* 1 Identification

· Product identifier
· Trade name: Custom Standard (1 x 1 mL)
· Part number: CUS-29406
· 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.

  GHS06 Skull and crossbones
  Acute Tox. 3  H331  Toxic if inhaled.

  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.
  STOT SE 1  H370  Causes damage to organs.

· Label elements
  · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    GHS02  GHS06  GHS08

· Signal word Danger
· Hazard-determining components of labeling:
  methanol
  ethylene oxide

(Contd. on page 2)
Trade name: Custom Standard (1 x 1 mL)

- **Hazard statements**
  - Highly flammable liquid and vapor.
  - Toxic if inhaled.
  - May cause genetic defects.
  - May cause cancer.
  - Suspected of damaging fertility or the unborn child.
  - Causes damage to organs.

- **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.
  - Ground/bond container and receiving equipment.
  - Use explosion-proof electrical/ventilating/lighting/equipment.
  - Use only non-sparking tools.
  - Take precautionary measures against static discharge.
  - Do not breathe dust/fume/gas/mist/vapors/spray.
  - Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Use only outdoors or in a well-ventilated area.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - IF exposed or concerned: Get medical advice/attention.
  - In case of fire: Use for extinction: CO2, powder or water spray.

**Classification system:**

- **NFPA ratings (scale 0 - 4)**
  - Health = 1
  - Fire = 3
  - Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**
  - HEALTH: Health = *1
  - FIRE: Fire = 3
  - REACTIVITY: Reactivity = 0

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

### 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.
Trade name: Custom Standard (1 x 1 mL)

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1 methanol</td>
<td>95.9552%</td>
</tr>
<tr>
<td>123-91-1 1,4-dioxane</td>
<td>0.253%</td>
</tr>
<tr>
<td>591-78-6 hexan-2-one</td>
<td>0.253%</td>
</tr>
<tr>
<td>108-10-1 4-methylpentan-2-one</td>
<td>0.253%</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>0.253%</td>
</tr>
<tr>
<td>75-21-8 ethylene oxide</td>
<td>0.253%</td>
</tr>
</tbody>
</table>

