1 Identification

- Product identifier
- Trade name: Intermediate Stock Standard no. 2 (1X1 mL)
- Part number: NAIM-833B-1
- Application of the substance / the mixture: Reagents and Standards for Analytical Chemical Laboratory Use
- Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
  Agilent Technologies, Inc.
  5301 Stevens Creek Blvd.
  Santa Clara, CA  95051  USA
- Information department:
  Telephone: 800-227-9770
  e-mail: pdl-msds_author@agilent.com
- Emergency telephone number: CHEMTREC®: 1-800-424-9300

2 Hazard(s) identification

- Classification of the substance or mixture
  - GHS02 Flame
    Flam. Liq. 2 H225 Highly flammable liquid and vapor.
  - GHS08 Health hazard
    Muta. 1B H340 May cause genetic defects.
    Carc. 1B H350 May cause cancer.
    Repr. 2 H361 Suspected of damaging fertility or the unborn child.
  - GHS07
    Acute Tox. 4 H302 Harmful if swallowed.
    Acute Tox. 4 H312 Harmful in contact with skin.
    Eye Irrit. 2A H319 Causes serious eye irritation.

- Label elements
- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms
  - GHS02
  - GHS07
  - GHS08

- Signal word Danger
- Hazard-determining components of labeling:
  acetonitrile
2,6-dinitrotoluene
2-nitrotoluene
3-nitrotoluene

- **Hazard statements**
  - Highly flammable liquid and vapor.
  - Harmful if swallowed or in contact with skin.
  - Causes serious eye irritation.
  - May cause genetic defects.
  - May cause cancer.
  - Suspected of damaging fertility or the unborn child.

- **Precautionary statements**
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - Keep away from heat/sparks/open flames/hot surfaces.
  - No smoking.
  - Keep container tightly closed.
  - Ground/bond container and receiving equipment.
  - Use explosion-proof electrical/ventilating/lighting/equipment.
  - Use only non-sparking tools.
  - Take precautionary measures against static discharge.
  - Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - If swallowed: Call a poison center/doctor if you feel unwell.
  - Rinse mouth.
  - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - 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.
  - Take off contaminated clothing and wash it before reuse.
  - If eye irritation persists: Get medical advice/attention.
  - In case of fire: Use for extinction: CO2, powder or water spray.
  - Store in a well-ventilated place. Keep cool.
  - 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 = 3
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4):**
    - Health = *2
    - Fire = 3
    - Reactivity = 0
  - **Other hazards**
  - **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-05-8 acetonitrile</td>
<td>99.11%</td>
</tr>
<tr>
<td>606-20-2 2,6-dinitrotoluene</td>
<td>0.127%</td>
</tr>
<tr>
<td>88-72-2 2-nitrotoluene</td>
<td>0.127%</td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- After skin contact: Immediately rinse with water.
- After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: Immediately call a 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:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet
- 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
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
Trade name: Intermediate Stock Standard no. 2 (1X1 mL)

· 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

<table>
<thead>
<tr>
<th>PAC-1:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>75-05-8 acetonitrile</td>
<td>13 ppm</td>
</tr>
<tr>
<td>35572-78-2 2-amino-4,6-dinitrotoluene</td>
<td>4.2 mg/m³</td>
</tr>
<tr>
<td>606-20-2 2,6-dinitrotoluene</td>
<td>0.6 mg/m³</td>
</tr>
<tr>
<td>479-45-8 N-methyl-N,2,4,6-tetranitroaniline</td>
<td>4.5 mg/m³</td>
</tr>
<tr>
<td>99-08-1 3-nitrotoluene</td>
<td>6 ppm</td>
</tr>
<tr>
<td>99-99-0 4-nitrotoluene</td>
<td>6 ppm</td>
</tr>
<tr>
<td>88-72-2 2-nitrotoluene</td>
<td>6 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>75-05-8 acetonitrile</td>
<td>50 ppm</td>
</tr>
<tr>
<td>35572-78-2 2-amino-4,6-dinitrotoluene</td>
<td>46 mg/m³</td>
</tr>
<tr>
<td>606-20-2 2,6-dinitrotoluene</td>
<td>47 mg/m³</td>
</tr>
<tr>
<td>479-45-8 N-methyl-N,2,4,6-tetranitroaniline</td>
<td>14 mg/m³</td>
</tr>
<tr>
<td>99-08-1 3-nitrotoluene</td>
<td>14 ppm</td>
</tr>
<tr>
<td>99-99-0 4-nitrotoluene</td>
<td>33 ppm</td>
</tr>
<tr>
<td>88-72-2 2-nitrotoluene</td>
<td>33 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>75-05-8 acetonitrile</td>
<td>150 ppm</td>
</tr>
<tr>
<td>35572-78-2 2-amino-4,6-dinitrotoluene</td>
<td>280 mg/m³</td>
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<tr>
<td>606-20-2 2,6-dinitrotoluene</td>
<td>200 mg/m³</td>
</tr>
<tr>
<td>479-45-8 N-methyl-N,2,4,6-tetranitroaniline</td>
<td>1,300 mg/m³</td>
</tr>
<tr>
<td>99-08-1 3-nitrotoluene</td>
<td>200 ppm</td>
</tr>
<tr>
<td>99-99-0 4-nitrotoluene</td>
<td>200 ppm</td>
</tr>
<tr>
<td>88-72-2 2-nitrotoluene</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

