

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 03/29/2019

Version Number 2

Reviewed on 03/29/2019

### 1 Identification

- **Product identifier**
- **Trade name:** VOA Standard (1X1 mL)
- **Part number:** DWM-532-1
- **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. 1A H360 May damage 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-dibromo-3-chloropropane  
 carbon tetrachloride  
 (Z)-1,3-dichloropropene  
 trans-1,3-dichloropropene  
 ethyl methacrylate  
 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.  
 May damage 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: CO<sub>2</sub>, powder or water spray.

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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:**

87-68-3	hexachlorobuta-1,3-diene
87-61-6	1,2,3-trichlorobenzene
120-82-1	1,2,4-trichlorobenzene

- **vPvB:**

87-68-3	hexachlorobuta-1,3-diene
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### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

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

- **Dangerous components:**

67-56-1	methanol	82.81%
107-05-1	3-chloropropene	0.253%
71-43-2	benzene	0.253%
75-15-0	carbon disulphide	0.253%
56-23-5	carbon tetrachloride	0.253%
67-66-3	trichloromethane	0.253%
96-12-8	1,2-dibromo-3-chloropropane	0.253%
106-93-4	1,2-dibromoethane	0.253%
106-46-7	1,4-dichlorobenzene	0.253%
107-06-2	1,2-dichloroethane	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%
97-63-2	ethyl methacrylate	0.253%
87-68-3	hexachlorobuta-1,3-diene	0.253%

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67-72-1	hexachloroethane	0.253%
74-88-4	methyl iodide	0.253%
98-82-8	cumene	0.253%
75-09-2	dichloromethane	0.253%
91-20-3	naphthalene	0.253%
76-01-7	pentachloroethane	0.253%
103-65-1	propylbenzene	0.253%
100-42-5	styrene	0.253%
127-18-4	tetrachloroethylene	0.253%
630-20-6	1,1,1,2-Tetrachloroethane	0.253%
79-34-5	1,1,2,2-tetrachloroethane	0.253%
109-99-9	tetrahydrofuran	0.253%
108-88-3	toluene	0.253%
87-61-6	1,2,3-trichlorobenzene	0.253%
120-82-1	1,2,4-trichlorobenzene	0.253%
71-55-6	1,1,1-trichloroethane	0.253%
79-00-5	1,1,2-trichloroethane	0.253%
79-01-6	trichloroethylene	0.253%
96-18-4	1,2,3-trichloropropane	0.253%

#### 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:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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- **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
107-05-1	3-chloropropene	2.8 ppm
994-05-8	tert-amyl methyl ether	60 ppm
71-43-2	benzene	52 ppm
108-86-1	bromobenzene	0.96 ppm
74-97-5	bromochloromethane	600 ppm
75-25-2	bromoform	1.5 ppm
75-65-0	2-methylpropan-2-ol	150 ppm
104-51-8	butylbenzene	3.6 ppm
135-98-8	2-Phenylbutane	1.2 ppm
98-06-6	tert-butylbenzene	1.7 ppm
75-15-0	carbon disulphide	13 ppm
56-23-5	carbon tetrachloride	1.2 ppm
108-90-7	chlorobenzene	10 ppm
67-66-3	trichloromethane	2 ppm
109-69-3	1-chlorobutane	4.1 ppm
95-49-8	2-chlorotoluene	75 ppm
106-43-4	4-chlorotoluene	1.2 ppm
124-48-1	dibromochloromethane	1.1 mg/m <sup>3</sup>
96-12-8	1,2-dibromo-3-chloropropane	0.003 ppm
74-95-3	dibromomethane	3 ppm
106-93-4	1,2-dibromoethane	17 ppm
95-50-1	1,2-dichlorobenzene	50 ppm

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541-73-1	1,3-dichlorobenzene	6 ppm
106-46-7	1,4-dichlorobenzene	30 ppm
75-34-3	1,1-dichloroethane	300 ppm
107-06-2	1,2-dichloroethane	50 ppm
75-35-4	1,1-dichloroethylene	45 ppm
156-59-2	cis-dichloroethylene	140 ppm
156-60-5	trans-dichloroethylene	280 ppm

