

Safety Data Sheet
acc. to OSHA HCS

Printing date 04/01/2019

Version Number 3

Reviewed on 04/01/2019

1 Identification

- **Product identifier**
- **Trade name: Purgeable Halocarbon and Aromatics Standard (1X1 mL)**
- **Part number: HCM-622-1**
- **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.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT SE 1 H370 Causes damage to organs.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements**

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**



· **Signal word** Danger

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

methanol
benzene
1,1,2,2-tetrachloroethane
1,2-dichloroethane
carbon tetrachloride
(Z)-1,3-dichloropropene
trans-1,3-dichloropropene
tetrachloroethylene

· **Hazard statements**

Highly flammable liquid and vapor.
Harmful in contact with skin.
Toxic if inhaled.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
Causes damage to organs.
May cause damage to organs through prolonged or repeated exposure.

· **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.
Contaminated work clothing must not be allowed out of the workplace.
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).
Call a poison center/doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
Take off contaminated clothing and wash it before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
In case of fire: Use for extinction: CO₂, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.

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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.

- **Dangerous components:**

67-56-1	methanol	93.68%
71-43-2	benzene	0.253%
75-27-4	bromodichloromethane	0.253%
56-23-5	carbon tetrachloride	0.253%
67-66-3	trichloromethane	0.253%
106-46-7	1,4-dichlorobenzene	0.253%
107-06-2	1,2-dichloroethane	0.253%
79-01-6	trichloroethylene	0.253%
10061-01-5	(Z)-1,3-dichloropropene	0.253%
10061-02-6	trans-1,3-dichloropropene	0.253%
100-41-4	ethylbenzene	0.253%
75-09-2	dichloromethane	0.253%
79-34-5	1,1,2,2-tetrachloroethane	0.253%
127-18-4	tetrachloroethylene	0.253%
108-88-3	toluene	0.253%
71-55-6	1,1,1-trichloroethane	0.253%
79-00-5	1,1,2-trichloroethane	0.253%

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4 First-aid measures

- **Description of first aid measures**
- **General information:**
 Immediately remove any clothing soiled by the product.
 Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
 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.
 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

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75-27-4	bromodichloromethane	1.3 mg/m ³
75-25-2	bromoform	1.5 ppm
56-23-5	carbon tetrachloride	1.2 ppm
108-90-7	chlorobenzene	10 ppm
67-66-3	trichloromethane	2 ppm
124-48-1	dibromochloromethane	1.1 mg/m ³
95-50-1	1,2-dichlorobenzene	50 ppm
541-73-1	1,3-dichlorobenzene	6 ppm
106-46-7	1,4-dichlorobenzene	30 ppm
75-35-4	1,1-dichloroethylene	45 ppm
107-06-2	1,2-dichloroethane	50 ppm
75-34-3	1,1-dichloroethane	300 ppm
79-01-6	trichloroethylene	130 ppm
78-87-5	1,2-dichloropropane	30 ppm
156-60-5	trans-dichloroethylene	280 ppm
100-41-4	ethylbenzene	33 ppm
75-09-2	dichloromethane	200 ppm
79-34-5	1,1,2,2-tetrachloroethane	3 ppm
127-18-4	tetrachloroethylene	35 ppm
108-88-3	toluene	67 ppm
71-55-6	1,1,1-trichloroethane	230 ppm
79-00-5	1,1,2-trichloroethane	30 ppm

· PAC-2:

67-56-1	methanol	2,100 ppm
71-43-2	benzene	800 ppm
75-27-4	bromodichloromethane	14 mg/m ³
75-25-2	bromoform	6.8 ppm
56-23-5	carbon tetrachloride	13 ppm
108-90-7	chlorobenzene	150 ppm
67-66-3	trichloromethane	64 ppm
124-48-1	dibromochloromethane	12 mg/m ³
95-50-1	1,2-dichlorobenzene	170 ppm
541-73-1	1,3-dichlorobenzene	66 ppm
106-46-7	1,4-dichlorobenzene	170 ppm
75-35-4	1,1-dichloroethylene	500 ppm
107-06-2	1,2-dichloroethane	200 ppm
75-34-3	1,1-dichloroethane	670 ppm
79-01-6	trichloroethylene	450 ppm
78-87-5	1,2-dichloropropane	220 ppm
156-60-5	trans-dichloroethylene	1,000 ppm
100-41-4	ethylbenzene	1100* ppm

