

Safety Data Sheet

acc. to OSHA HCS

Revision date 08/23/2024

1 Identification

- **Product identifier**
- **Product Name:** Primary VPH Standard (1X1 mL)
- **Part number:** SMA-101-1
- **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

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08 Health hazard

Germ Cell Mutagenicity 1B

H340 May cause genetic defects.

Carcinogenicity 1A

H350 May cause cancer.

Toxic to Reproduction 2

H361 Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure 1

H370 Causes damage to the central nervous system and the visual 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

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 1)

toluene

ethylbenzene

· Hazard statements

H225 Highly flammable liquid and vapor.

H331 Toxic if inhaled.

H340 May cause genetic defects.

H350 May cause cancer.

H361 Suspected of damaging fertility or the unborn child.

H370 Causes damage to the central nervous system and the visual organs.

· Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P240 Ground/bond container and receiving equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P321 Specific treatment (see on this label).

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P370+P378 In case of fire: Use CO₂, powder or water spray to extinguish.

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 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.

US

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 2)

3 Composition/information on ingredients

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

· Dangerous components:

67-56-1	methanol	97.9776%
71-43-2	benzene	0.1264%
91-20-3	naphthalene	0.1264%
100-41-4	ethylbenzene	0.1264%
108-88-3	toluene	0.1264%
1634-04-4	tert-butyl methyl ether	0.1264%

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.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 3)

· 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 section 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:

67-56-1	methanol	530 ppm
71-43-2	benzene	52 ppm
91-20-3	naphthalene	15 ppm
95-63-6	1,2,4-trimethylbenzene	140 ppm
100-41-4	ethylbenzene	33 ppm
107-83-5	2-methylpentane	1,000 ppm
108-38-3	m-xylene	130 ppm
108-88-3	toluene	67 ppm
109-66-0	pentane	3000* ppm
111-84-2	nonane	600 ppm
124-18-5	decane	6.6 ppm
540-84-1	2,2,4-trimethylpentane	230 ppm
1634-04-4	tert-butyl methyl ether	50 ppm
1678-93-9	n-butylcyclohexane	21 ppm

· PAC-2:

67-56-1	methanol	2,100 ppm
71-43-2	benzene	800 ppm
91-20-3	naphthalene	83 ppm
95-63-6	1,2,4-trimethylbenzene	360 ppm
100-41-4	ethylbenzene	1100* ppm
107-83-5	2-methylpentane	11000** ppm
108-38-3	m-xylene	920 ppm
108-88-3	toluene	560 ppm
109-66-0	pentane	33000*** ppm
111-84-2	nonane	830 ppm
124-18-5	decane	73 ppm
540-84-1	2,2,4-trimethylpentane	830 ppm
1634-04-4	tert-butyl methyl ether	570 ppm
1678-93-9	n-butylcyclohexane	230 ppm

· PAC-3:

67-56-1	methanol	7200* ppm
71-43-2	benzene	4000* ppm
91-20-3	naphthalene	500 ppm

(Contd. on page 5)

Safety Data Sheet acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 4)

95-63-6	1,2,4-trimethylbenzene	480 ppm
100-41-4	ethylbenzene	1800* ppm
107-83-5	2-methylpentane	66000*** ppm
108-38-3	m-xylene	2500* ppm
108-88-3	toluene	3700* ppm
109-66-0	pentane	200000 ppm
111-84-2	nonane	5,000 ppm
124-18-5	decane	440 ppm
540-84-1	2,2,4-trimethylpentane	5000* ppm
1634-04-4	tert-butyl methyl ether	5300* ppm
1678-93-9	n-butylcyclohexane	1,400 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.