**· PAC-2:**

67-56-1	methanol	2,100 ppm
107-05-1	3-chloropropene	54 ppm
994-05-8	tert-amyl methyl ether	120 ppm
71-43-2	benzene	800 ppm
108-86-1	bromobenzene	11 ppm
74-97-5	bromochloromethane	830 ppm
75-25-2	bromoform	6.8 ppm
75-65-0	2-methylpropan-2-ol	1,300 ppm
104-51-8	butylbenzene	40 ppm
135-98-8	2-Phenylbutane	13 ppm
98-06-6	tert-butylbenzene	18 ppm
75-15-0	carbon disulphide	160 ppm
56-23-5	carbon tetrachloride	13 ppm
108-90-7	chlorobenzene	150 ppm
67-66-3	trichloromethane	64 ppm
109-69-3	1-chlorobutane	45 ppm
95-49-8	2-chlorotoluene	310 ppm
106-43-4	4-chlorotoluene	13 ppm
124-48-1	dibromochloromethane	12 mg/m <sup>3</sup>
96-12-8	1,2-dibromo-3-chloropropane	2.2 ppm
74-95-3	dibromomethane	33 ppm
106-93-4	1,2-dibromoethane	24 ppm
95-50-1	1,2-dichlorobenzene	170 ppm
541-73-1	1,3-dichlorobenzene	66 ppm
106-46-7	1,4-dichlorobenzene	170 ppm
75-34-3	1,1-dichloroethane	670 ppm
107-06-2	1,2-dichloroethane	200 ppm
75-35-4	1,1-dichloroethylene	500 ppm
156-59-2	cis-dichloroethylene	500 ppm
156-60-5	trans-dichloroethylene	1,000 ppm

**· PAC-3:**

67-56-1	methanol	7200* ppm
107-05-1	3-chloropropene	140 ppm

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994-05-8	tert-amyl methyl ether	170 ppm
71-43-2	benzene	4000* ppm
108-86-1	bromobenzene	240 ppm
74-97-5	bromochloromethane	5,000 ppm
75-25-2	bromoform	41 ppm
75-65-0	2-methylpropan-2-ol	8000* ppm
104-51-8	butylbenzene	240 ppm
135-98-8	2-Phenylbutane	81 ppm
98-06-6	tert-butylbenzene	110 ppm
75-15-0	carbon disulphide	480 ppm
56-23-5	carbon tetrachloride	340 ppm
108-90-7	chlorobenzene	400 ppm
67-66-3	trichloromethane	3,200 ppm
109-69-3	1-chlorobutane	340 ppm
95-49-8	2-chlorotoluene	1,800 ppm
106-43-4	4-chlorotoluene	80 ppm
124-48-1	dibromochloromethane	73 mg/m <sup>3</sup>
96-12-8	1,2-dibromo-3-chloropropane	4.3 ppm
74-95-3	dibromomethane	200 ppm
106-93-4	1,2-dibromoethane	46 ppm
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
75-34-3	1,1-dichloroethane	4,000 ppm
107-06-2	1,2-dichloroethane	300 ppm
75-35-4	1,1-dichloroethylene	1,000 ppm
156-59-2	cis-dichloroethylene	850 ppm
156-60-5	trans-dichloroethylene	1,700 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.

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

#### 107-05-1 3-chloropropene

PEL	Long-term value: 3 mg/m <sup>3</sup> , 1 ppm
REL	Short-term value: 6 mg/m <sup>3</sup> , 2 ppm Long-term value: 3 mg/m <sup>3</sup> , 1 ppm
TLV	Short-term value: 6 mg/m <sup>3</sup> , 2 ppm Long-term value: 3 mg/m <sup>3</sup> , 1 ppm Skin

#### 71-43-2 benzene

PEL	Short-term value: 15* mg/m <sup>3</sup> , 5* ppm Long-term value: 3* mg/m <sup>3</sup> , 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 <sup>3</sup> , 2.5 ppm Long-term value: 1.6 mg/m <sup>3</sup> , 0.5 ppm Skin; BEI

#### 75-15-0 carbon disulphide

PEL	Long-term value: 20 ppm Ceiling limit value: 30; 100* ppm *30-min peak per 8-hr shift
REL	Short-term value: 30 mg/m <sup>3</sup> , 10 ppm Long-term value: 3 mg/m <sup>3</sup> , 1 ppm Skin
TLV	Long-term value: 3.13 mg/m <sup>3</sup> , 1 ppm Skin, BEI