4 First-aid measures

· Description of first aid measures
  · General information:
    Immediately remove any clothing soiled by the product.
    Remove breathing apparatus only after contaminated clothing have been completely removed.
    In case of irregular breathing or respiratory arrest provide artificial respiration.
  · After inhalation:
    Supply fresh air or oxygen; call for doctor.
    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. Then 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:
    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
    During heating or in case of fire poisonous gases are produced.
  · Advice for firefighters
  · Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures
  Mount respiratory protective device.
  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: Custom Standard (1 x 1 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>67-56-1 methanol</td>
<td>530 ppm</td>
</tr>
<tr>
<td>123-91-1 1,4-dioxane</td>
<td>17 ppm</td>
</tr>
<tr>
<td>78-93-3 butanone</td>
<td>200 ppm</td>
</tr>
<tr>
<td>591-78-6 hexan-2-one</td>
<td>10 ppm</td>
</tr>
<tr>
<td>98-86-2 acetophenone</td>
<td>30 ppm</td>
</tr>
<tr>
<td>67-64-1 acetone</td>
<td>200 ppm</td>
</tr>
<tr>
<td>108-94-1 cyclohexanone</td>
<td>60 ppm</td>
</tr>
<tr>
<td>108-87-2 methylcyclohexane</td>
<td>1200* ppm</td>
</tr>
<tr>
<td>108-10-1 4-methylpentan-2-one</td>
<td>75 ppm</td>
</tr>
<tr>
<td>563-80-4 3-methylbutan-2-one</td>
<td>60 ppm</td>
</tr>
<tr>
<td>107-87-9 pentan-2-one</td>
<td>150 ppm</td>
</tr>
<tr>
<td>109-66-0 pentane</td>
<td>3000* ppm</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>100 ppm</td>
</tr>
<tr>
<td>60-29-7 diethyl ether</td>
<td>500 ppm</td>
</tr>
<tr>
<td>540-84-1 2,2,4-trimethylpentane</td>
<td>230 ppm</td>
</tr>
<tr>
<td>75-21-8 ethylene oxide</td>
<td>5 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-2:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1 methanol</td>
<td>2,100 ppm</td>
</tr>
<tr>
<td>123-91-1 1,4-dioxane</td>
<td>320 ppm</td>
</tr>
<tr>
<td>78-93-3 butanone</td>
<td>2700* ppm</td>
</tr>
<tr>
<td>591-78-6 hexan-2-one</td>
<td>830 ppm</td>
</tr>
<tr>
<td>98-86-2 acetophenone</td>
<td>330 ppm</td>
</tr>
<tr>
<td>67-64-1 acetone</td>
<td>3200* ppm</td>
</tr>
<tr>
<td>108-94-1 cyclohexanone</td>
<td>830 ppm</td>
</tr>
<tr>
<td>108-87-2 methylcyclohexane</td>
<td>1700* ppm</td>
</tr>
<tr>
<td>108-10-1 4-methylpentan-2-one</td>
<td>500 ppm</td>
</tr>
<tr>
<td>563-80-4 3-methylbutan-2-one</td>
<td>660 ppm</td>
</tr>
<tr>
<td>107-87-9 pentan-2-one</td>
<td>830 ppm</td>
</tr>
<tr>
<td>109-66-0 pentane</td>
<td>33000*** ppm</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>500 ppm</td>
</tr>
<tr>
<td>60-29-7 diethyl ether</td>
<td>3200* ppm</td>
</tr>
<tr>
<td>540-84-1 2,2,4-trimethylpentane</td>
<td>830 ppm</td>
</tr>
<tr>
<td>75-21-8 ethylene oxide</td>
<td>45 ppm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAC-3:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1 methanol</td>
<td>7200* ppm</td>
</tr>
<tr>
<td>123-91-1 1,4-dioxane</td>
<td>760 ppm</td>
</tr>
</tbody>
</table>

(Contd. on page 5)
### 7 Handling and storage

**Handling:**

*C Precautions for safe handling*
- Ensure good ventilation/exhaustion at the workplace.
- Open and handle receptacle with care.
- Prevent formation of aerosols.

*C Information about protection against explosions and fires:*
- Keep ignition sources away - Do not smoke.
- Protect against electrostatic charges.
- Keep respiratory protective device available.

*C Conditions for safe storage, including any incompatibilities*

*C 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.

### 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:*

<table>
<thead>
<tr>
<th>Compound</th>
<th>Limit Value 1</th>
<th>Limit Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1 methanol</td>
<td>PEL: Long-term value: 260 mg/m³, 200 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>REL: Short-term value: 325 mg/m³, 250 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Long-term value: 260 mg/m³, 200 ppm</td>
<td></td>
</tr>
</tbody>
</table>

*(Contd. on page 6)*
### Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Trade name: Custom Standard (1 x 1 mL)</th>
</tr>
</thead>
</table>

**123-91-1 1,4-dioxane**

<table>
<thead>
<tr>
<th>PEL</th>
<th>Long-term value: 360 mg/m³, 100 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REL</th>
<th>Ceiling limit value: 3.6* mg/m³, 1* ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>*30-min; See Pocket Guide App. A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TLV</th>
<th>Long-term value: 72 mg/m³, 20 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td></td>
</tr>
</tbody>
</table>

