

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/30/2019

Version Number 2

Reviewed on 03/30/2019

1 Identification

- **Product identifier**
- **Trade name:** USP 467 Calibration Standard (1X1 mL)
- **Part number:** USPM-467D-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**



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.

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
 dichloromethane
 benzene
 trichloroethylene

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· Hazard statements

Highly flammable liquid and vapor.
 Toxic if inhaled.
 May cause genetic defects.
 May cause cancer.
 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 = *1
 Fire = 3
 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.

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· Dangerous components:		
67-56-1	methanol	98.931%
75-09-2	dichloromethane	0.629%
71-43-2	benzene	0.126%
123-91-1	1,4-dioxane	0.126%
79-01-6	trichloroethylene	0.126%

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.
- **Reference to other sections**
See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

· Protective Action Criteria for Chemicals
· PAC-1:

67-56-1	methanol	530 ppm
75-09-2	dichloromethane	200 ppm
71-43-2	benzene	52 ppm
123-91-1	1,4-dioxane	17 ppm
79-01-6	trichloroethylene	130 ppm
67-66-3	trichloromethane	2 ppm

· PAC-2:

67-56-1	methanol	2,100 ppm
75-09-2	dichloromethane	560 ppm
71-43-2	benzene	800 ppm
123-91-1	1,4-dioxane	320 ppm
79-01-6	trichloroethylene	450 ppm
67-66-3	trichloromethane	64 ppm

· PAC-3:

67-56-1	methanol	7200* ppm
75-09-2	dichloromethane	6,900 ppm
71-43-2	benzene	4000* ppm
123-91-1	1,4-dioxane	760 ppm
79-01-6	trichloroethylene	3,800 ppm
67-66-3	trichloromethane	3,200 ppm

7 Handling and storage

· Handling:
· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· 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.

· Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

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 · **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:**
67-56-1 methanol

 PEL Long-term value: 260 mg/m³, 200 ppm

 REL Short-term value: 325 mg/m³, 250 ppm
 Long-term value: 260 mg/m³, 200 ppm
 Skin

 TLV Short-term value: 328 mg/m³, 250 ppm
 Long-term value: 262 mg/m³, 200 ppm
 Skin; BEI

75-09-2 dichloromethane

 PEL Short-term value: 125 ppm
 Long-term value: 25 ppm
 see 29 CFR 1910.1052

REL See Pocket Guide App. A

 TLV Long-term value: 174 mg/m³, 50 ppm
 BEI

71-43-2 benzene

 PEL Short-term value: 15* mg/m³, 5* ppm
 Long-term value: 3* mg/m³, 1* ppm
 *table Z-2 for exclusions in 29CFR1910.1028(d)

 REL Short-term value: 1 ppm
 Long-term value: 0.1 ppm
 See Pocket Guide App. A

 TLV Short-term value: 8 mg/m³, 2.5 ppm
 Long-term value: 1.6 mg/m³, 0.5 ppm
 Skin; BEI

123-91-1 1,4-dioxane

 PEL Long-term value: 360 mg/m³, 100 ppm
 Skin

 REL Ceiling limit value: 3.6* mg/m³, 1* ppm
 *30-min; See Pocket Guide App. A

 TLV Long-term value: 72 mg/m³, 20 ppm
 Skin

79-01-6 trichloroethylene

 PEL Long-term value: 100 ppm
 Ceiling limit value: 200; 300* ppm
 *5-min peak in any 2 hrs

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REL	See Pocket Guide Apps. A and C
TLV	Short-term value: 135 mg/m ³ , 25 ppm Long-term value: 54 mg/m ³ , 10 ppm BEI

· Ingredients with biological limit values:
67-56-1 methanol

BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)
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75-09-2 dichloromethane

BEI	0.3 mg/L Medium: urine Time: end of shift Parameter: Dichloromethane (semi-quantitative)
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71-43-2 benzene

BEI	25 µg/g creatinine Medium: urine Time: end of shift Parameter: S-Phenylmercapturic acid (background)
	500 µg/g creatinine Medium: urine Time: end of shift Parameter: t,t-Muconic acid (background)