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**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 <sup>3</sup> , 2* ppm *60-min; See Pocket Guide App. A
TLV	Short-term value: 63 mg/m <sup>3</sup> , 10 ppm Long-term value: 31 mg/m <sup>3</sup> , 5 ppm Skin

**67-66-3 trichloromethane**

PEL	Ceiling limit value: 240 mg/m <sup>3</sup> , 50 ppm
REL	Short-term value: 9.78* mg/m <sup>3</sup> , 2* ppm *60-min; See Pocket Guide App. A
TLV	Long-term value: 49 mg/m <sup>3</sup> , 10 ppm

**96-12-8 1,2-dibromo-3-chloropropane**

PEL	Long-term value: 0.001 ppm see 29 CFR 1910.1044
REL	See Pocket Guide App. A

**106-93-4 1,2-dibromoethane**

PEL	Long-term value: 20 ppm Ceiling limit value: 30; 50* ppm *5-min peak per 8-hr shift
REL	Long-term value: 0.045 ppm Ceiling limit value: 0.13* ppm *15-min; See Pocket Guide App. A
TLV	Skin

**106-46-7 1,4-dichlorobenzene**

PEL	Long-term value: 450 mg/m <sup>3</sup> , 75 ppm
REL	See Pocket Guide App. A
TLV	Long-term value: 60 mg/m <sup>3</sup> , 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 <sup>3</sup> , 2 ppm Long-term value: 4 mg/m <sup>3</sup> , 1 ppm See Pocket Guide Apps. A and C
TLV	Long-term value: 40 mg/m <sup>3</sup> , 10 ppm

**100-41-4 ethylbenzene**

PEL	Long-term value: 435 mg/m <sup>3</sup> , 100 ppm
REL	Short-term value: 545 mg/m <sup>3</sup> , 125 ppm Long-term value: 435 mg/m <sup>3</sup> , 100 ppm
TLV	Long-term value: 87 mg/m <sup>3</sup> , 20 ppm BEI

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**87-68-3 hexachlorobuta-1,3-diene**

REL	Long-term value: 0.24 mg/m <sup>3</sup> , 0.02 ppm Skin; See Pocket Guide App. A
TLV	Long-term value: 0.21 mg/m <sup>3</sup> , 0.02 ppm Skin

**67-72-1 hexachloroethane**

PEL	Long-term value: 10 mg/m <sup>3</sup> , 1 ppm Skin
REL	Long-term value: 10 mg/m <sup>3</sup> , 1 ppm Skin; See Pocket Guide Apps. A and C
TLV	Long-term value: 9.7 mg/m <sup>3</sup> , 1 ppm Skin

**74-88-4 methyl iodide**

PEL	Long-term value: 28 mg/m <sup>3</sup> , 5 ppm Skin
REL	Long-term value: 10 mg/m <sup>3</sup> , 2 ppm Skin; See Pocket Guide App. A
TLV	Long-term value: 12 mg/m <sup>3</sup> , 2 ppm Skin

**98-82-8 cumene**

PEL	Long-term value: 245 mg/m <sup>3</sup> , 50 ppm Skin
REL	Long-term value: 245 mg/m <sup>3</sup> , 50 ppm Skin
TLV	Long-term value: (246) NIC-0.5 mg/m <sup>3</sup> , (50) NIC-0.1 ppm NIC-A3

**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 <sup>3</sup> , 50 ppm BEI

**91-20-3 naphthalene**

PEL	Long-term value: 50 mg/m <sup>3</sup> , 10 ppm
REL	Short-term value: 75 mg/m <sup>3</sup> , 15 ppm Long-term value: 50 mg/m <sup>3</sup> , 10 ppm
TLV	Long-term value: 52 mg/m <sup>3</sup> , 10 ppm Skin; BEI

**76-01-7 pentachloroethane**

REL	Handle with caution; See Pocket Guide App. C
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**100-42-5 styrene**

PEL	Long-term value: 100 ppm Ceiling limit value: 200; 600* ppm *5-min peak in any 3 hrs
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REL	Short-term value: 425 mg/m <sup>3</sup> , 100 ppm Long-term value: 215 mg/m <sup>3</sup> , 50 ppm
TLV	Short-term value: (170) mg/m <sup>3</sup> , (40) ppm Long-term value: (85) NIC-8.5 mg/m <sup>3</sup> , (20) NIC-2 ppm BEI, NIC-A3, NIC-OTO