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 ignition sources away - Do not smoke.
    Protect against electrostatic charges.
    Keep respiratory protective device available.

· Conditions for safe storage, including any incompatibilities
  · Storage:
    · Requirements to be met by storerooms and receptacles: Store in a cool location.
    · Information about storage in one common storage facility: Not required.
Further information about storage conditions:
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Specific end use(s) No further relevant information available.

Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.

Components with limit values that require monitoring at the workplace:

75-05-8 acetonitrile
PEL Long-term value: 70 mg/m³, 40 ppm
REL Long-term value: 34 mg/m³, 20 ppm
TLV Long-term value: 34 mg/m³, 20 ppm
Skin

88-72-2 2-nitrotoluene
PEL Long-term value: 30 mg/m³, 5 ppm
Skin
REL Long-term value: 11 mg/m³, 2 ppm
Skin
TLV Long-term value: 11 mg/m³, 2 ppm
Skin; BEI-M

Ingredients with biological limit values:

88-72-2 2-nitrotoluene
BEI 1.5 % of hemoglobin
Medium: blood
Time: during or end of shift
Parameter: Methemoglobin (background, nonspecific, semi-quantitative)

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.
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.
48.1.26 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

- **Penetration time of glove material**
  - For normal use: nitrile rubber: 1 hour
  - For direct contact with the chemical: butyl rubber: >4 hours

- **Eye protection:**
  - Tightly sealed goggles

### 9 Physical and chemical properties

**Information on basic physical and chemical properties**

- **General Information**
  - **Appearance:**
    - Form: Fluid
    - Color: Colorless
  - **Odor:** Aromatic
  - **Odor threshold:** Not determined.
  - **pH-value:** Not determined.

- **Change in condition**
  - Melting point/Melting range: -46 °C (-50.8 °F)
  - Boiling point/Boiling range: 81 °C (177.8 °F)

- **Flash point:** 2 °C (35.6 °F)

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 525 °C (977 °F)

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**
  - Lower: 4.4 Vol %
  - Upper: 16 Vol %

- **Vapor pressure at 20 °C (68 °F):** 0 hPa (0 mm Hg)

- **Density at 20 °C (68 °F):** 0.786 g/cm³ (6.55917 lbs/gal)
  - **Relative density:** Not determined.
  - **Vapor density:** Not determined.
  - **Evaporation rate:** Not determined.

- **Solubility in / Miscibility with Water:** Not miscible or difficult to mix.
Trade name: Intermediate Stock Standard no. 2 (1X1 mL)

- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- **Solvent content:**
  - VOC content: 0.00 %
    - 0.0 g/l / 0.00 lb/gal
- **Solids content:** 0.1 %
- **Other information:** No further relevant information available.

### 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:**
  - **LD/LC50 values that are relevant for classification:**
    - **ATE (Acute Toxicity Estimate):**
      - Oral LD50 1,296 mg/kg
      - Dermal LD50 >1,889 mg/kg
      - Inhalative LC50/4 h 244 mg/L
    - 75-05-8 acetonitrile
      - Oral LD50 1,320 mg/kg (rat)
      - Dermal LD50 >2,000 mg/kg (rabbit)
      - Inhalative LC50/4 h 3,587 mg/L (mouse)
    - 606-20-2 2,6-dinitrotoluene
      - Oral LD50 177 mg/kg (rat)
    - 88-72-2 2-nitrotoluene
      - Oral LD50 891 mg/kg (rat)
- **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** Irritating effect.
  - **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
  The product shows the following dangers according to internally approved calculation methods for preparations:

(Contd. on page 8)
Trade name: Intermediate Stock Standard no. 2 (1X1 mL)

Harmful
Irritant
The product can cause inheritable damage.