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75-09-2	dichloromethane	560 ppm
79-34-5	1,1,2,2-tetrachloroethane	120 ppm
127-18-4	tetrachloroethylene	230 ppm
108-88-3	toluene	560 ppm
71-55-6	1,1,1-trichloroethane	600 ppm
79-00-5	1,1,2-trichloroethane	180 ppm
· PAC-3:		
67-56-1	methanol	7200* ppm
71-43-2	benzene	4000* ppm
75-27-4	bromodichloromethane	85 mg/m ³
75-25-2	bromoform	41 ppm
56-23-5	carbon tetrachloride	340 ppm
108-90-7	chlorobenzene	400 ppm
67-66-3	trichloromethane	3,200 ppm
124-48-1	dibromochloromethane	73 mg/m ³
95-50-1	1,2-dichlorobenzene	1,000 ppm
541-73-1	1,3-dichlorobenzene	400 ppm
106-46-7	1,4-dichlorobenzene	1,000 ppm
75-35-4	1,1-dichloroethylene	1,000 ppm
107-06-2	1,2-dichloroethane	300 ppm
75-34-3	1,1-dichloroethane	4,000 ppm
79-01-6	trichloroethylene	3,800 ppm
78-87-5	1,2-dichloropropane	2,000 ppm
156-60-5	trans-dichloroethylene	1,700 ppm
100-41-4	ethylbenzene	1800* ppm
75-09-2	dichloromethane	6,900 ppm
79-34-5	1,1,2,2-tetrachloroethane	150 ppm
127-18-4	tetrachloroethylene	1,200 ppm
108-88-3	toluene	3700* ppm
71-55-6	1,1,1-trichloroethane	4,200 ppm
79-00-5	1,1,2-trichloroethane	500 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.

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- **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 item 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

67-56-1 methanol

PEL	Long-term value: 260 mg/m ³ , 200 ppm
REL	Short-term value: 325 mg/m ³ , 250 ppm Long-term value: 260 mg/m ³ , 200 ppm Skin
TLV	Short-term value: 328 mg/m ³ , 250 ppm Long-term value: 262 mg/m ³ , 200 ppm Skin; BEI

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	Short-term value: 8 mg/m ³ , 2.5 ppm Long-term value: 1.6 mg/m ³ , 0.5 ppm Skin; BEI

56-23-5 carbon tetrachloride

PEL	Long-term value: 10 ppm Ceiling limit value: 25; 200* ppm *5-min peak in any 4 hrs
REL	Short-term value: 12.6* mg/m ³ , 2* ppm *60-min; See Pocket Guide App. A
TLV	Short-term value: 63 mg/m ³ , 10 ppm Long-term value: 31 mg/m ³ , 5 ppm Skin

67-66-3 trichloromethane

PEL	Ceiling limit value: 240 mg/m ³ , 50 ppm
REL	Short-term value: 9.78* mg/m ³ , 2* ppm *60-min; See Pocket Guide App. A

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TLV	Long-term value: 49 mg/m ³ , 10 ppm
106-46-7 1,4-dichlorobenzene	
PEL	Long-term value: 450 mg/m ³ , 75 ppm
REL	See Pocket Guide App. A
TLV	Long-term value: 60 mg/m ³ , 10 ppm
107-06-2 1,2-dichloroethane	
PEL	Long-term value: 50 ppm Ceiling limit value: 100; 200* ppm *5-min peak in any 3 hrs
REL	Short-term value: 8 mg/m ³ , 2 ppm Long-term value: 4 mg/m ³ , 1 ppm See Pocket Guide Apps. A and C
TLV	Long-term value: 40 mg/m ³ , 10 ppm
79-01-6 trichloroethylene	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm *5-min peak in any 2 hrs
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
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: 87 mg/m ³ , 20 ppm 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/m ³ , 50 ppm BEI
79-34-5 1,1,2,2-tetrachloroethane	
PEL	Long-term value: 35 mg/m ³ , 5 ppm Skin
REL	Long-term value: 7 mg/m ³ , 1 ppm Skin; See Pocket Guide Apps. A and C
TLV	Long-term value: 6.9 mg/m ³ , 1 ppm Skin
127-18-4 tetrachloroethylene	
PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm *5-min peak in any 3 hrs

