1 Identification

- **Product identifier**
  - **Trade name:** Custom Standard
  - **Part number:** CUS-3857

- **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. 1A H350 May cause cancer.
    Repr. 1A H360 May damage 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 benzene 2-methoxyethanol trichloromethane

(Contd. on page 2)
**Trade name:** Custom Standard

**Hazard statements**
Highly flammable liquid and vapor.
Toxic if inhaled.
May cause genetic defects.
May cause cancer.
May damage 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.
Specific treatment (see on this label).
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
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 = 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.

**Composition/information on ingredients**

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

**Dangerous components:**

- 67-56-1 methanol 94.438%
Trade name: Custom Standard

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical Name</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2</td>
<td>benzene</td>
<td>0.253%</td>
</tr>
<tr>
<td>67-66-3</td>
<td>trichloromethane</td>
<td>0.253%</td>
</tr>
<tr>
<td>107-06-2</td>
<td>1,2-dichloroethane</td>
<td>0.253%</td>
</tr>
<tr>
<td>110-54-3</td>
<td>n-hexane</td>
<td>0.253%</td>
</tr>
<tr>
<td>109-86-4</td>
<td>2-methoxyethanol</td>
<td>0.253%</td>
</tr>
<tr>
<td>108-10-1</td>
<td>4-methylpentan-2-one</td>
<td>0.253%</td>
</tr>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
<td>0.253%</td>
</tr>
<tr>
<td>109-99-9</td>
<td>tetrahydrofuran</td>
<td>0.253%</td>
</tr>
<tr>
<td>108-88-3</td>
<td>toluene</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**
  - No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:**
  - Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
  - Prevent seepage into sewage system, workpits and cellars.
- **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.

### Protective Action Criteria for Chemicals

- **PAC-1:**

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1</td>
<td>methanol</td>
<td>530 ppm</td>
</tr>
<tr>
<td>67-64-1</td>
<td>acetone</td>
<td>200 ppm</td>
</tr>
<tr>
<td>628-63-7</td>
<td>pentyl acetate</td>
<td>100 ppm</td>
</tr>
<tr>
<td>71-43-2</td>
<td>benzene</td>
<td>52 ppm</td>
</tr>
<tr>
<td>123-86-4</td>
<td>n-butyl acetate</td>
<td>5 ppm</td>
</tr>
<tr>
<td>108-90-7</td>
<td>chlorobenzene</td>
<td>10 ppm</td>
</tr>
<tr>
<td>67-66-3</td>
<td>trichloromethane</td>
<td>2 ppm</td>
</tr>
<tr>
<td>107-06-2</td>
<td>1,2-dichloroethane</td>
<td>50 ppm</td>
</tr>
<tr>
<td>95-50-1</td>
<td>1,2-dichlorobenzene</td>
<td>50 ppm</td>
</tr>
<tr>
<td>141-78-6</td>
<td>ethyl acetate</td>
<td>1,200 ppm</td>
</tr>
<tr>
<td>110-54-3</td>
<td>n-hexane</td>
<td>260 ppm</td>
</tr>
<tr>
<td>142-82-5</td>
<td>heptane</td>
<td>500 ppm</td>
</tr>
<tr>
<td>78-84-2</td>
<td>isobutyraldehyde</td>
<td>75 ppm</td>
</tr>
<tr>
<td>108-21-4</td>
<td>isopropyl acetate</td>
<td>200 ppm</td>
</tr>
<tr>
<td>108-20-3</td>
<td>diisopropyl ether</td>
<td>310 ppm</td>
</tr>
<tr>
<td>109-86-4</td>
<td>2-methoxyethanol</td>
<td>0.3 ppm</td>
</tr>
<tr>
<td>107-31-3</td>
<td>methyl formate</td>
<td>100 ppm</td>
</tr>
<tr>
<td>108-10-1</td>
<td>4-methylpentan-2-one</td>
<td>75 ppm</td>
</tr>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
<td>200 ppm</td>
</tr>
<tr>
<td>109-99-9</td>
<td>tetrahydrofuran</td>
<td>100 ppm</td>
</tr>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>67 ppm</td>
</tr>
<tr>
<td>108-38-3</td>
<td>m-xylene</td>
<td>130 ppm</td>
</tr>
</tbody>
</table>