· 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 section 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: 250 ppm

Long-term value: 200 ppm

Skin; BEIc

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 5)

71-43-2 benzene

PEL	Short-term value: 15* mg/m ³ , 5* ppm Long-term value: 3* mg/m ³ , 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	Long-term value: 0.02 ppm Skin; BEI, A1

91-20-3 naphthalene

PEL	Long-term value: 50 mg/m ³ , 10 ppm
REL	Short-term value: 75 mg/m ³ , 15 ppm Long-term value: 50 mg/m ³ , 10 ppm
TLV	Long-term value: 10 ppm Skin; BEI, A3

100-41-4 ethylbenzene

PEL	Long-term value: 435 mg/m ³ , 100 ppm
REL	Short-term value: 545 mg/m ³ , 125 ppm Long-term value: 435 mg/m ³ , 100 ppm
TLV	Long-term value: 20 ppm OTO, BEI, A3

108-88-3 toluene

PEL	Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift
REL	Short-term value: 560 mg/m ³ , 150 ppm Long-term value: 375 mg/m ³ , 100 ppm
TLV	Long-term value: 20 ppm BEI, OTO, A4

1634-04-4 tert-butyl methyl ether

TLV	Long-term value: 50 ppm A3
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· 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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(Contd. on page 7)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 6)

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)

91-20-3 naphthalene

BEI	- Medium: - Time: end of shift Parameter: 1-Naphthol with hydrolysis + 2-Naphthol with hydrolysis (Nq,Ns)
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100-41-4 ethylbenzene

BEI	0.15 g/g creatinine Medium: urine Time: end of shift at end of workweek Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific)
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108-88-3 toluene

BEI	0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene
	0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene
	0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: o-Cresol with hydrolysis (background)

· **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.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 7)

· 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: 64.7 °C (148.5 °F)

· Flash point: 9 °C (48.2 °F)

· Flammability (solid, gaseous): Highly flammable.

· Auto igniting: 455 °C (851 °F)

· Decomposition temperature: Not determined.

· Ignition temperature: 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): 0.8 g/cm³ (6.676 lbs/gal)

· Relative density Not determined.

· Vapor density Not determined.

(Contd. on page 9)

Safety Data Sheet acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 8)

· 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:	99.62 %
	996.2 g/l / 8.31 lb/gal
Solids content:	0.1 %
· 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	36,235 mg/kg
Inhalative	LC50/4 h	3.06 mg/L

67-56-1 methanol

Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

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)

91-20-3 naphthalene

Oral	LD50	490 mg/kg (rat)
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(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 9)

Dermal	LD50	5,000 mg/kg (rat) 20,000 mg/kg (rabbit)
100-41-4 ethylbenzene		
Oral	LD50	3,500 mg/kg (rat)
Dermal	LD50	15,354 mg/kg (rabbit)
Inhalative	LC50/4 h	17.2 mg/L (rat)
108-88-3 toluene		
Oral	LD50	5,580 mg/kg (rat)
Dermal	LD50	12,124 mg/kg (rabbit)
Inhalative	LC50/4 h	5,320 mg/L (mouse) 28.1 mg/L (rat)
1634-04-4 tert-butyl methyl ether		
Oral	LD50	4,000 mg/kg (rat)
Dermal	LD50	1,000 mg/kg (rabbit)
Inhalative	LC50/4 h	23,576 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
91-20-3	naphthalene	2B
95-47-6	o-xylene	3
100-41-4	ethylbenzene	2B
106-42-3	p-xylene	3
108-38-3	m-xylene	3
108-88-3	toluene	3
1634-04-4	tert-butyl methyl ether	3

· **NTP (National Toxicology Program)**

71-43-2	benzene	K
91-20-3	naphthalene	R

· **OSHA-Ca (Occupational Safety & Health Administration)**

71-43-2	benzene
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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)





(Contd. of page 10)

- **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 minimis Quantities | - |
| · UN-Number
· DOT, IMDG, IATA | UN1230 |
| · UN proper shipping name
· DOT
· IMDG, IATA | Methanol solution
METHANOL solution |
| · Transport hazard class(es)
· DOT
<div style="display: flex; justify-content: space-around; align-items: center;">   </div> | |
| · Class
· Label | 3 Flammable liquids
3, 6.1 |
| · IMDG
<div style="display: flex; justify-content: space-around; align-items: center;">   </div> | |
| · Class | 3 Flammable liquids |