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REL	Minimize workplace exp. concs.; Pocket Guide App. A
TLV	Short-term value: 685 mg/m ³ , 100 ppm Long-term value: 170 mg/m ³ , 25 ppm BEI

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: 75 mg/m ³ , 20 ppm BEI

71-55-6 1,1,1-trichloroethane

PEL	Long-term value: 1900 mg/m ³ , 350 ppm
REL	Ceiling limit value: 1900* mg/m ³ , 350* ppm *15-min; See Pocket Guide App. C
TLV	Short-term value: 2460 mg/m ³ , 450 ppm Long-term value: 1910 mg/m ³ , 350 ppm BEI

79-00-5 1,1,2-trichloroethane

PEL	Long-term value: 45 mg/m ³ , 10 ppm Skin
REL	Long-term value: 45 mg/m ³ , 10 ppm Skin; See Pocket Guide Apps.A and C
TLV	Long-term value: 55 mg/m ³ , 10 ppm Skin

· 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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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)

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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)

100-41-4 ethylbenzene

BEI	0.7 g/g creatinine Medium: urine Time: end of shift at end of workweek Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific, semi-quantitative)
	- Medium: end-exhaled air Time: not critical Parameter: Ethyl benzene (semi-quantitative)

75-09-2 dichloromethane

BEI	0.3 mg/L Medium: urine Time: end of shift Parameter: Dichloromethane (semi-quantitative)
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127-18-4 tetrachloroethylene

BEI	3 ppm Medium: end-exhaled air Time: prior to shift Parameter: Tetrachloroethylene
	0.5 mg/L Medium: blood Time: prior to shift Parameter: Tetrachloroethylene

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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)

71-55-6 1,1,1-trichloroethane

BEI	40 ppm Medium: end-exhaled air Time: prior to last shift of workweek Parameter: Methyl chloroform
	10 mg/L Medium: urine Time: end of workweek Parameter: Trichloroacetic acid (nonspecific, semi-quantitative)
	30 mg/L Medium: urine Time: end of shift at end of workweek Parameter: Total trichloroethanol (nonspecific, semi-quantitative)
	1 mg/L Medium: blood Time: end of shift at end of workweek Parameter: Total trichloroethanol (nonspecific)

· **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.
Avoid contact with the eyes and skin.

· **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.

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· **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)

· **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):** 0.8383 g/cm³ (6.99561 lbs/gal)

· **Relative density** Not determined.

· **Vapor density** Not determined.

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· 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:	96.7 %
VOC content:	95.96 % 804.4 g/l / 6.71 lb/gal
Solids content:	0.5 %
· 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)

Oral	LD50	21,976 mg/kg (rat)
Dermal	LD50	1,643 mg/kg
Inhalative	LC50/4 h	3.13 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)

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75-27-4 bromodichloromethane		
Oral	LD50	450 mg/kg (mouse)
56-23-5 carbon tetrachloride		
Oral	LD50	2,350 mg/kg (rat)
Dermal	LD50	5,070 mg/kg (rat)
67-66-3 trichloromethane		
Oral	LD50	908 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat) >20,000 mg/kg (rabbit)
95-50-1 1,2-dichlorobenzene		
Oral	LD50	500 mg/kg (rat)
Dermal	LD50	>10,000 mg/kg (rabbit)
106-46-7 1,4-dichlorobenzene		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	>5.07 mg/L (rat)
107-06-2 1,2-dichloroethane		
Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2,800 mg/kg (rat) 2,800 mg/kg (rabbit)
79-01-6 trichloroethylene		
Oral	LD50	2,402 mg/kg (mouse) 4,290 mg/kg (rat)
Dermal	LD50	8,450 mg/kg (mouse)
10061-01-5 (Z)-1,3-dichloropropene		
Oral	LD50	250 mg/kg (rat)
10061-02-6 trans-1,3-dichloropropene		
Oral	LD50	250 mg/kg (rat)
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)
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)
79-34-5 1,1,2,2-tetrachloroethane		
Oral	LD50	200 mg/kg (rat)
127-18-4 tetrachloroethylene		
Oral	LD50	2,629 mg/kg (rat)
Inhalative	LC50/4 h	4,000 mg/L (rat)