**127-18-4 tetrachloroethylene**

PEL	Long-term value: 100 ppm Ceiling limit value: 200; 300* ppm *5-min peak in any 3 hrs
REL	Minimize workplace exp. concs.; Pocket Guide App. A
TLV	Short-term value: 685 mg/m <sup>3</sup> , 100 ppm Long-term value: 170 mg/m <sup>3</sup> , 25 ppm BEI

**630-20-6 1,1,1,2-Tetrachloroethane**

REL	Handle with caution; See Pocket Guide App. C
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**79-34-5 1,1,2,2-tetrachloroethane**

PEL	Long-term value: 35 mg/m <sup>3</sup> , 5 ppm Skin
REL	Long-term value: 7 mg/m <sup>3</sup> , 1 ppm Skin; See Pocket Guide Apps. A and C
TLV	Long-term value: 6.9 mg/m <sup>3</sup> , 1 ppm Skin

**109-99-9 tetrahydrofuran**

PEL	Long-term value: 590 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 735 mg/m <sup>3</sup> , 250 ppm Long-term value: 590 mg/m <sup>3</sup> , 200 ppm
TLV	Short-term value: 295 mg/m <sup>3</sup> , 100 ppm Long-term value: 147 mg/m <sup>3</sup> , 50 ppm Skin

**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 <sup>3</sup> , 150 ppm Long-term value: 375 mg/m <sup>3</sup> , 100 ppm
TLV	Long-term value: 75 mg/m <sup>3</sup> , 20 ppm BEI

**120-82-1 1,2,4-trichlorobenzene**

REL	Ceiling limit value: 40 mg/m <sup>3</sup> , 5 ppm
TLV	Ceiling limit value: 37 mg/m <sup>3</sup> , 5 ppm

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

PEL	Long-term value: 1900 mg/m <sup>3</sup> , 350 ppm
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REL Ceiling limit value: 1900\* mg/m<sup>3</sup>, 350\* ppm  
\*15-min; See Pocket Guide App. C

TLV Short-term value: 2460 mg/m<sup>3</sup>, 450 ppm  
Long-term value: 1910 mg/m<sup>3</sup>, 350 ppm  
BEI

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

PEL Long-term value: 45 mg/m<sup>3</sup>, 10 ppm  
Skin

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

TLV Long-term value: 55 mg/m<sup>3</sup>, 10 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

REL See Pocket Guide Apps. A and C

TLV Short-term value: 135 mg/m<sup>3</sup>, 25 ppm  
Long-term value: 54 mg/m<sup>3</sup>, 10 ppm  
BEI

**96-18-4 1,2,3-trichloropropane**

PEL Long-term value: 300 mg/m<sup>3</sup>, 50 ppm

REL Long-term value: 60 mg/m<sup>3</sup>, 10 ppm  
Skin, See Pocket Guide App. A

TLV Long-term value: 0.03 mg/m<sup>3</sup>, 0.005 ppm

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

BEI 15 mg/L  
Medium: urine  
Time: end of shift  
Parameter: Methanol (background, nonspecific)

**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)

**75-15-0 carbon disulphide**

BEI 0.5 mg/g creatinine  
Medium: urine  
Time: end of shift  
Parameter: 2-Thioxothiazolidine-4-carboxylic acid (background, nonspecific)

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**Trade name: VOA Standard (1X1 mL)**

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**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)
-----	---

**100-42-5 styrene**

BEI	400 mg/g creatinine Medium: urine Time: end of shift Parameter: Mandelic acid plus phenylglyoxylic acid (nonspecific)
	0.2 mg/L Medium: venous blood Time: end of shift Parameter: Styrene (semi-quantitative)

**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

**109-99-9 tetrahydrofuran**

BEI	2 mg/L Medium: urine Time: end of shift Parameter: Tetrahydrofuran
-----	---

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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)

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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)

· **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.

· **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

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Trade name: VOA Standard (1X1 mL)

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## · 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: Not determined.

· 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.

