

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/29/2019

Version Number 2

Reviewed on 03/29/2019

1 Identification

- **Product identifier**
- **Trade name:** VOC Standard (1X1 mL)
- **Part number:** PMX-300-1
- **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**
Flam. Liq. 4 H227 Combustible liquid.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** Void
- **Signal word** Warning
- **Hazard statements**
Combustible liquid.
- **Precautionary statements**
Keep away from flames and hot surfaces. – No smoking.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**

| | | |
|---|---|---|
| 0 | 2 | 0 |
|---|---|---|

Health = 0

Fire = 2

Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**

| | | |
|------------|----|----------------|
| HEALTH | *0 | Health = *0 |
| FIRE | 2 | Fire = 2 |
| REACTIVITY | 0 | Reactivity = 0 |
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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3 Composition/information on ingredients

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

- **Dangerous components:**

| | | |
|---------|--------------------|---------|
| 67-68-5 | dimethyl sulfoxide | 98.638% |
|---------|--------------------|---------|

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **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.
- **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.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

| | | |
|---------|--------------------|---------|
| 67-68-5 | dimethyl sulfoxide | 150 ppm |
| 67-64-1 | acetone | 200 ppm |
| 71-43-2 | benzene | 52 ppm |

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| | | |
|----------|----------------------|-----------|
| 56-23-5 | carbon tetrachloride | 1.2 ppm |
| 67-66-3 | trichloromethane | 2 ppm |
| 64-17-5 | ethanol | 1,800 ppm |
| 142-82-5 | heptane | 500 ppm |
| 67-63-0 | propan-2-ol | 400 ppm |
| 108-38-3 | m-xylene | 130 ppm |
| 110-54-3 | n-hexane | 260 ppm |
| 109-99-9 | tetrahydrofuran | 100 ppm |
| 108-88-3 | toluene | 67 ppm |
| 75-05-8 | acetonitrile | 13 ppm |
| 109-66-0 | pentane | 3000* ppm |

· PAC-2:

| | | |
|----------|----------------------|--------------|
| 67-68-5 | dimethyl sulfoxide | 290 ppm |
| 67-64-1 | acetone | 3200* ppm |
| 71-43-2 | benzene | 800 ppm |
| 56-23-5 | carbon tetrachloride | 13 ppm |
| 67-66-3 | trichloromethane | 64 ppm |
| 64-17-5 | ethanol | 3300* ppm |
| 142-82-5 | heptane | 830 ppm |
| 67-63-0 | propan-2-ol | 2000* ppm |
| 108-38-3 | m-xylene | 920 ppm |
| 110-54-3 | n-hexane | 2900* ppm |
| 109-99-9 | tetrahydrofuran | 500 ppm |
| 108-88-3 | toluene | 560 ppm |
| 75-05-8 | acetonitrile | 50 ppm |
| 109-66-0 | pentane | 33000*** ppm |

· PAC-3:

| | | |
|----------|----------------------|-------------|
| 67-68-5 | dimethyl sulfoxide | 1,800 ppm |
| 67-64-1 | acetone | 5700* ppm |
| 71-43-2 | benzene | 4000* ppm |
| 56-23-5 | carbon tetrachloride | 340 ppm |
| 67-66-3 | trichloromethane | 3,200 ppm |
| 64-17-5 | ethanol | 15000* ppm |
| 142-82-5 | heptane | 5000* ppm |
| 67-63-0 | propan-2-ol | 12000** ppm |
| 108-38-3 | m-xylene | 2500* ppm |
| 110-54-3 | n-hexane | 8600** ppm |
| 109-99-9 | tetrahydrofuran | 5000* ppm |
| 108-88-3 | toluene | 3700* ppm |
| 75-05-8 | acetonitrile | 150 ppm |

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| |
|--|
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| | |
|------------------|-------------------------------------|
| 109-66-0 pentane | (Contd. of page 3) 200000*** ppm |
|------------------|-------------------------------------|

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.
- **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: |
|---|

| |
|----------------------------|
| 67-68-5 dimethyl sulfoxide |
|----------------------------|

| |
|-------------------------------|
| WEEL Long-term value: 250 ppm |
|-------------------------------|

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **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:** Goggles recommended during refilling.