- **PAC-2:**

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical</th>
<th>PAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1</td>
<td>methanol</td>
<td>2,100 ppm</td>
</tr>
<tr>
<td>67-64-1</td>
<td>acetone</td>
<td>3200* ppm</td>
</tr>
<tr>
<td>628-63-7</td>
<td>pentyl acetate</td>
<td>670 ppm</td>
</tr>
<tr>
<td>71-43-2</td>
<td>benzene</td>
<td>800 ppm</td>
</tr>
<tr>
<td>123-86-4</td>
<td>n-butyl acetate</td>
<td>200 ppm</td>
</tr>
<tr>
<td>108-90-7</td>
<td>chlorobenzene</td>
<td>150 ppm</td>
</tr>
<tr>
<td>67-66-3</td>
<td>trichloromethane</td>
<td>64 ppm</td>
</tr>
<tr>
<td>107-06-2</td>
<td>1,2-dichloroethane</td>
<td>200 ppm</td>
</tr>
<tr>
<td>95-50-1</td>
<td>1,2-dichlorobenzene</td>
<td>170 ppm</td>
</tr>
<tr>
<td>141-78-6</td>
<td>ethyl acetate</td>
<td>1,700 ppm</td>
</tr>
<tr>
<td>110-54-3</td>
<td>n-hexane</td>
<td>2900* ppm</td>
</tr>
<tr>
<td>142-82-5</td>
<td>heptane</td>
<td>830 ppm</td>
</tr>
<tr>
<td>78-84-2</td>
<td>isobutyraldehyde</td>
<td>78 ppm</td>
</tr>
<tr>
<td>108-21-4</td>
<td>isopropyl acetate</td>
<td>2700* ppm</td>
</tr>
<tr>
<td>108-20-3</td>
<td>diisopropyl ether</td>
<td>1700* ppm</td>
</tr>
<tr>
<td>109-86-4</td>
<td>2-methoxyethanol</td>
<td>14 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.
### 47.0 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**

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>67-56-1 methanol</strong></td>
<td>Long-term value: 260 mg/m³, 200 ppm</td>
<td>Short-term value: 325 mg/m³, 250 ppm</td>
<td>Short-term value: 328 mg/m³, 250 ppm</td>
</tr>
<tr>
<td></td>
<td>Long-term value: 260 mg/m³, 200 ppm</td>
<td>Long-term value: 262 mg/m³, 200 ppm</td>
<td>Long-term value: 262 mg/m³, 200 ppm</td>
</tr>
<tr>
<td></td>
<td>Skin</td>
<td></td>
<td>Skin; BEI</td>
</tr>
<tr>
<td><strong>71-43-2 benzene</strong></td>
<td>Short-term value: 15* mg/m³, 5* ppm</td>
<td>Long-term value: 3* mg/m³, 1* ppm</td>
<td>Short-term value: 8 mg/m³, 2.5 ppm</td>
</tr>
<tr>
<td></td>
<td>*table Z-2 for exclusions in 29CFR1910.1028(d)</td>
<td>Long-term value: 0.1 ppm</td>
<td>Long-term value: 1.6 mg/m³, 0.5 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin; BEI</td>
</tr>
<tr>
<td><strong>67-66-3 trichloromethane</strong></td>
<td>Ceiling limit value: 240 mg/m³, 50 ppm</td>
<td>Short-term value: 9.78* mg/m³, 2* ppm</td>
<td>Short-term value: 49 mg/m³, 10 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*60-min; See Pocket Guide App. A</td>
<td>Long-term value: 4 mg/m³, 1 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See Pocket Guide Apps. A and C</td>
</tr>
<tr>
<td><strong>107-06-2 1,2-dichloroethane</strong></td>
<td>Long-term value: 50 ppm</td>
<td>Short-term value: 8 mg/m³, 2 ppm</td>
<td>Long-term value: 40 mg/m³, 10 ppm</td>
</tr>
<tr>
<td></td>
<td>Ceiling limit value: 100; 200* ppm</td>
<td>Long-term value: 4 mg/m³, 1 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*5-min peak in any 3 hrs</td>
<td>See Pocket Guide Apps. A and C</td>
<td></td>
</tr>
<tr>
<td><strong>110-54-3 n-hexane</strong></td>
<td>Long-term value: 1800 mg/m³, 500 ppm</td>
<td>Long-term value: 180 mg/m³, 50 ppm</td>
<td>Long-term value: 176 mg/m³, 50 ppm</td>
</tr>
<tr>
<td></td>
<td>Long-term value: 180 mg/m³, 50 ppm</td>
<td>Skin; BEI</td>
<td></td>
</tr>
</tbody>
</table>