**591-78-6 hexan-2-one**

<table>
<thead>
<tr>
<th>PEL</th>
<th>Long-term value: 410 mg/m³, 100 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL</td>
<td>Long-term value: 4 mg/m³, 1 ppm</td>
</tr>
<tr>
<td>TLV</td>
<td>Short-term value: 20 mg/m³, 5 ppm</td>
</tr>
<tr>
<td>Long-term value: 205 mg/m³, 50 ppm</td>
<td></td>
</tr>
</tbody>
</table>

| BEI | |

**108-10-1 4-methylpentan-2-one**

<table>
<thead>
<tr>
<th>PEL</th>
<th>Long-term value: 410 mg/m³, 100 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL</td>
<td>Short-term value: 300 mg/m³, 75 ppm</td>
</tr>
<tr>
<td>Long-term value: 205 mg/m³, 50 ppm</td>
<td></td>
</tr>
<tr>
<td>TLV</td>
<td>Short-term value: 307 mg/m³, 75 ppm</td>
</tr>
<tr>
<td>Long-term value: 82 mg/m³, 20 ppm</td>
<td></td>
</tr>
</tbody>
</table>

| BEI | |

**109-99-9 tetrahydrofuran**

<table>
<thead>
<tr>
<th>PEL</th>
<th>Long-term value: 590 mg/m³, 200 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>REL</td>
<td>Short-term value: 735 mg/m³, 250 ppm</td>
</tr>
<tr>
<td>Long-term value: 590 mg/m³, 200 ppm</td>
<td></td>
</tr>
<tr>
<td>TLV</td>
<td>Short-term value: 295 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>Long-term value: 147 mg/m³, 50 ppm</td>
<td></td>
</tr>
</tbody>
</table>

| Skin| |

**75-21-8 ethylene oxide**

<table>
<thead>
<tr>
<th>PEL</th>
<th>Short-term value: 5 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term value: 1 ppm</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REL</th>
<th>Long-term value: 0.18 mg/m³, &lt;0.1 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling limit value: 9* mg/m³, 5* ppm</td>
<td></td>
</tr>
<tr>
<td>See Pocket Guide App. A; *10-min/day</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TLV</th>
<th>Long-term value: 1.8 mg/m³, 1 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIC-BEI</td>
<td></td>
</tr>
</tbody>
</table>

**67-56-1 methanol**

<table>
<thead>
<tr>
<th>BEI</th>
<th>15 mg/L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium: urine</td>
<td></td>
</tr>
<tr>
<td>Time: end of shift</td>
<td></td>
</tr>
<tr>
<td>Parameter: Methanol (background, nonspecific)</td>
<td></td>
</tr>
</tbody>
</table>
### Trade name: Custom Standard (1 x 1 mL)

<table>
<thead>
<tr>
<th>Compound</th>
<th>BEI</th>
<th>Medium</th>
<th>Time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>591-78-6 hexan-2-one</td>
<td>0.4 mg/L</td>
<td>urine</td>
<td>end of shift at end of workweek</td>
<td>2.5-Hexanedione without hydrolysis</td>
</tr>
<tr>
<td>108-10-1 4-methylpentan-2-one</td>
<td>1 mg/L</td>
<td>urine</td>
<td>end of shift</td>
<td>MIBK</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>2 mg/L</td>
<td>urine</td>
<td>end of shift</td>
<td>Tetrahydrofuran</td>
</tr>
</tbody>
</table>

- **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.
- **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