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9 Physical and chemical properties

| | |
|---|---|
| · Information on basic physical and chemical properties | |
| · General Information | |
| · Appearance: | |
| Form: | Fluid |
| Color: | Colorless |
| · Odor: | Odorless |
| · Odor threshold: | Not determined. |
| · pH-value: | Not determined. |
| · Change in condition | |
| Melting point/Melting range: | 16-19 °C (60.8-66.2 °F) |
| Boiling point/Boiling range: | 189 °C (372.2 °F) |
| · Flash point: | 87 °C (188.6 °F) |
| · Flammability (solid, gaseous): | Not applicable. |
| · Ignition temperature: | 270 °C (518 °F) |
| · Decomposition temperature: | Not determined. |
| · Auto igniting: | Product is not selfigniting. |
| · Danger of explosion: | Not determined. |
| · Explosion limits: | |
| Lower: | 1.8 Vol % |
| Upper: | 63 Vol % |
| · Vapor pressure at 20 °C (68 °F): | 0.41 hPa (0.3 mm Hg) |
| · Density at 20 °C (68 °F): | 1.09731 g/cm ³ (9.15705 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 at 20 °C (68 °F): | 198 mPas |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 99.8 % |
| VOC content: | 99.73 % |
| | 1,094.3 g/l / 9.13 lb/gal |
| Solids content: | 0.0 % |
| · Other information | No further relevant information available. |

10 Stability and reactivity

· Reactivity No further relevant information available.

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- **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:**

67-68-5 dimethyl sulfoxide

| | | |
|------------|----------|-----------------------|
| Oral | LD50 | 14,500 mg/kg (rat) |
| Dermal | LD50 | >5,000 mg/kg (rabbit) |
| Inhalative | LC50/4 h | 40,250 mg/L (rat) |

71-43-2 benzene

| | | |
|------------|----------|---|
| Oral | LD50 | 3,340 mg/kg (rat) |
| Dermal | LD50 | 48 mg/kg (mouse) >8,260 mg/kg (rabbit) |
| Inhalative | LC50/4 h | 9,980 mg/L (mouse) |

56-23-5 carbon tetrachloride

| | | |
|--------|------|-------------------|
| Oral | LD50 | 2,350 mg/kg (rat) |
| Dermal | LD50 | 5,070 mg/kg (rat) |

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

| | | |
|----------|----------------------|----|
| 71-43-2 | benzene | 1 |
| 56-23-5 | carbon tetrachloride | 2B |
| 67-66-3 | trichloromethane | 2B |
| 64-17-5 | ethanol | 1 |
| 67-63-0 | propan-2-ol | 3 |
| 108-38-3 | m-xylene | 3 |
| 95-47-6 | o-xylene | 3 |
| 106-42-3 | p-xylene | 3 |
| 108-88-3 | toluene | 3 |

- **NTP (National Toxicology Program)**

| | | |
|---------|----------------------|---|
| 71-43-2 | benzene | K |
| 56-23-5 | carbon tetrachloride | R |

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| | | | |
|---------|------------------|--|--|
| 67-66-3 | trichloromethane | | |
|---------|------------------|--|--|

| | | | |
|--|--|--|---|
| | | | R |
|--|--|--|---|

· OSHA-Ca (Occupational Safety & Health Administration)

| | | |
|---------|---------|--|
| 71-43-2 | benzene | |
|---------|---------|--|

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

- | | |
|---|-----------------|
| · Not Regulated, De minimus Quantities | - |
| · UN-Number | |
| · DOT, ADN, IMDG, IATA | not regulated |
| · UN proper shipping name | |
| · DOT, ADN, IMDG, IATA | not regulated |
| · Transport hazard class(es) | |
| · DOT, ADN, IMDG, IATA | |
| · Class | not regulated |
| · Packing group | |
| · DOT, IMDG, IATA | not regulated |
| · Environmental hazards: | Not applicable. |

