1 Identification

- Product identifier
- Trade name: Molybdenum AA Standard (125 mL)
- Part number: IAA-242
- 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 identification

- Classification of the substance or mixture
  - GHS08 Health hazard
    Carcinogenicity – Category 2 H351 Suspected of causing cancer.
  - GHS07
    Skin Irritation - Category 2 H315 Causes skin irritation.
    Eye Irritation - Category 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
  - GHS07
  - GHS08

- Signal word: Warning
- Hazard statements
  Causes skin irritation.
  Causes serious eye irritation.
  Suspected of causing cancer.

- Precautionary statements
  If medical advice is needed, have product container or label at hand.
  Keep out of reach of children.
  Read label before use.
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Wash thoroughly after handling.
  Wear protective gloves/protective clothing/eye protection/face protection.

(Contd. on page 2)
If on skin: Wash with plenty of water.
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.
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 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 Health = 2
  - FIRE Fire = 0
  - REACTIVITY Reactivity = 0

3 Composition/Information on ingredients

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

- Dangerous components:
  - 1336-21-6 ammonia 2% w/w
  - 1313-27-5 molybdenum trioxide 0.15% w/w

4 First aid measures

- Description of first aid measures
- General information: Immediately remove any clothing soiled by the product.
  - 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 Firefighting 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:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
- 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.

7 Handling and storage

- Handling:
- Precautions for safe handling: 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.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s): No further relevant information available.

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:
    - 1313-27-5 molybdenum trioxide
      - EL Long-term value: 0.5 mg/m³ as Mo; respirable
- 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.
### Trade name: Molybdenum AA Standard (125 mL)

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

  - **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

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Information</strong></td>
</tr>
<tr>
<td><strong>Appearance:</strong></td>
</tr>
<tr>
<td>Form: Fluid</td>
</tr>
<tr>
<td>Color: Colorless</td>
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<tr>
<td><strong>Odor:</strong> Odorless</td>
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<tr>
<td><strong>Odor threshold:</strong> Not determined.</td>
</tr>
<tr>
<td><strong>pH-value:</strong> Not determined.</td>
</tr>
</tbody>
</table>

- **Change in condition**
  - Melting point/Melting range: Undetermined.
  - Boiling point/Boiling range: 100 °C

- **Flash point:** Not applicable.

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

- **Decomposition temperature:** Not determined.

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

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**
  - Lower: Not determined.
48.1.26

Upper:

- Not determined.

- Vapor pressure at 20 °C: 23 hPa
- Density at 20 °C: 1.00334 g/cm³
- Relative density: Not determined.
- Vapor density: Not determined.
- Evaporation rate: Not determined.

- Solubility in / Miscibility with Water: Not miscible or difficult to mix.

- Partition coefficient (n-octanol/water): Not determined.

- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.

- Solvent content:
  - Water: 97.9 %

- Solids content: 0.2 %
- 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:

<table>
<thead>
<tr>
<th>LD/LC50 values that are relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE (Acute Toxicity Estimate)</td>
</tr>
<tr>
<td>Oral  LD50</td>
</tr>
</tbody>
</table>

  | 1336-21-6 ammonia       |
  | Oral  LD50  | 350 mg/kg (rat)       |

  | 1313-27-5 molybdenum trioxide |
  | Oral  LD50  | 2,689 mg/kg (rat)       |
  | Dermal LD50 | >2,000 mg/kg (rat)       |
  | Inhalative LC50/4 h | >5.05 mg/L (rat)       |

- Primary irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: Irritating effect.
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.
    - **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**
  - UN3266

- **DOT, TDG, IMDG, IATA**
  - **DOT**: Corrosive liquid, basic, inorganic, n.o.s. (Ammonia solution)
  - **TDG**: 3266 CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (AMMONIA SOLUTION)
  - **IMDG, IATA**: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (AMMONIA SOLUTION)
Transport hazard class(es)
- DOT, TDG, IMDG, IATA

DOT, TDG, IMDG, IATA Class
- 8 Corrosive substances

DOT, TDG, IMDG, IATA Label
- 8

DOT, TDG, IMDG, IATA Packing group
- III

Environmental hazards:
- Not applicable.

Special precautions for user
- Warning: Corrosive substances
- Danger code (Kemler): 80
- EMS Number: F-A,S-B
- Segregation groups
- Alkalis

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: 5L
  - On cargo aircraft only: 60L

- TDG
  - Excepted quantities (EQ)
    - Code: E1
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 1000 ml

- IMDG
  - Limited quantities (LQ)
    - 5L
  - Excepted quantities (EQ)
    - Code: E1
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 1000 ml

- UN "Model Regulation":
  - UN 3266 CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (AMMONIA SOLUTION), 8, III

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):
- 1336-21-6 ammonia
- 1313-27-5 molybdenum trioxide

(Contd. on page 8)
Trade name: Molybdenum AA Standard (125 mL)

- **TSCA (Toxic Substances Control Act):**
  All ingredients are listed.

- **Canadian substance listings:**
  - **Canadian Domestic Substances List (DSL)**
    All ingredients are listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**
  None of the ingredients is listed.

- **Canadian Ingredient Disclosure list (limit 1%)**
  1336-21-6 ammonia

- **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 the latest revision of the safety data sheet** 03/30/2019 / 2

- **Abbreviations and acronyms:**
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - 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)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative

- **Data compared to the previous version altered.**