1 Identification

- Product identifier
  - Trade name: Stock Standard (1X1 mL)
  - Part number: PHM-557-1
  - Relevant identified uses of the substance or mixture and uses advised against
    Reagents and Standards for Analytical Chemical Laboratory Use

- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    Agilent Technologies Australia Pty Ltd
    679 Springvale Road
    Mulgrave
    Victoria 3170, Australia

- Further information obtainable from:
  Telephone: 1800 802 402
  e-mail: pdl-msds_author@agilent.com

- Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

- Classification of the substance or mixture

  flame
  Flam. Liq. 2 H225 Highly flammable liquid and vapour.

  skull and crossbones
  Acute Tox. 3 H311 Toxic in contact with skin.

  !
  Skin Irrit. 2 H315 Causes skin irritation.

- Label elements
  - GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).

- Hazard pictograms

  GHS02  GHS06

- Signal word Danger

- Hazard-determining components of labelling:
  tert-butyl methyl ether
  bromoacetic acid
  chloroacetic acid
  dichloroacetic acid

(Contd. on page 2)
Safety Data Sheet
according to WHS Regulations

Printing date 30.03.2019
Version number 3
Revision: 30.03.2019

Trade name: Stock Standard (1X1 mL)

(Hazard statements)
Highly flammable liquid and vapour.
Toxic in contact with skin.
Causes skin irritation.

(Precautionary statements)
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
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.
Wear protective gloves/protective clothing/eye protection/face protection.

(Other hazards)
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition and Information on Ingredients

(Chemical characterisation: Mixtures)
Description: Mixture of substances listed below with nonhazardous additions.

(Dangerous components:

| 1634-04-4 | tert-butyl methyl ether | 98.649% |
| 79-08-3 | bromoacetic acid | 0.135% |

(Additional information): For the wording of the listed hazard phrases refer to section 16.

4 First Aid Measures

(Description of first aid measures)
General information:
Immediately remove any clothing soiled by the product.
In case of irregular breathing or respiratory arrest provide artificial respiration.
5 Fire Fighting Measures

- **Extinguishing media**
  - **Suitable extinguishing agents:** CO2, 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.

- **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** No special precautions are necessary if used correctly.
  - **Information about fire - and explosion protection:**
    - Keep ignition sources away - Do not smoke.
    - Protect against electrostatic charges.

- **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 container tightly sealed.
    - Store in cool, dry conditions in well sealed receptacles.
8 Exposure controls and personal protection

- Additional information about design of technical facilities: No further data; see item 7.
- Control parameters
  - Ingredients with limit values that require monitoring at the workplace:
    |                | NES Short-term value: 275 mg/m³, 75 ppm |
    |                | Long-term value: 92 mg/m³, 25 ppm       |
    | 1634-04-4 tert-butyl methyl ether | WES Short-term value: 275 mg/m³, 75 ppm |
    |                | Long-term value: 92 mg/m³, 25 ppm       |
- Additional information: The lists valid during the making 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 skin.
    Avoid contact with the eyes and skin.
  - Respiratory protection:
    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 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil 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

- **Information on basic physical and chemical properties**

- **General Information**

  - **Appearance:**
    - **Form:** Fluid
    - **Colour:** Colourless
    - **Odour:** Characteristic
    - **Odour threshold:** Not determined.
  
  - **pH-value:** Not determined.

- **Change in condition**

  - **Melting point/freezing point:** Undetermined.
  
  - **Initial boiling point and boiling range:** 55 °C

- **Flash point:** 0 °C

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

- **Ignition temperature:** 374 °C

- **Decomposition temperature:** Not determined.

- **Auto-ignition temperature:** Product is not selfigniting.

- **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

- **Explosion limits:**
  
  - **Lower:** 1.6 Vol %
  - **Upper:** 8.4 Vol %

- **Vapour pressure at 20 °C:** 279 hPa

- **Density at 20 °C:** 0.74 g/cm³

- **Relative density**

  - Not determined.

- **Vapour density**

  - Not determined.

- **Evaporation rate**

  - Not determined.

- **Solubility in / Miscibility with water at 25 °C:** 51 g/l

- **Partition coefficient: n-octanol/water:** Not determined.

- **Viscosity**

  - **Dynamic:** Not determined.
  
  - **Kinematic:** Not determined.

- **Solvent content:**

  - **Organic solvents:** 98.6 %
  
  - **VOC (EC):** 98.65 %

- **Solids content:** 0.9 %

- **Other information**

  - No further relevant information available.