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**Trade name: VOA Standard (1X1 mL)**

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<b>· Solvent content:</b>	
<b>Organic solvents:</b>	91.2 %
<b>VOC content:</b>	90.14 %
	901.4 g/l / 7.52 lb/gal
<b>· Solids content:</b>	
	1.5 %
<b>· Other information</b>	
	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	5,110 mg/kg
Dermal	LD50	>1,215 mg/kg
Inhalative	LC50/4 h	>3.52 mg/L

**67-56-1 methanol**

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

**107-05-1 3-chloropropene**

Oral	LD50	275 mg/kg (rat)
Dermal	LD50	398 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)

**75-15-0 carbon disulphide**

Oral	LD50	1,200 mg/kg (rat)
Inhalative	LC50/4 h	10.35 mg/L (rat)

**56-23-5 carbon tetrachloride**

Oral	LD50	2,350 mg/kg (rat)
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Dermal	LD50	5,070 mg/kg (rat)
<b>67-66-3 trichloromethane</b>		
Oral	LD50	908 mg/kg (rat)
Dermal	LD50	75 mg/kg (rat)
		>20,000 mg/kg (rabbit)
<b>96-12-8 1,2-dibromo-3-chloropropane</b>		
Oral	LD50	170 mg/kg (rat)
Dermal	LD50	1,420 mg/kg (rat)
		1,400 mg/kg (rabbit)
<b>106-93-4 1,2-dibromoethane</b>		
Oral	LD50	108 mg/kg (rat)
		55 mg/kg (rabbit)
Dermal	LD50	300 mg/kg (rabbit)
<b>95-50-1 1,2-dichlorobenzene</b>		
Oral	LD50	500 mg/kg (rat)
Dermal	LD50	>10,000 mg/kg (rabbit)
<b>106-46-7 1,4-dichlorobenzene</b>		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	>5.07 mg/L (rat)
<b>107-06-2 1,2-dichloroethane</b>		
Oral	LD50	670 mg/kg (rat)
Dermal	LD50	2,800 mg/kg (rat)
		2,800 mg/kg (rabbit)
<b>10061-01-5 (Z)-1,3-dichloropropene</b>		
Oral	LD50	250 mg/kg (rat)
<b>10061-02-6 trans-1,3-dichloropropene</b>		
Oral	LD50	250 mg/kg (rat)
<b>100-41-4 ethylbenzene</b>		
Oral	LD50	3,500 mg/kg (rat)
Dermal	LD50	15,354 mg/kg (rabbit)
Inhalative	LC50/4 h	17.2 mg/L (rat)
<b>97-63-2 ethyl methacrylate</b>		
Oral	LD50	1,223 mg/kg (rat)
Inhalative	LC50/4 h	8,300 mg/L (rat)
<b>87-68-3 hexachlorobuta-1,3-diene</b>		
Oral	LD50	82 mg/kg (rat)
Dermal	LD50	100 mg/kg (rabbit)
Inhalative	LC50/4 h	370 mg/L (mouse)
<b>67-72-1 hexachloroethane</b>		
Dermal	LD50	32,000 mg/kg (rabbit)

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**74-88-4 methyl iodide**

Oral	LD50	76 mg/kg (rat)
Inhalative	LC50/4 h	1,300 mg/L (rat)

**98-82-8 cumene**

Oral	LD50	1,400 mg/kg (rat)
Dermal	LD50	>3,160 mg/kg (rabbit)
Inhalative	LC50/4 h	24.7 mg/L (mouse)

**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)

**91-20-3 naphthalene**

Oral	LD50	490 mg/kg (rat)
Dermal	LD50	5,000 mg/kg (rat) 20,000 mg/kg (rabbit)

**103-65-1 propylbenzene**

Oral	LD50	6,040 mg/kg (rat)
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**100-42-5 styrene**

Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	11.8 mg/L (rat)

**127-18-4 tetrachloroethylene**

Oral	LD50	2,629 mg/kg (rat)
Inhalative	LC50/4 h	4,000 mg/L (rat)

**630-20-6 1,1,1,2-Tetrachloroethane**

Oral	LD50	670 mg/kg (rat)
Dermal	LD50	20,000 mg/kg (rabbit)
Inhalative	LC50/4 h	2,100 mg/L (rat)

**79-34-5 1,1,2,2-tetrachloroethane**

Oral	LD50	200 mg/kg (rat)
------	------	-----------------

**109-99-9 tetrahydrofuran**

Oral	LD50	2,500 mg/kg (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)

**87-61-6 1,2,3-trichlorobenzene**

Oral	LD50	1,830 mg/kg (rat)
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**120-82-1 1,2,4-trichlorobenzene**