- **General Information**
  - **Appearance:** Fluid
    - **Form:** Fluid
    - **Color:** Colorless
  - **Odor:** Alcohol-like
  - **Odor threshold:** Not determined.
  - **pH-value:** Not determined.
  - **Change in condition**
    - **Melting point/Melting range:** -98 °C (-144.4 °F)
    - **Boiling point/Boiling range:** 64.7 °C (148.5 °F)
  - **Flash point:** 9 °C (48.2 °F)
  - **Flammability (solid, gaseous):** Not applicable.
  - **Ignition temperature:** 455 °C (851 °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:** 5.5 Vol %
    - **Upper:** 44 Vol %
  - **Vapor pressure at 20 °C (68 °F):** 100 hPa (75 mm Hg)
  - **Density at 20 °C (68 °F):** 0.80133 g/cm³ (6.6871 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.
  - **Partition coefficient (n-octanol/water):** Not determined.
  - **Viscosity:**
    - **Dynamic:** Not determined.
    - **Kinematic:** Not determined.
  - **Solvent content:**
    - **Organic solvents:** 99.5 %
    - **VOC content:** 99.24 %
      - 795.3 g/l / 6.64 lb/gal
  - **Solids content:** 0.5 %
  - **Other information** No further relevant information available.
10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **Chemical stability**: No decomposition if used according to specifications.
- **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>Substance</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalative LC50/4h</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1 methanol</td>
<td>5,628 mg/kg (rat)</td>
<td>15,800 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>123-91-1 1,4-dioxane</td>
<td>5,700 mg/kg (mouse)</td>
<td>7,858 mg/kg (rabbit)</td>
<td>46 mg/L (rat)</td>
</tr>
<tr>
<td>591-78-6 hexan-2-one</td>
<td>2,590 mg/kg (rat)</td>
<td>4,800 mg/kg (rabbit)</td>
<td>8,000 mg/L (rat)</td>
</tr>
<tr>
<td>108-10-1 4-methylpentan-2-one</td>
<td>2,080 mg/kg (rat)</td>
<td>16,000 mg/kg (rabbit)</td>
<td>&gt;16,000 mg/kg (rabbit)</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>2,500 mg/kg (rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>540-84-1 2,2,4-trimethylpentane</td>
<td>&gt;5,000 mg/kg (rat)</td>
<td>&gt;2,000 mg/kg (rabbit)</td>
<td>&gt;33.52 mg/L (rat)</td>
</tr>
</tbody>
</table>
Safety Data Sheet
acc. to OSHA HCS

Trade name: Custom Standard (1 x 1 mL)

75-21-8 ethylene oxide

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>72 mg/kg (rat)</td>
<td>800 mg/L (rat)</td>
</tr>
<tr>
<td>Inhalative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **on the skin:** No irritant effect.
  - **on the eye:** No irritating effect.
  - **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
  - **Toxic**
  - The product can cause inheritable damage.
- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - 123-91-1 1,4-dioxane 2B
    - 108-94-1 cyclohexanone 3
    - 108-10-1 4-methylpentan-2-one 2B
    - 75-21-8 ethylene oxide 1
  - **NTP (National Toxicology Program)**
    - 123-91-1 1,4-dioxane R
    - 75-21-8 ethylene oxide K
  - **OSHA-Ca (Occupational Safety & Health Administration)**
    - 75-21-8 ethylene oxide

**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.
14 Transport information

- **Not Regulated, De minimus Quantities**
- **UN-Number**
  - DOT, IMDG, IATA  UN1230
- **UN proper shipping name**
  - DOT Methanol solution
  - IMDG, IATA METHANOL solution
- **Transport hazard class(es)**
  - **DOT**
    - **Class** 3 Flammable liquids
    - **Label** 3, 6.1
  - **IMDG**
    - **Class** 3 Flammable liquids
    - **Label** 3/6.1
  - **IATA**
    - **Class** 3 Flammable liquids
    - **Label** 3 (6.1)
- **Packing group**
  - **DOT, IMDG, IATA** II
- **Environmental hazards:** Not applicable.
- **Special precautions for user**
  - **Warning:** Flammable liquids
  - **Danger code (Kemler):** 336
  - **EMS Number:** F-E,S-D
  - **Stowage Category** B
  - **Stowage Code** SW2 Clear of living quarters.
- **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: 1 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 1230 METHANOL SOLUTION, 3 (6.1), II

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### 15 Regulatory information

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

  - **Sara**
    - Section 355 (extremely hazardous substances):
      - 75-21-8 ethylene oxide

  - Section 313 (Specific toxic chemical listings):
    - 67-56-1 methanol
    - 123-91-1 1,4-dioxane
    - 78-93-3 butanone
    - 98-86-2 acetophenone
    - 108-10-1 4-methylpentan-2-one
    - 75-21-8 ethylene oxide