### 10 Stability and Reactivity

- **Reactivity** No further relevant information available.
48.1.26

· 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 relevant for classification:

<table>
<thead>
<tr>
<th>ATE (Acute Toxicity Estimates)</th>
<th>Oral</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3,431 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>985 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h 126 mg/L</td>
<td></td>
</tr>
</tbody>
</table>

1634-04-4 tert-butyl methyl ether

<table>
<thead>
<tr>
<th>Oral</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,000 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
</tr>
<tr>
<td>1,000 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h 23,576 mg/L (rat)</td>
</tr>
</tbody>
</table>

79-08-3 bromoacetic acid

<table>
<thead>
<tr>
<th>Oral</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
</tr>
<tr>
<td>59.9 mg/kg (rabbit)</td>
<td></td>
</tr>
</tbody>
</table>

76-03-9 trichloroacetic acid

<table>
<thead>
<tr>
<th>Oral</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,320 mg/kg (rat)</td>
<td></td>
</tr>
</tbody>
</table>

· Primary irritant effect:
· Skin corrosion/irritation Irritant to skin and mucous membranes.
· Serious eye damage/irritation No irritating effect.
· Respiratory or skin sensitisation No sensitising effects known.
· Additional toxicological information:
  The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
  Toxic
  Irritant

12 Ecological Information

· Toxicity
· Aquatic toxicity: No further relevant information available.
· Persistence and degradability No further relevant information available.
· Behaviour 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 (German Regulation) (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 together with household garbage. Do not allow product to reach sewage system.
  - **Uncleaned packaging**:
    - **Recommendation**: Disposal must be made according to official regulations.

### 14 Transport information

- **Not Regulated, De minimis Quantities**
  
- **UN-Number**
  - ADG, IMDG, IATA
  - UN2398
- **UN proper shipping name**
  - ADG
  - IMDG, IATA
  - 2398 METHYL tert-BUTYL ETHER solution
  - METHYL tert-BUTYL ETHER solution
- **Transport hazard class(es)**
  - ADG, IMDG, IATA
    - **Class**: 3 Flammable liquids.
    - **Label**: 3
  - **Packing group**
    - ADG, IMDG, IATA
    - II
  - **Environmental hazards**: Not applicable.
  - **Special precautions for user**
    - Warning: Flammable liquids.
  - **Danger code (Kemler)**: 33
  - **EMS Number**: F-E,S-D
  - **Stowage Category**: B
  - **Stowage Code**: SW2 Clear of living quarters.
- **Transport in bulk according to Annex II of Marpol and the IBC Code**
  - Not applicable.
Safety Data Sheet
according to WHS Regulations

Trade name: Stock Standard (1X1 mL)

(Contd. of page 7)

· Transport/Additional information:
  · ADG
  · Limited quantities (LQ) 1L
  · Expected quantities (EQ) Code: E2
  · Transport category 2
  · Tunnel restriction code D/E
  · IMDG
  · Limited quantities (LQ) 1L
  · Expected quantities (EQ) Code: E2
  · UN "Model Regulation":
    UN 2398 METHYL TERT-BUTYL ETHER SOLUTION, 3, II

· UN 2398 METHYL TERT-BUTYL ETHER SOLUTION,
  3, II

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture
  · Australian Inventory of Chemical Substances
    1634-04-4 tert-butyl methyl ether
    79-08-3 bromoacetic acid
    79-11-8 chloroacetic acid
    79-43-6 dichloroacetic acid
    76-03-9 trichloroacetic acid
    75-99-0 2,2-dichloropropionic acid
  · Standard for the Uniform Scheduling of Medicines and Poisons
    76-03-9 trichloroacetic acid S4, S6
  · Directive 2012/18/EU
  · Named dangerous substances - ANNEX I None of the ingredients is listed.
  · Seveso category P5c FLAMMABLE LIQUIDS
  · Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t
  · Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t
  · 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.

· Relevant phrases
  H225 Highly flammable liquid and vapour.
  H301 Toxic if swallowed.
  H311 Toxic in contact with skin.
  H314 Causes severe skin burns and eye damage.

(Contd. on page 9)
Trade name: Stock Standard (1X1 mL)

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.

· Department issuing SDS: Document Control / Regulatory
· Contact: regulatory@ultrasci.com
· 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
  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)
  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
  Flam. Liq. 2: Flammable liquids – Category 2
  Acute Tox. 3: Acute toxicity – Category 3
  Skin Corr. 1: Skin corrosion/irritation – Category 1
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Skin Sens. 1: Skin sensitisation – Category 1