage

Store according to product labeling. Keep away from incompatible materials. Store locked up. Keep container/package tightly closed in a cool, well-ventilated place.

7.3 Specific End Use(s)

Refer to Section 1.2 - Relevant identified uses.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

<table>
<thead>
<tr>
<th>Exposure Limits/Guidelines</th>
<th>Result</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidine thiocyanate</td>
<td>TWAs</td>
<td>5 mg/m³ TWA (as CN)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>as Cyanide compounds</td>
</tr>
</tbody>
</table>

8.2 Exposure Controls

Engineering Measures/Controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/ Face

Wear chemical splash safety goggles.

Skin/Body

Wear protective clothing

Environmental Exposure Controls

Follow best practice for site management and disposal of waste.

Key to abbreviations

OSHA = Occupational Safety and Health Administration

TWA = Time-Weighted Averages are based on 8/h/day, 40/h/week exposures
SECTION 9. PHYSICAL and CHEMICAL PROPERTIES

9.1 Information on Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Physical Form</th>
<th>Appearance/Description</th>
<th>Reagents are clear, colorless liquids with no odor which are primarily buffered in aqueous solutions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Clear</td>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Data lacking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boiling Point</td>
<td>100 °C(212 °F)</td>
<td>Melting Point/Freezing Point</td>
<td>0 °C(32 °F)</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Data lacking</td>
<td>pH</td>
<td>3.5 to 8.8</td>
</tr>
<tr>
<td>Specific Gravity/Relative Density</td>
<td>Data lacking</td>
<td>Water Solubility</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Data lacking</td>
<td>Explosive Properties</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Data lacking</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Volatile</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Data lacking</td>
<td>Vapor Density</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Data lacking</td>
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<td></td>
</tr>
<tr>
<td><strong>Flammability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td>360 to 560 °F (182.2222 to 293.3333 °C) (Binding reagent)</td>
<td>UEL</td>
<td>Data lacking</td>
</tr>
<tr>
<td>LEL</td>
<td>Data lacking</td>
<td>Autoignition</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Data lacking</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Octanol/Water Partition Coefficient</td>
<td>Data lacking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.2 Other Information
No additional physical and chemical parameters noted.

SECTION 10. STABILITY and REACTIVITY

10.1 Reactivity
No dangerous reaction known under conditions of normal use.

10.2 Chemical Stability
Stable

10.3 Possibility of Hazardous Reactions
Hazardous polymerization will not occur.

10.4 Conditions to Avoid
Incompatible materials. Heat contact with acids or bleach may liberate very toxic gas.

10.5 Incompatible Materials
Acids, oxidizing agents.

10.6 Hazardous Decomposition Products
Carbon oxides, sodium oxides, hydrogen cyanide.
### SECTION 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on Toxicological Effects

<table>
<thead>
<tr>
<th>Components</th>
<th>Acute Toxicity: Intraperitoneal-Mouse LD50 • 300 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidine thiocyanate (15% TO 20%)</td>
<td>593-84-0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GHS Properties</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Acute Toxicity - Oral 5 - ATEmix (oral) = 2965 mg/kg</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Skin Mild Irritation 3</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
<tr>
<td>Serious Eye Damage/Irritation</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Eye Mild Irritation 2B</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Eye Mild Irritation 2B</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
<tr>
<td>Respiratory Sensitization</td>
<td>EU/CLP: Data lacking</td>
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<tr>
<td></td>
<td>UN GHS 3•Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
<tr>
<td>Aspiration Hazard</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
<tr>
<td>Toxicity for Reproduction</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
<tr>
<td>STOT-SE</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
<tr>
<td>STOT-RE</td>
<td>EU/CLP: Data lacking</td>
</tr>
<tr>
<td></td>
<td>UN GHS 3•Data lacking</td>
</tr>
<tr>
<td></td>
<td>OSHA HCS 2012•Data lacking</td>
</tr>
</tbody>
</table>
Potential Health Effects

Inhalation
Acute (Immediate) May cause irritation.
Chronic (Delayed) No data available

Skin
Acute (Immediate) Causes skin irritation.
Chronic (Delayed) No data available

Eye
Acute (Immediate) Causes eye irritation.
Chronic (Delayed) No data available

Ingestion
Acute (Immediate) Harmful if swallowed.
Chronic (Delayed) No data available

Key to abbreviations
LD = Lethal Dose

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity
Material data lacking.

12.2 Persistence and Degradability
Material data lacking.

12.3 Bioaccumulative Potential
Material data lacking.

12.4 Mobility in Soil
Material data lacking.

12.5 Results of PBT and vPvB Assessment
No PBT and vPvB assessment has been conducted.

12.6 Other Adverse Effects
No studies have been found.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods
Product Waste Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
Packaging Waste Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

13.2 Other Information
Biological specimens, including used cartridges, should be treated as capable of transmitting infectious agents. Consult your institution's environmental waste personnel on proper disposal of used cartridges and unused reagents. This material may exhibit characteristics of federal EPA Resource Conservation and Recovery Act (RCRA) hazardous waste requiring specific disposal requirements. Check state and local regulations as they may differ from federal disposal regulations. Institutions outside the USA should check their country hazardous waste disposal requirements. Australia regulation of waste disposal will be in accordance to Hazardous Waste (Regulation of Exports and Imports) Act 1989.
14.1 UN Number | 14.2 UN Proper Shipping Name | 14.3 Transport Hazard Class(es) | 14.4 Packing Group | 14.5 Environmental Hazards
--- | --- | --- | --- | ---
DOT | NDA | Not Regulated | NDA | NDA
TDG | NDA | Not Regulated | NDA | NDA
IMO/IMDG | NDA | Not Regulated | NDA | NDA
IATA/ICAO | NDA | Not Regulated | NDA | NDA

14.6 Special Precautions for User
None specified.

14.7 Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code
Data lacking.

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>Canada DSL</th>
<th>Canada NDSL</th>
<th>EU EINECS</th>
<th>EU ELNICS</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guanidine thiocyanate</td>
<td>593-84-0</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Canada
Labor
Canada - WHMIS - Classifications of Substances
• Guanidine thiocyanate 593-84-0 Not Listed

Canada - WHMIS - Ingredient Disclosure List
• Guanidine thiocyanate 593-84-0 Not Listed

Environment
Canada - CEPA - Priority Substances List
• Guanidine thiocyanate 593-84-0 Not Listed

United States
Labor
U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - OSHA - Specifically Regulated Chemicals
• Guanidine thiocyanate 593-84-0 Not Listed

Environment
U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing
• Guanidine thiocyanate 593-84-0 Not Listed

United States - California
Environment
U.S. - California - Proposition 65 - Carcinogens List
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female
• Guanidine thiocyanate 593-84-0 Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male
• Guanidine thiocyanate 593-84-0 Not Listed

15.2 Chemical Safety Assessment
No Chemical Safety Assessment has been carried out.
SECTION 16. OTHER INFORMATION

Relevant Phrases
(code & full text)

Disclaimer/
Statement of Liability

The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its use and all persons receiving it must make their own determination of the effects, properties, protections, and disposal which pertain to their particular conditions. No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantability for a particular purpose), is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and use of the material. The above information is offered in good faith and with the belief that it is accurate. As of the date of issuance, we are providing all information relevant to the foreseeable handling of the material. However, in the event of an adverse incident associated with this product, this Safety Data Sheet is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.

Key to abbreviations
NDA = No data available

END DOCUMENT