1 Identification

- Product identifier
- Trade name: 1,8-Dinitronaphthalene
- Part number: RNH-141
- CAS Number: 602-38-0
- EC number: 210-016-1
- Application of the substance / the mixture: Reagents and Standards for Analytical Chemical Laboratory Use

2 Hazard(s) identification

- Classification of the substance or mixture
  - GHS08 Health hazard
    - Muta. 2   H341  Suspected of causing genetic defects.
  - GHS07
    - Skin Irrit. 2   H315  Causes skin irritation.
    - Eye Irrit. 2A   H319  Causes serious eye irritation.
    - STOT SE 3   H335  May cause respiratory irritation.

- Label elements
  - GHS label elements: The substance is classified and labeled according to the Globally Harmonized System (GHS).

- Hazard pictograms

  - GHS07   GHS08

- Signal word: Warning

- Hazard-determining components of labeling:
  - 1,8-dinitronaphthalene

- Hazard statements:
  - Causes skin irritation.
  - Causes serious eye irritation.
  - Suspected of causing genetic defects.
Trade name: 1,8-Dinitronaphthalene

May cause respiratory irritation.

- **Precautionary statements**
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - Avoid breathing dust/fume/gas/mist/vapors/spray
  - Wash thoroughly after handling.
  - Use only outdoors or in a well-ventilated area.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - If on skin: Wash with plenty of water.
  - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - IF exposed or concerned: Get medical advice/attention.
  - Call a poison center/doctor if you feel unwell.
  - Specific treatment (see on this label).
  - Take off contaminated clothing and wash it before reuse.
  - If skin irritation occurs: Get medical advice/attention.
  - If eye irritation persists: Get medical advice/attention.
  - Store in a well-ventilated place. Keep container tightly closed.
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 2
    - Fire = 0
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4)**
    - HEALTH: 2
    - FIRE: 0
    - REACTIVITY: 0

- **Other hazards**
  - Results of PBT and vPvB assessment
    - **PBT**: Not applicable.
    - **vPvB**: Not applicable.

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**3 Composition/information on ingredients**

- **Chemical characterization: Substances**
- **CAS No. Description**
  - 602-38-0 1,8-dinitronaphthalene
- **Identification number(s)**
- **EC number**: 210-016-1

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**4 First-aid measures**

- **Description of first aid measures**
- **General information**: Immediately remove any clothing soiled by the product.

(Contd. on page 3)
Trade name: 1,8-Dinitronaphthalene

- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:** Not required.
- **Environmental precautions:** Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
  - **PAC-1:** Substance is not listed.
  - **PAC-2:** Substance is not listed.
  - **PAC-3:** Substance is not listed.

7 Handling and storage

- **Handling:**
  - **Precautions for safe handling**
    - Ensure good ventilation/exhaustion at the workplace.
    - Open and handle receptacle with care.
  - **Information about protection against explosions and fires:** Keep respiratory protective device available.
  - **Conditions for safe storage, including any incompatibilities**
  - **Storage:**
  - **Requirements to be met by storerooms and receptacles:** No special requirements.
Trade name: 1,8-Dinitronaphthalene

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace:
  The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
  The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
  At this time, the remaining constituent has no known exposure limits.
  At this time, the other constituents have no known exposure limits.
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures:
    Keep away from foodstuffs, beverages and feed.
    Immediately remove all soiled and contaminated clothing.
    Wash hands before breaks and at the end of work.
    Store protective clothing separately.
    Avoid contact with the eyes and skin.
  - Breathing equipment:
    When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
    Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.
  - Protection of hands:
    Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.
  - Material of gloves
    For normal use: nitrile rubber, 11-13 mil thickness
    For direct contact with the chemical: butyl rubber, 12-15 mil thickness
    The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
  - Penetration time of glove material
    For normal use: nitrile rubber: 1 hour
    For direct contact with the chemical: butyl rubber: >4 hours
Trade name: 1,8-Dinitronaphthalene