Oral	LD50	756 mg/kg (rat)
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Dermal	LD50	6,139 mg/kg (rat)
<b>71-55-6 1,1,1-trichloroethane</b>		
Oral	LD50	10,300 mg/kg (rat)
<b>79-00-5 1,1,2-trichloroethane</b>		
Oral	LD50	836 mg/kg (rat)
<b>79-01-6 trichloroethylene</b>		
Oral	LD50	2,402 mg/kg (mouse) 4,290 mg/kg (rat)
Dermal	LD50	8,450 mg/kg (mouse)
<b>96-18-4 1,2,3-trichloropropane</b>		
Oral	LD50	152 mg/kg (rat)
Dermal	LD50	523 mg/kg (rabbit)
Inhalative	LC50/4 h	4,800 mg/L (rat)

- **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)**

107-05-1	3-chloropropene	3
71-43-2	benzene	1
75-25-2	bromoform	3
56-23-5	carbon tetrachloride	2B
67-66-3	trichloromethane	2B
124-48-1	dibromochloromethane	3
96-12-8	1,2-dibromo-3-chloropropane	2B
106-93-4	1,2-dibromoethane	2A
95-50-1	1,2-dichlorobenzene	3
541-73-1	1,3-dichlorobenzene	3
106-46-7	1,4-dichlorobenzene	2B
107-06-2	1,2-dichloroethane	2B
75-35-4	1,1-dichloroethylene	3
78-87-5	1,2-dichloropropane	1
100-41-4	ethylbenzene	2B
87-68-3	hexachlorobuta-1,3-diene	3
67-72-1	hexachloroethane	2B
74-88-4	methyl iodide	3

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98-82-8	cumene	2B
1634-04-4	tert-butyl methyl ether	3
75-09-2	dichloromethane	2A
91-20-3	naphthalene	2B
76-01-7	pentachloroethane	3
100-42-5	styrene	2B
127-18-4	tetrachloroethylene	2A
630-20-6	1,1,1,2-Tetrachloroethane	2B
79-34-5	1,1,2,2-tetrachloroethane	2B
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
56-23-5	carbon tetrachloride	R
67-66-3	trichloromethane	R
96-12-8	1,2-dibromo-3-chloropropane	R
106-93-4	1,2-dibromoethane	R
106-46-7	1,4-dichlorobenzene	R
107-06-2	1,2-dichloroethane	R
67-72-1	hexachloroethane	R
98-82-8	cumene	R
75-09-2	dichloromethane	R
91-20-3	naphthalene	R
100-42-5	styrene	R
127-18-4	tetrachloroethylene	R
79-01-6	trichloroethylene	K
96-18-4	1,2,3-trichloropropane	R

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

71-43-2	benzene	
96-12-8	1,2-dibromo-3-chloropropane	
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.

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**· 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:**

87-68-3	hexachlorobuta-1,3-diene
87-61-6	1,2,3-trichlorobenzene
120-82-1	1,2,4-trichlorobenzene

**· vPvB:**

87-68-3	hexachlorobuta-1,3-diene
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**· 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

**· UN proper shipping name**
**· DOT** Methanol solution

**· IMDG, IATA** METHANOL solution

**· Transport hazard class(es)**
**· DOT**

**· Class**

3 Flammable liquids

**· Label**

3, 6.1

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· **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

· **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):**

75-15-0	carbon disulphide
67-66-3	trichloromethane
75-34-3	1,1-dichloroethane

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**· Section 313 (Specific toxic chemical listings):**

67-56-1	methanol
107-05-1	3-chloropropene
71-43-2	benzene
75-25-2	bromoform
75-65-0	2-methylpropan-2-ol
75-15-0	carbon disulphide
56-23-5	carbon tetrachloride
108-90-7	chlorobenzene
67-66-3	trichloromethane
96-12-8	1,2-dibromo-3-chloropropane
74-95-3	dibromomethane
106-93-4	1,2-dibromoethane
95-50-1	1,2-dichlorobenzene
541-73-1	1,3-dichlorobenzene
106-46-7	1,4-dichlorobenzene
75-34-3	1,1-dichloroethane
107-06-2	1,2-dichloroethane
75-35-4	1,1-dichloroethylene
78-87-5	1,2-dichloropropane
10061-02-6	trans-1,3-dichloropropene
100-41-4	ethylbenzene
87-68-3	hexachlorobuta-1,3-diene
67-72-1	hexachloroethane
74-88-4	methyl iodide
98-82-8	cumene
1634-04-4	tert-butyl methyl ether
75-09-2	dichloromethane
91-20-3	naphthalene
76-01-7	pentachloroethane
100-42-5	styrene