*(Contd. on page 7)*
Trade name: Custom Standard

<table>
<thead>
<tr>
<th>Chemical</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
<th>WEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-86-4 2-methoxyethanol</td>
<td>Long-term value: 80 mg/m³, 25 ppm Skin</td>
<td>Long-term value: 0.3 mg/m³, 0.1 ppm Skin</td>
<td>Long-term value: 0.3 mg/m³, 0.1 ppm Skin; BEI</td>
<td>Skin; B</td>
</tr>
<tr>
<td>108-10-1 4-methylpentan-2-one</td>
<td>Long-term value: 410 mg/m³, 100 ppm</td>
<td>Long-term value: 205 mg/m³, 50 ppm</td>
<td>Short-term value: 307 mg/m³, 75 ppm</td>
<td>Short-term value: 82 mg/m³, 20 ppm BEI</td>
</tr>
<tr>
<td>75-09-2 dichloromethane</td>
<td>Short-term value: 125 ppm</td>
<td>Long-term value: 25 ppm</td>
<td>See 29 CFR 1910.1052</td>
<td>Long-term value: 307 mg/m³, 75 ppm</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>Long-term value: 590 mg/m³, 200 ppm</td>
<td>Long-term value: 590 mg/m³, 200 ppm</td>
<td>Short-term value: 295 mg/m³, 100 ppm</td>
<td>Short-term value: 147 mg/m³, 50 ppm Skin</td>
</tr>
<tr>
<td>108-88-3 toluene</td>
<td>Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift</td>
<td>Short-term value: 560 mg/m³, 150 ppm</td>
<td>Short-term value: 375 mg/m³, 100 ppm</td>
<td>Long-term value: 75 mg/m³, 20 ppm BEI</td>
</tr>
</tbody>
</table>

- Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>BEI</th>
<th>Medium</th>
<th>Time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1 methanol</td>
<td>15 mg/L</td>
<td>urine</td>
<td>end of shift</td>
<td>Methanol (background, nonspecific)</td>
</tr>
</tbody>
</table>
### 71-43-2 benzene

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEI</th>
<th>Medium: urine</th>
<th>Time: end of shift</th>
<th>Parameter: S-Phenylmercapturic acid (background)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI</td>
<td>25 µg/g creatinine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 µg/g creatinine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 110-54-3 n-hexane

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEI</th>
<th>Medium: urine</th>
<th>Time: end of shift at end of workweek</th>
<th>Parameter: t,t-Muconic acid (background)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI</td>
<td>0.4 mg/L</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 109-86-4 2-methoxyethanol

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEI</th>
<th>Medium: urine</th>
<th>Time: end of shift at end of workweek</th>
<th>Parameter: 2.5-Hexanedione without hydrolysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI</td>
<td>1 mg/g creatinine</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEI</th>
<th>Medium: urine</th>
<th>Time: end of shift</th>
<th>Parameter: MIBK</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI</td>
<td>1 mg/L</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 75-09-2 dichloromethane