79-01-6 trichloroethylene

BEI	15 mg/L Medium: urine Time: end of shift at end of workweek Parameter: Trichloroacetic acid (nonspecific)
	0.5 mg/L Medium: blood Time: end of shift at end of workweek Parameter: Trichloroethanol without hydrolysis (nonspecific)
	- Medium: blood Time: end of shift at end of workweek Parameter: Trichloroethylene (semi-quantitative)
	- Medium: end-exhaled air Time: end of shift at end of workweek Parameter: Trichloroethylene (semi-quantitative)

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

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- **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: 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 °C (147.2 °F)

- **Flash point:** 9 °C (48.2 °F)

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

- **Ignition temperature:** 455 °C (851 °F)

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· 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):	0.8048 g/cm ³ (6.71606 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:	99.9 %
VOC content:	99.31 %
	799.2 g/l / 6.67 lb/gal
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
ATE (Acute Toxicity Estimate)		
Dermal	LD50	38,156 mg/kg (mouse)
Inhalative	LC50/4 h	3.03 mg/L

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67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)
75-09-2 dichloromethane		
Oral	LD50	1,600 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	88 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)
123-91-1 1,4-dioxane		
Oral	LD50	5,700 mg/kg (mouse) 4,200 mg/kg (rat)
Dermal	LD50	7,858 mg/kg (rabbit)
Inhalative	LC50/4 h	46 mg/L (rat)
79-01-6 trichloroethylene		
Oral	LD50	2,402 mg/kg (mouse) 4,290 mg/kg (rat)
Dermal	LD50	8,450 mg/kg (mouse)

- **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)**

75-09-2	dichloromethane	2A
71-43-2	benzene	1
123-91-1	1,4-dioxane	2B
79-01-6	trichloroethylene	1
67-66-3	trichloromethane	2B

- **NTP (National Toxicology Program)**

75-09-2	dichloromethane	R
71-43-2	benzene	K
123-91-1	1,4-dioxane	R
79-01-6	trichloroethylene	K
67-66-3	trichloromethane	R

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· OSHA-Ca (Occupational Safety & Health Administration)

75-09-2 dichloromethane

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 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.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|---|---|
| · Not Regulated, De minimus Quantities | - |
| · UN-Number | |
| · DOT, IMDG, IATA | UN1992 |
| · UN proper shipping name | |
| · DOT | Flammable liquids, toxic, n.o.s. (Methanol) |
| · IMDG, IATA | FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL) |

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· 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

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· UN "Model Regulation":	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL), 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):

67-66-3	trichloromethane
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· Section 313 (Specific toxic chemical listings):

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

All ingredients are listed.	
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· Proposition 65
· Chemicals known to cause cancer:

75-09-2	dichloromethane
71-43-2	benzene
123-91-1	1,4-dioxane
79-01-6	trichloroethylene
67-66-3	trichloromethane

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.	
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· Chemicals known to cause reproductive toxicity for males:

71-43-2	benzene
79-01-6	trichloroethylene

· Chemicals known to cause developmental toxicity:

67-56-1	methanol
71-43-2	benzene
79-01-6	trichloroethylene
67-66-3	trichloromethane

· Carcinogenic categories
· EPA (Environmental Protection Agency)

75-09-2	dichloromethane			L
71-43-2	benzene			A, K/L
123-91-1	1,4-dioxane			L
79-01-6	trichloroethylene			CaH
67-66-3	trichloromethane			B2, L, NL

· TLV (Threshold Limit Value established by ACGIH)

75-09-2	dichloromethane			A3
71-43-2	benzene			A1

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123-91-1	1,4-dioxane	A3
79-01-6	trichloroethylene	A2
67-66-3	trichloromethane	A3

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

75-09-2	dichloromethane
71-43-2	benzene
123-91-1	1,4-dioxane
79-01-6	trichloroethylene
67-66-3	trichloromethane

· 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.

16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of preparation / last revision 03/30/2019 / 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

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

Muta. 1B: Germ cell mutagenicity – Category 1B

Carc. 1A: Carcinogenicity – Category 1A

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1

· * Data compared to the previous version altered.