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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)

71-55-6 1,1,1-trichloroethane

Oral	LD50	10,300 mg/kg (rat)
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79-00-5 1,1,2-trichloroethane

Oral	LD50	836 mg/kg (rat)
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- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritating effect.

- **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Toxic

Harmful

Irritant

The product can cause inheritable damage.

- **Carcinogenic categories**

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

71-43-2	benzene	1
75-27-4	bromodichloromethane	2B
75-25-2	bromoform	3
56-23-5	carbon tetrachloride	2B
67-66-3	trichloromethane	2B
124-48-1	dibromochloromethane	3
95-50-1	1,2-dichlorobenzene	3
541-73-1	1,3-dichlorobenzene	3
106-46-7	1,4-dichlorobenzene	2B
75-35-4	1,1-dichloroethylene	3
107-06-2	1,2-dichloroethane	2B
79-01-6	trichloroethylene	1
78-87-5	1,2-dichloropropane	1
100-41-4	ethylbenzene	2B
75-09-2	dichloromethane	2A
79-34-5	1,1,2,2-tetrachloroethane	2B
127-18-4	tetrachloroethylene	2A
108-88-3	toluene	3
71-55-6	1,1,1-trichloroethane	3
79-00-5	1,1,2-trichloroethane	3

- **NTP (National Toxicology Program)**

71-43-2	benzene	K
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75-27-4	bromodichloromethane	R
56-23-5	carbon tetrachloride	R
67-66-3	trichloromethane	R
106-46-7	1,4-dichlorobenzene	R
107-06-2	1,2-dichloroethane	R
79-01-6	trichloroethylene	K
75-09-2	dichloromethane	R
127-18-4	tetrachloroethylene	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:**
 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** UN1230

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· **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** 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

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· 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
75-34-3	1,1-dichloroethane

· Section 313 (Specific toxic chemical listings):

67-56-1	methanol
71-43-2	benzene
75-27-4	bromodichloromethane
75-25-2	bromoform
56-23-5	carbon tetrachloride
108-90-7	chlorobenzene
67-66-3	trichloromethane
95-50-1	1,2-dichlorobenzene
541-73-1	1,3-dichlorobenzene
106-46-7	1,4-dichlorobenzene
75-35-4	1,1-dichloroethylene
107-06-2	1,2-dichloroethane
75-34-3	1,1-dichloroethane
79-01-6	trichloroethylene
78-87-5	1,2-dichloropropane
10061-02-6	trans-1,3-dichloropropene
100-41-4	ethylbenzene
75-09-2	dichloromethane
79-34-5	1,1,2,2-tetrachloroethane
127-18-4	tetrachloroethylene
108-88-3	toluene
71-55-6	1,1,1-trichloroethane
79-00-5	1,1,2-trichloroethane

· TSCA (Toxic Substances Control Act):

67-56-1	methanol
71-43-2	benzene
75-27-4	bromodichloromethane
75-25-2	bromoform

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56-23-5	carbon tetrachloride
108-90-7	chlorobenzene
67-66-3	trichloromethane
124-48-1	dibromochloromethane
95-50-1	1,2-dichlorobenzene
541-73-1	1,3-dichlorobenzene
106-46-7	1,4-dichlorobenzene
75-35-4	1,1-dichloroethylene
107-06-2	1,2-dichloroethane
75-34-3	1,1-dichloroethane
79-01-6	trichloroethylene
78-87-5	1,2-dichloropropane
156-60-5	trans-dichloroethylene
10061-02-6	trans-1,3-dichloropropene
100-41-4	ethylbenzene
75-09-2	dichloromethane
79-34-5	1,1,2,2-tetrachloroethane
127-18-4	tetrachloroethylene
108-88-3	toluene
71-55-6	1,1,1-trichloroethane
79-00-5	1,1,2-trichloroethane