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| | |
|---------------------------------------|-----------------|
| · Special precautions for user | Not applicable. |
|---------------------------------------|-----------------|

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

| | |
|---------------------------------|---------------|
| · UN "Model Regulation": | not regulated |
|---------------------------------|---------------|

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):

| | |
|---------|---------|
| 71-43-2 | benzene |
|---------|---------|

| | |
|---------|----------------------|
| 56-23-5 | carbon tetrachloride |
|---------|----------------------|

| | |
|---------|------------------|
| 67-66-3 | trichloromethane |
|---------|------------------|

| | |
|---------|-------------|
| 67-63-0 | propan-2-ol |
|---------|-------------|

| | |
|----------|----------|
| 108-38-3 | m-xylene |
|----------|----------|

| | |
|----------|----------|
| 110-54-3 | n-hexane |
|----------|----------|

| | |
|---------|----------|
| 95-47-6 | o-xylene |
|---------|----------|

| | |
|----------|----------|
| 106-42-3 | p-xylene |
|----------|----------|

| | |
|----------|---------|
| 108-88-3 | toluene |
|----------|---------|

| | |
|---------|--------------|
| 75-05-8 | acetonitrile |
|---------|--------------|

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

| | |
|---------|---------|
| 71-43-2 | benzene |
|---------|---------|

| | |
|---------|----------------------|
| 56-23-5 | carbon tetrachloride |
|---------|----------------------|

| | |
|---------|------------------|
| 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:

| | |
|---------|---------|
| 71-43-2 | benzene |
|---------|---------|

| | |
|----------|----------|
| 110-54-3 | n-hexane |
|----------|----------|

· Chemicals known to cause developmental toxicity:

| | |
|---------|---------|
| 71-43-2 | benzene |
|---------|---------|

| | |
|---------|------------------|
| 67-66-3 | trichloromethane |
|---------|------------------|

| | |
|---------|---------|
| 64-17-5 | ethanol |
|---------|---------|

| | |
|----------|---------|
| 108-88-3 | toluene |
|----------|---------|

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· Carcinogenic categories
· EPA (Environmental Protection Agency)

| | | |
|----------|----------------------|-----------|
| 67-64-1 | acetone | I |
| 71-43-2 | benzene | A, K/L |
| 56-23-5 | carbon tetrachloride | L |
| 67-66-3 | trichloromethane | B2, L, NL |
| 142-82-5 | heptane | D |
| 108-38-3 | m-xylene | I |
| 110-54-3 | n-hexane | II |
| 95-47-6 | o-xylene | I |
| 106-42-3 | p-xylene | I |
| 109-99-9 | tetrahydrofuran | SC |
| 108-88-3 | toluene | II |
| 75-05-8 | acetonitrile | CBD, D |

· TLV (Threshold Limit Value established by ACGIH)

| | | |
|----------|----------------------|----|
| 67-64-1 | acetone | A4 |
| 71-43-2 | benzene | A1 |
| 56-23-5 | carbon tetrachloride | A2 |
| 67-66-3 | trichloromethane | A3 |
| 64-17-5 | ethanol | A3 |
| 67-63-0 | propan-2-ol | A4 |
| 108-38-3 | m-xylene | A4 |
| 95-47-6 | o-xylene | A4 |
| 106-42-3 | p-xylene | A4 |
| 109-99-9 | tetrahydrofuran | A3 |
| 108-88-3 | toluene | A4 |
| 75-05-8 | acetonitrile | A4 |

· NIOSH-Ca (National Institute for Occupational Safety and Health)

| | |
|---------|----------------------|
| 71-43-2 | benzene |
| 56-23-5 | carbon tetrachloride |
| 67-66-3 | trichloromethane |

· 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 03/29/2019 / 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

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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
Flam. Liq. 4: Flammable liquids – Category 4

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

US