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEI</th>
<th>Medium: urine</th>
<th>Time: end of shift</th>
<th>Parameter: Dichloromethane (semi-quantitative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI</td>
<td>0.3 mg/L</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 109-99-9 tetrahydrofuran

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEI</th>
<th>Medium: urine</th>
<th>Time: end of shift</th>
<th>Parameter: Tetrahydrofuran</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI</td>
<td>2 mg/L</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 108-88-3 toluene

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEI</th>
<th>Medium: blood</th>
<th>Time: prior to last shift of workweek</th>
<th>Parameter: Toluene</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI</td>
<td>0.02 mg/L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.03 mg/L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### o-Cresol with hydrolysis (background)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEI</th>
<th>Medium: urine</th>
<th>Time: end of shift</th>
<th>Parameter: o-Cresol with hydrolysis (background)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI</td>
<td>0.3 mg/g creatinine</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Trade name: Custom Standard

- **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**

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

- **General Information**

- **Appearance:**
  - Form: Fluid
  - Color: According to product specification

- **Odor:** Characteristic

- **Odor threshold:** Not determined.

- **pH-value:** Not determined.

- **Change in condition**
  - Melting point/Melting range: Undetermined.
  - 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)
### 47. Decomposition temperature
- Not determined.

### 48. Auto igniting
- Product is not self-igniting.

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

#### 50. Explosion limits
- Lower: 5.5 Vol %
- Upper: 44 Vol %

#### 51. Vapor pressure at 20 °C (68 °F):
- 100 hPa (75 mm Hg)

#### 52. Density at 20 °C (68 °F):
- 0.80828 g/cm³ (6.7451 lbs/gal)

#### 53. Relative density
- Not determined.

#### 54. Vapor density
- Not determined.

#### 55. Evaporation rate
- Not determined.

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

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

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

#### 59. Solvent content
- Organic solvents: 98.7 %
- VOC content: 97.98 %
- 791.9 g/l / 6.61 lb/gl

#### 60. Solids content
- 0.0 %

#### 61. Other information
- No further relevant information available.

### 10 Stability and reactivity

#### 62. Reactivity
- No further relevant information available.

#### 63. Chemical stability

#### 64. Thermal decomposition / conditions to be avoided
- No decomposition if used according to specifications.

#### 65. Possibility of hazardous reactions
- No dangerous reactions known.

#### 66. Conditions to avoid
- No further relevant information available.

#### 67. Incompatible materials
- No further relevant information available.

#### 68. Hazardous decomposition products
- No dangerous decomposition products known.

### 11 Toxicological information

#### 69. Information on toxicological effects

#### 70. Acute toxicity

#### 71. LD/LC50 values that are relevant for classification

<table>
<thead>
<tr>
<th>ATE (Acute Toxicity Estimate)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal LD₅₀</td>
<td>11,578 mg/kg</td>
</tr>
<tr>
<td>Inhalative LC₅₀/₄ h</td>
<td>3.17 mg/L</td>
</tr>
</tbody>
</table>
### Trade name: Custom Standard