· TSCA new (21st Century Act): (Substances not listed)

75-27-4	bromodichloromethane
10061-01-5	(Z)-1,3-dichloropropene
10061-02-6	trans-1,3-dichloropropene

· Proposition 65
· Chemicals known to cause cancer:

71-43-2	benzene
75-27-4	bromodichloromethane
75-25-2	bromoform
56-23-5	carbon tetrachloride
67-66-3	trichloromethane
106-46-7	1,4-dichlorobenzene
75-35-4	1,1-dichloroethylene
107-06-2	1,2-dichloroethane
75-34-3	1,1-dichloroethane
79-01-6	trichloroethylene
78-87-5	1,2-dichloropropane
100-41-4	ethylbenzene
75-09-2	dichloromethane
79-34-5	1,1,2,2-tetrachloroethane

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127-18-4	tetrachloroethylene
79-00-5	1,1,2-trichloroethane

· 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:

67-56-1	methanol
71-43-2	benzene
67-66-3	trichloromethane
79-01-6	trichloroethylene
108-88-3	toluene

· Carcinogenic categories
· EPA (Environmental Protection Agency)

71-43-2	benzene	A, K/L
75-27-4	bromodichloromethane	B2
75-25-2	bromoform	B2
56-23-5	carbon tetrachloride	L
108-90-7	chlorobenzene	D
67-66-3	trichloromethane	B2, L, NL
124-48-1	dibromochloromethane	C
95-50-1	1,2-dichlorobenzene	D
541-73-1	1,3-dichlorobenzene	D
75-35-4	1,1-dichloroethylene	C, S (inh.), I (oral)
107-06-2	1,2-dichloroethane	B2
75-34-3	1,1-dichloroethane	C
79-01-6	trichloroethylene	CaH
156-60-5	trans-dichloroethylene	II
100-41-4	ethylbenzene	D
75-09-2	dichloromethane	L
79-34-5	1,1,2,2-tetrachloroethane	L
127-18-4	tetrachloroethylene	L
108-88-3	toluene	II
71-55-6	1,1,1-trichloroethane	II
79-00-5	1,1,2-trichloroethane	C

· TLV (Threshold Limit Value established by ACGIH)

71-43-2	benzene	A1
75-25-2	bromoform	A3
56-23-5	carbon tetrachloride	A2
108-90-7	chlorobenzene	A3

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67-66-3	trichloromethane	A3
95-50-1	1,2-dichlorobenzene	A4
106-46-7	1,4-dichlorobenzene	A3
75-35-4	1,1-dichloroethylene	A4
107-06-2	1,2-dichloroethane	A4
75-34-3	1,1-dichloroethane	A4
79-01-6	trichloroethylene	A2
78-87-5	1,2-dichloropropane	A4
100-41-4	ethylbenzene	A3
75-09-2	dichloromethane	A3
79-34-5	1,1,2,2-tetrachloroethane	A3
127-18-4	tetrachloroethylene	A3
108-88-3	toluene	A4
71-55-6	1,1,1-trichloroethane	A4
79-00-5	1,1,2-trichloroethane	A3

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

71-43-2	benzene
56-23-5	carbon tetrachloride
67-66-3	trichloromethane
106-46-7	1,4-dichlorobenzene
75-35-4	1,1-dichloroethylene
107-06-2	1,2-dichloroethane
79-01-6	trichloroethylene
78-87-5	1,2-dichloropropane
75-09-2	dichloromethane
79-34-5	1,1,2,2-tetrachloroethane
127-18-4	tetrachloroethylene
79-00-5	1,1,2-trichloroethane

· 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.

· Date of preparation / last revision 04/01/2019 / 2

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· 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. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1A: Carcinogenicity – Category 1A
Repr. 2: Reproductive toxicity – Category 2
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· * Data compared to the previous version altered.

US