*Eye protection:*

Tightly sealed goggles

<table>
<thead>
<tr>
<th>9 Physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Information on basic physical and chemical properties</td>
</tr>
<tr>
<td>· General Information</td>
</tr>
<tr>
<td>· Appearance:</td>
</tr>
<tr>
<td>Form: Crystalline powder</td>
</tr>
<tr>
<td>Color: Light yellow</td>
</tr>
<tr>
<td>· Odor: Characteristic</td>
</tr>
<tr>
<td>· Odor threshold: Not determined.</td>
</tr>
<tr>
<td>· pH-value: Not applicable.</td>
</tr>
<tr>
<td>· Change in condition</td>
</tr>
<tr>
<td>Melting point/Melting range: 173 °C (343.4 °F)</td>
</tr>
<tr>
<td>Boiling point/Boiling range: Undetermined.</td>
</tr>
<tr>
<td>· Flash point: Not applicable.</td>
</tr>
<tr>
<td>· Flammability (solid, gaseous): Product is not flammable.</td>
</tr>
<tr>
<td>· Decomposition temperature: Not determined.</td>
</tr>
<tr>
<td>· Auto igniting: Not determined.</td>
</tr>
<tr>
<td>· Danger of explosion: Product does not present an explosion hazard.</td>
</tr>
<tr>
<td>· Explosion limits:</td>
</tr>
<tr>
<td>Lower: Not determined.</td>
</tr>
<tr>
<td>Upper: Not determined.</td>
</tr>
<tr>
<td>· Vapor pressure: Not applicable.</td>
</tr>
<tr>
<td>· Density: Not determined.</td>
</tr>
<tr>
<td>Relative density Not determined.</td>
</tr>
<tr>
<td>Vapor density Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate Not applicable.</td>
</tr>
<tr>
<td>· Solubility in / Miscibility with</td>
</tr>
<tr>
<td>Water: Insoluble.</td>
</tr>
<tr>
<td>· Partition coefficient (n-octanol/water): Not determined.</td>
</tr>
<tr>
<td>· Viscosity:</td>
</tr>
<tr>
<td>Dynamic: Not applicable.</td>
</tr>
<tr>
<td>Kinematic: Not applicable.</td>
</tr>
<tr>
<td>· VOC content: 0.00 %</td>
</tr>
<tr>
<td>0.0 g/l / 0.00 lb/gal</td>
</tr>
<tr>
<td>· Solids content: 100.0 %</td>
</tr>
</tbody>
</table>

(Contd. on page 6)
10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
  - **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity:**
    - **Primary irritant effect:**
      - **on the skin:** Irritant to skin and mucous membranes.
      - **on the eye:** Irritating effect.
    - **Sensitization:** No sensitizing effects known.
  - **Additional toxicological information:**
    - **Carcinogenic categories**
      - **IARC (International Agency for Research on Cancer)**
        Substance is not listed.
      - **NTP (National Toxicology Program)**
        Substance is not listed.
      - **OSHA-Ca (Occupational Safety & Health Administration)**
        Substance is not listed.

12 Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
  - **Behavior in environmental systems:**
    - **Bioaccumulative potential** No further relevant information available.
    - **Mobility in soil** No further relevant information available.
  - **Additional ecological information:**
    - **General notes:**
      Water hazard class 1 (Self-assessment): slightly hazardous for water
      Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
Trade name: 1,8-Dinitronaphthalene

- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- UN-Number
  - DOT, ADN, IMDG, IATA: not regulated

- UN proper shipping name
  - DOT, ADN, IMDG, IATA: not regulated

- Transport hazard class(es)
  - DOT, ADN, IMDG, IATA: not regulated

- Packing group
  - DOT, IMDG, IATA: not regulated

- Environmental hazards: Not applicable.

- Special precautions for user: Not applicable.

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

- UN "Model Regulation": not regulated

15 Regulatory information

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

  - Section 355 (extremely hazardous substances):
    - Substance is not listed.

  - Section 313 (Specific toxic chemical listings):
    - Substance is not listed.

  - TSCA (Toxic Substances Control Act):
    - Substance is listed.

  - TSCA new (21st Century Act): (Substances not listed)
    - 602-38-0 1,8-dinitronaphthalene

(Contd. on page 8)
Trade name: 1,8-Dinitronaphthalene

- **Proposition 65**
  - **Chemicals known to cause cancer:** Substance is not listed.
  - **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
  - **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
  - **Chemicals known to cause developmental toxicity:** Substance is not listed.
- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)** Substance is not listed.
  - **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
  - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 **Other information**
The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Department issuing SDS:** Document Control / Regulatory
  - **Contact:** regulatory@ultrasci.com
- **Date of preparation / last revision** 03/25/2019 / 1
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - Muta. 2: Germ cell mutagenicity – Category 2
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  - * Data compared to the previous version altered.