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Compound</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1</td>
<td>methanol</td>
<td>5,628 mg/kg (rat)</td>
<td>15,800 mg/kg (rabbit)</td>
</tr>
<tr>
<td>71-43-2</td>
<td>benzene</td>
<td>3,340 mg/kg (rat)</td>
<td>48 mg/kg (mouse)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>67-66-3</td>
<td>trichloromethane</td>
<td>908 mg/kg (rat)</td>
<td>75 mg/kg (rat)</td>
</tr>
<tr>
<td>107-06-2</td>
<td>1,2-dichloroethane</td>
<td>670 mg/kg (rat)</td>
<td>2,800 mg/kg (rat)</td>
</tr>
<tr>
<td>95-50-1</td>
<td>1,2-dichlorobenzene</td>
<td>500 mg/kg (rat)</td>
<td>&gt;10,000 mg/kg (rabbit)</td>
</tr>
<tr>
<td>110-54-3</td>
<td>n-hexane</td>
<td>5,000 mg/kg (rat)</td>
<td>3,000 mg/kg (rabbit)</td>
</tr>
<tr>
<td>142-82-5</td>
<td>heptane</td>
<td>103,000 mg/L (rat)</td>
<td></td>
</tr>
<tr>
<td>109-86-4</td>
<td>2-methoxyethanol</td>
<td>2,460 mg/kg (rat)</td>
<td>2,000 mg/kg (rabbit)</td>
</tr>
<tr>
<td>108-10-1</td>
<td>4-methylpentan-2-one</td>
<td>2,080 mg/kg (rat)</td>
<td>16,000 mg/kg (rabbit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt;8.2 mg/L (rat)</td>
</tr>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
<td>1,600 mg/kg (rat)</td>
<td>&gt;2,000 mg/kg (rabbit)</td>
</tr>
<tr>
<td>109-99-9</td>
<td>tetrahydrofuran</td>
<td>2,500 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td>5,580 mg/kg (rat)</td>
<td>12,124 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>
Inhalative LC50/4 h: 5,320 mg/L (mouse), 28.1 mg/L (rat)

- 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)
    - 71-43-2 benzene: 1
    - 67-66-3 trichloromethane: 2B
    - 107-06-2 1,2-dichloroethane: 2B
    - 95-50-1 1,2-dichlorobenzene: 3
    - 108-10-1 4-methylpentan-2-one: 2B
    - 75-09-2 dichloromethane: 2A
    - 95-47-6 o-xylene: 3
    - 108-88-3 toluene: 3
    - 106-42-3 p-xylene: 3
    - 108-38-3 m-xylene: 3
  - NTP (National Toxicology Program)
    - 71-43-2 benzene: K
    - 67-66-3 trichloromethane: R
    - 107-06-2 1,2-dichloroethane: R
    - 75-09-2 dichloromethane: R
  - OSHA-Ca (Occupational Safety & Health Administration)
    - 71-43-2 benzene
    - 75-09-2 dichloromethane

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: Not known to be hazardous to water.
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
Trade name: Custom Standard

- 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, 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
  - Danger code (Kemler): Warning: Flammable liquids
  - EMS Number: 336
  - F-E,S-D

(Contd. on page 14)
### 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

## 15 Regulatory information

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

#### Sara

- **Section 355 (extremely hazardous substances):**
  - 67-66-3 trichloromethane

- **Section 313 (Specific toxic chemical listings):**
  - 67-56-1 methanol
  - 71-43-2 benzene
  - 108-90-7 chlorobenzene
  - 67-66-3 trichloromethane
  - 107-06-2 1,2-dichloroethane
  - 95-50-1 1,2-dichlorobenzene
  - 110-54-3 n-hexane
  - 78-84-2 isobutyraldehyde
  - 109-86-4 2-methoxyethanol
  - 108-10-1 4-methylpentan-2-one
  - 75-09-2 dichloromethane
  - 95-47-6 o-xylene
  - 108-88-3 toluene
  - 106-42-3 p-xylene
  - 108-38-3 m-xylene

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

- **Proposition 65**

### Chemicals known to cause cancer:

- 71-43-2 benzene
- 67-66-3 trichloromethane
### Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

### Chemicals known to cause reproductive toxicity for males:

<table>
<thead>
<tr>
<th>Chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2 benzene</td>
</tr>
<tr>
<td>110-54-3 n-hexane</td>
</tr>
<tr>
<td>109-86-4 2-methoxyethanol</td>
</tr>
</tbody>
</table>

### Chemicals known to cause developmental toxicity:

<table>
<thead>
<tr>
<th>Chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1 methanol</td>
</tr>
<tr>
<td>71-43-2 benzene</td>
</tr>
<tr>
<td>67-66-3 trichloromethane</td>
</tr>
<tr>
<td>109-86-4 2-methoxyethanol</td>
</tr>
<tr>
<td>108-10-1 4-methylpentan-2-one</td>
</tr>
<tr>
<td>108-88-3 toluene</td>
</tr>
</tbody>
</table>