- Carcinogenic categories
  - IARC (International Agency for Research on Cancer)
    | Compound          | Category |
    |-------------------|----------|
    | 606-20-2 2,6-dinitrotoluene | 2B       |
    | 99-08-1 3-nitrotoluene     | 3        |
    | 99-99-0 4-nitrotoluene     | 3        |
    | 88-72-2 2-nitrotoluene     | 2A       |
  - NTP (National Toxicology Program)
    | Compound          | Category |
    |-------------------|----------|
    | 88-72-2 2-nitrotoluene | R        |
  - OSHA-Ca (Occupational Safety & Health Administration)
    None of the ingredients is 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 3 (Self-assessment): extremely hazardous for water
    Do not allow product to reach ground water, water course or sewage system, even in small quantities.
    Danger to drinking water if even extremely small quantities leak into the ground.
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
  - 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

- Not Regulated, De minimus Quantities
Trade name: Intermediate Stock Standard no. 2 (1X1 mL)

| · UN-Number | UN1648 |
| DOT, IMDG, IATA |

| · UN proper shipping name |
| DOT |
| IMDG, IATA |

| · Transport hazard class(es) |
| DOT, IMDG, IATA |

| · Class |
| 3 Flammable liquids |

| · Label |
| 3 |

| · Packing group |
| DOT, IMDG, IATA |

| · Environmental hazards: |
| Not applicable. |

| · Special precautions for user |
| Warning: Flammable liquids |

| · Danger code (Kemler): |
| 33 |

| · EMS Number: |
| F-E,S-E |

| · Stowage Category |
| B |

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

| · Transport/Additional information: |
| DOT |

| · Quantity limitations |
| On passenger aircraft/rail: 5 L |
| On cargo aircraft only: 60 L |

| · IMDG |

| · Limited quantities (LQ): |
| 1L |

| · Excepted quantities (EQ): |
| Code: E2 |
| Maximum net quantity per inner packaging: 30 ml |
| Maximum net quantity per outer packaging: 500 ml |

| · UN "Model Regulation": |
| UN 1648 ACETONITRILE, 3, II |

### 15 Regulatory information

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

| · Section 355 (extremely hazardous substances): |
| None of the ingredients is listed. |

| · Section 313 (Specific toxic chemical listings): |
| 75-05-8 acetonitrile |
| 606-20-2 2,6-dinitrotoluene |
Trade name: Intermediate Stock Standard no. 2 (1X1 mL)

· **TSCA (Toxic Substances Control Act):**
  - 75-05-8 acetonitrile
  - 606-20-2 2,6-dinitrotoluene
  - 479-45-8 N-methyl-N,2,4,6-tetranitroaniline
  - 99-08-1 3-nitrotoluene
  - 99-99-0 4-nitrotoluene
  - 88-72-2 2-nitrotoluene

· **Proposition 65**
  - **Chemicals known to cause cancer:**
    - 606-20-2 2,6-dinitrotoluene
    - 88-72-2 2-nitrotoluene
  - **Chemicals known to cause reproductive toxicity for females:**
    - None of the ingredients is listed.
  - **Chemicals known to cause reproductive toxicity for males:**
    - 606-20-2 2,6-dinitrotoluene
  - **Chemicals known to cause developmental toxicity:**
    - None of the ingredients is listed.

· **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)**
    - 75-05-8 acetonitrile CBD, D
  - **TLV (Threshold Limit Value established by ACGIH)**
    - 75-05-8 acetonitrile A4
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    - None of the ingredients is listed.

· **National regulations:**
  - **Additional classification according to Decree on Hazardous Materials:**
    Carcinogenic hazardous material group III (dangerous).
  - **Information about limitation of use:**
    Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
  - **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** 03/29/2019 / 2
· **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
Trade name: Intermediate Stock Standard no. 2 (1X1 mL)

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
ELINCS: European List of Notified 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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
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
BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1B: Carcinogenicity – Category 1B
Repr. 2: Reproductive toxicity – Category 2

* Data compared to the previous version altered.