(Contd. on page 12)

Safety Data Sheet



acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 11)

· 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
· Hazard identification number (Kemler code):	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

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

67-56-1	methanol
71-43-2	benzene
91-20-3	naphthalene
95-47-6	o-xylene
95-63-6	1,2,4-trimethylbenzene
100-41-4	ethylbenzene

(Contd. on page 13)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 12)

106-42-3	p-xylene
108-38-3	m-xylene
108-88-3	toluene
1634-04-4	tert-butyl methyl ether

· TSCA (Toxic Substances Control Act):

67-56-1	methanol	ACTIVE
71-43-2	benzene	ACTIVE
91-20-3	naphthalene	ACTIVE
95-47-6	o-xylene	ACTIVE
95-63-6	1,2,4-trimethylbenzene	ACTIVE
100-41-4	ethylbenzene	ACTIVE
106-42-3	p-xylene	ACTIVE
107-83-5	2-methylpentane	ACTIVE
108-38-3	m-xylene	ACTIVE
108-88-3	toluene	ACTIVE
109-66-0	pentane	ACTIVE
111-84-2	nonane	ACTIVE
124-18-5	decane	ACTIVE
540-84-1	2,2,4-trimethylpentane	ACTIVE
615-59-8	2,5-dibromotoluene	INACTIVE
1634-04-4	tert-butyl methyl ether	ACTIVE
1678-93-9	n-butylcyclohexane	ACTIVE

· Hazardous Air Pollutants

67-56-1	methanol
71-43-2	benzene
91-20-3	naphthalene
95-47-6	o-xylene
100-41-4	ethylbenzene
106-42-3	p-xylene
108-38-3	m-xylene
108-88-3	toluene
540-84-1	2,2,4-trimethylpentane
1634-04-4	tert-butyl methyl ether

· Proposition 65
· Chemicals known to cause cancer:

71-43-2	benzene
91-20-3	naphthalene
100-41-4	ethylbenzene

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

(Contd. on page 14)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 13)

· Chemicals known to cause reproductive toxicity for males:

71-43-2 benzene

· Chemicals known to cause developmental toxicity:

67-56-1 methanol

71-43-2 benzene

108-88-3 toluene

· Carcinogenic categories
· EPA (Environmental Protection Agency)

71-43-2 benzene

A, K/L

91-20-3 naphthalene

C, CBD

95-47-6 o-xylene

I

95-63-6 1,2,4-trimethylbenzene

II

100-41-4 ethylbenzene

D

106-42-3 p-xylene

I

108-38-3 m-xylene

I

108-88-3 toluene

II

540-84-1 2,2,4-trimethylpentane

II

· TLV (Threshold Limit Value)

71-43-2 benzene

A1

91-20-3 naphthalene

A4

95-47-6 o-xylene

A4

100-41-4 ethylbenzene

A3

106-42-3 p-xylene

A4

108-38-3 m-xylene

A4

108-88-3 toluene

A4

1634-04-4 tert-butyl methyl ether

A3

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

71-43-2 benzene

· 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: pdl-acg-regulatory-cq@agilent.com

(Contd. on page 15)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

Product Name: Primary VPH Standard (1X1 mL)

(Contd. of page 14)

· **Date of preparation / last revision** 08/23/2024 / 4

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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

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

Flammable Liquids 2: Flammable liquids – Category 2

Acute Toxicity - Inhalation 3: Acute toxicity – Category 3

Germ Cell Mutagenicity 1B: Germ cell mutagenicity – Category 1B

Carcinogenicity 1A: Carcinogenicity – Category 1A

Toxic to Reproduction 2: Reproductive toxicity – Category 2

Specific Target Organ Toxicity - Single Exposure 1: Specific target organ toxicity (single exposure) – Category 1

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

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