### Carcinogenic categories

#### EPA (Environmental Protection Agency)

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1 acetone</td>
<td>I</td>
</tr>
<tr>
<td>71-43-2 benzene</td>
<td>A, K/L</td>
</tr>
<tr>
<td>108-90-7 chlorobenzene</td>
<td>D</td>
</tr>
<tr>
<td>67-66-3 trichloromethane</td>
<td>B2, L, NL</td>
</tr>
<tr>
<td>107-06-2 1,2-dichloroethane</td>
<td>B2</td>
</tr>
<tr>
<td>95-50-1 1,2-dichlorobenzene</td>
<td>D</td>
</tr>
<tr>
<td>110-54-3 n-hexane</td>
<td>II</td>
</tr>
<tr>
<td>142-82-5 heptane</td>
<td>D</td>
</tr>
<tr>
<td>108-10-1 4-methylpentan-2-one</td>
<td>I</td>
</tr>
<tr>
<td>75-09-2 dichloromethane</td>
<td>L</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>SC</td>
</tr>
<tr>
<td>95-47-6 o-xylene</td>
<td>I</td>
</tr>
<tr>
<td>108-88-3 toluene</td>
<td>II</td>
</tr>
<tr>
<td>106-42-3 p-xylene</td>
<td>I</td>
</tr>
<tr>
<td>108-38-3 m-xylene</td>
<td>I</td>
</tr>
</tbody>
</table>

#### TLV (Threshold Limit Value established by ACGIH)

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1 acetone</td>
<td>A4</td>
</tr>
<tr>
<td>71-43-2 benzene</td>
<td>A1</td>
</tr>
<tr>
<td>108-90-7 chlorobenzene</td>
<td>A3</td>
</tr>
<tr>
<td>67-66-3 trichloromethane</td>
<td>A3</td>
</tr>
<tr>
<td>107-06-2 1,2-dichloroethane</td>
<td>A4</td>
</tr>
<tr>
<td>95-50-1 1,2-dichlorobenzene</td>
<td>A4</td>
</tr>
<tr>
<td>75-09-2 dichloromethane</td>
<td>A3</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>A3</td>
</tr>
</tbody>
</table>
Trade name: Custom Standard

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical Name</th>
<th>A4</th>
</tr>
</thead>
<tbody>
<tr>
<td>95-47-6</td>
<td>o-xylene</td>
<td></td>
</tr>
<tr>
<td>108-88-3</td>
<td>toluene</td>
<td></td>
</tr>
<tr>
<td>106-42-3</td>
<td>p-xylene</td>
<td></td>
</tr>
<tr>
<td>108-38-3</td>
<td>m-xylene</td>
<td></td>
</tr>
</tbody>
</table>

- NIOSH-Ca (National Institute for Occupational Safety and Health)
<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2</td>
<td>benzene</td>
</tr>
<tr>
<td>67-66-3</td>
<td>trichloromethane</td>
</tr>
<tr>
<td>107-06-2</td>
<td>1,2-dichloroethane</td>
</tr>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
</tr>
</tbody>
</table>

- 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
  - benzene
  - 2-methoxyethanol
  - trichloromethane

- Hazard statements
  - Highly flammable liquid and vapor.
  - Toxic if inhaled.
  - May cause genetic defects.
  - May cause cancer.
  - May damage 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.
  - Specific treatment (see on this label).
  - In case of fire: Use for extinction: CO2, powder or water spray.
  - Store in a well-ventilated place. Keep container tightly closed.
  - Store in a well-ventilated place. Keep cool.
  - Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- **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.

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**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** 08/02/2018 / 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
  - 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. 3: Acute toxicity – Category 3
  - Mut. 1B: Germ cell mutagenicity – Category 1B
  - Carc. 1A: Carcinogenicity – Category 1A
  - Repr. 1A: Reproductive toxicity – Category 1A
  - STOT SE 1: Specific target organ toxicity (single exposure) – Category 1