

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-467C-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**



GHS08 Health hazard

Carc. 1B H350 May cause cancer.

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**



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

dichloromethane

- **Hazard statements**

Combustible liquid.

May cause cancer.

- **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from flames and hot surfaces. – No smoking.

Wear protective gloves/protective clothing/eye protection/face protection.

IF exposed or concerned: Get medical advice/attention.

 In case of fire: Use for extinction: CO₂, powder or water spray.

Store in a well-ventilated place. Keep cool.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



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



- **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.

- **Dangerous components:**

67-68-5	dimethyl sulfoxide	99.231%
75-09-2	dichloromethane	0.453%

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.

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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
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:**

67-68-5	dimethyl sulfoxide	290 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:**

67-68-5	dimethyl sulfoxide	1,800 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.

- **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Keep respiratory protective device available.

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- **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:	
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67-68-5 dimethyl sulfoxide	
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WEEL	Long-term value: 250 ppm
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75-09-2 dichloromethane	
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PEL	Short-term value: 125 ppm Long-term value: 25 ppm see 29 CFR 1910.1052
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REL	See Pocket Guide App. A
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TLV	Long-term value: 174 mg/m ³ , 50 ppm BEI
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Ingredients with biological limit values:	
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75-09-2 dichloromethane	
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BEI	0.3 mg/L Medium: urine Time: end of shift Parameter: Dichloromethane (semi-quantitative)
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- **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.
- 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.

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- **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:** 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):** 1.10115 g/cm³ (9.1891 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.

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- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **Solvent content:**
 - Organic solvents:** 100.0 %
 - VOC content:** 99.50 %
 - 1,095.7 g/l / 9.14 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:**

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)

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)

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.

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- **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:

- **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

- **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.

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- **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.
· 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):	
75-09-2	dichloromethane
71-43-2	benzene
123-91-1	1,4-dioxane
79-01-6	trichloroethylene
67-66-3	trichloromethane
· TSCA (Toxic Substances Control Act):	
All ingredients are listed.	
· Proposition 65	
· Chemicals known to cause cancer:	
75-09-2	dichloromethane
71-43-2	benzene
123-91-1	1,4-dioxane

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79-01-6	trichloroethylene
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
79-01-6	trichloroethylene

· Chemicals known to cause developmental toxicity:

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
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:
· 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

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· **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. 4: Flammable liquids – Category 4

Carc. 1B: Carcinogenicity – Category 1B

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

US