  - **TSCA (Toxic Substances Control Act):**
    - 67-56-1 methanol
      - ACTIVE
    - 123-91-1 1,4-dioxane
      - ACTIVE
    - 78-93-3 butanone
      - ACTIVE
    - 591-78-6 hexan-2-one
      - ACTIVE
    - 98-86-2 acetophenone
      - ACTIVE
    - 67-64-1 acetone
      - ACTIVE
    - 108-94-1 cyclohexanone
      - ACTIVE
    - 108-87-2 methylcyclohexane
      - ACTIVE
    - 108-10-1 4-methylpentan-2-one
      - ACTIVE
    - 563-80-4 3-methylbutan-2-one
      - ACTIVE
    - 107-87-9 pentan-2-one
      - ACTIVE
    - 100-80-1 3-vinyltoluene
      - ACTIVE
    - 109-66-0 pentane
      - ACTIVE
    - 109-99-9 tetrahydrofuran
      - ACTIVE
    - 60-29-7 diethyl ether
      - ACTIVE
    - 540-84-1 2,2,4-trimethylpentane
      - ACTIVE
### Hazardous Air Pollutants

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-21-8</td>
<td>Ethylene oxide</td>
</tr>
<tr>
<td>67-56-1</td>
<td>Methanol</td>
</tr>
<tr>
<td>123-91-1</td>
<td>1,4-Dioxane</td>
</tr>
<tr>
<td>98-86-2</td>
<td>Acetophenone</td>
</tr>
<tr>
<td>108-10-1</td>
<td>4-Methylpentan-2-one</td>
</tr>
<tr>
<td>540-84-1</td>
<td>2,2,4-Trimethylpentane</td>
</tr>
<tr>
<td>75-21-8</td>
<td>Ethylene oxide</td>
</tr>
</tbody>
</table>

### Proposition 65

- **Chemicals known to cause cancer:**
  - 123-91-1 1,4-Dioxane
  - 108-10-1 4-Methylpentan-2-one
  - 75-21-8 Ethylene oxide

- **Chemicals known to cause reproductive toxicity for females:**
  - 75-21-8 Ethylene oxide

- **Chemicals known to cause reproductive toxicity for males:**
  - 591-78-6 Hexan-2-one
  - 75-21-8 Ethylene oxide

- **Chemicals known to cause developmental toxicity:**
  - 67-56-1 Methanol
  - 591-78-6 Hexan-2-one
  - 108-10-1 4-Methylpentan-2-one
  - 75-21-8 Ethylene oxide

### Carcinogenic categories

- **EPA (Environmental Protection Agency)**
  - 123-91-1 1,4-Dioxane  L
  - 78-93-3 Butanone  I
  - 591-78-6 Hexan-2-one  II
  - 98-86-2 Acetophenone  D
  - 67-64-1 Acetone  I
  - 108-10-1 4-Methylpentan-2-one  I
  - 109-99-9 Tetrahydrofuran  SC
  - 540-84-1 2,2,4-Trimethylpentane  II
  - 75-21-8 Ethylene oxide  CaH

- **TLV (Threshold Limit Value established by ACGIH)**
  - 123-91-1 1,4-Dioxane  A3
  - 67-64-1 Acetone  A4
  - 108-94-1 Cyclohexanone  A3
  - 109-99-9 Tetrahydrofuran  A3
  - 75-21-8 Ethylene oxide  A2
Trade name: Custom Standard (1 x 1 mL)

- NIOSH-Ca (National Institute for Occupational Safety and Health)
  
  | 123-91-1 | 1,4-dioxane |
  | 75-21-8  | ethylene oxide |

- National regulations:
  - 消防法 Fire Service Law - Full List, Group and Hazard Class
    None of the ingredients is listed.

- 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.

- Date of preparation / last revision 10/29/2019 / -
- 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
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - 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
  - Flammable liquid, category 2
  - Acute Tox. 3: Acute toxicity – Category 3
  - Mutagenicity: Germ cell mutagenicity – Category 1B
  - Carcinogenicity – Category 1B
  - Reproductive toxicity – Category 2
  - STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

* Data compared to the previous version altered.