**· TSCA (Toxic Substances Control Act):**

67-56-1	methanol
107-05-1	3-chloropropene
919-94-8	tert-amyl ethyl ether
994-05-8	tert-amyl methyl ether
71-43-2	benzene
108-86-1	bromobenzene
74-97-5	bromochloromethane
75-25-2	bromoform
75-65-0	2-methylpropan-2-ol

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104-51-8	butylbenzene
135-98-8	2-Phenylbutane
98-06-6	tert-butylbenzene
75-15-0	carbon disulphide
56-23-5	carbon tetrachloride
108-90-7	chlorobenzene
67-66-3	trichloromethane
109-69-3	1-chlorobutane
95-49-8	2-chlorotoluene
106-43-4	4-chlorotoluene
124-48-1	dibromochloromethane
96-12-8	1,2-dibromo-3-chloropropane
74-95-3	dibromomethane
106-93-4	1,2-dibromoethane
95-50-1	1,2-dichlorobenzene
541-73-1	1,3-dichlorobenzene
106-46-7	1,4-dichlorobenzene
75-34-3	1,1-dichloroethane
107-06-2	1,2-dichloroethane
75-35-4	1,1-dichloroethylene
156-59-2	cis-dichloroethylene

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

96-12-8	1,2-dibromo-3-chloropropane
10061-01-5	(Z)-1,3-dichloropropene
10061-02-6	trans-1,3-dichloropropene
87-68-3	hexachlorobuta-1,3-diene

**· Proposition 65**
**· Chemicals known to cause cancer:**

71-43-2	benzene
75-25-2	bromoform
56-23-5	carbon tetrachloride
67-66-3	trichloromethane
96-12-8	1,2-dibromo-3-chloropropane
106-93-4	1,2-dibromoethane
106-46-7	1,4-dichlorobenzene
75-34-3	1,1-dichloroethane
107-06-2	1,2-dichloroethane
75-35-4	1,1-dichloroethylene
78-87-5	1,2-dichloropropane
100-41-4	ethylbenzene
87-68-3	hexachlorobuta-1,3-diene

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67-72-1	hexachloroethane
74-88-4	methyl iodide
98-82-8	cumene
75-09-2	dichloromethane
91-20-3	naphthalene
100-42-5	styrene
127-18-4	tetrachloroethylene
630-20-6	1,1,1,2-Tetrachloroethane
79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
79-01-6	trichloroethylene
96-18-4	1,2,3-trichloropropane

**· Chemicals known to cause reproductive toxicity for females:**

75-15-0	carbon disulphide
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**· Chemicals known to cause reproductive toxicity for males:**

71-43-2	benzene
75-15-0	carbon disulphide
96-12-8	1,2-dibromo-3-chloropropane
106-93-4	1,2-dibromoethane
79-01-6	trichloroethylene

**· Chemicals known to cause developmental toxicity:**

67-56-1	methanol
71-43-2	benzene
75-15-0	carbon disulphide
67-66-3	trichloromethane
106-93-4	1,2-dibromoethane
108-88-3	toluene
79-01-6	trichloroethylene

**· Carcinogenic categories**
**· EPA (Environmental Protection Agency)**

107-05-1	3-chloropropene	C
71-43-2	benzene	A, K/L
108-86-1	bromobenzene	II
74-97-5	bromochloromethane	D
75-25-2	bromoform	B2
56-23-5	carbon tetrachloride	L
108-90-7	chlorobenzene	D
67-66-3	trichloromethane	B2, L, NL
109-69-3	1-chlorobutane	D
124-48-1	dibromochloromethane	C
106-93-4	1,2-dibromoethane	L

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95-50-1	1,2-dichlorobenzene	D
541-73-1	1,3-dichlorobenzene	D
75-34-3	1,1-dichloroethane	C
107-06-2	1,2-dichloroethane	B2
75-35-4	1,1-dichloroethylene	C, S (inh.), I (oral)
156-59-2	cis-dichloroethylene	II
156-60-5	trans-dichloroethylene	II
100-41-4	ethylbenzene	D
87-68-3	hexachlorobuta-1,3-diene	C
67-72-1	hexachloroethane	L
98-82-8	cumene	D, CBD
75-09-2	dichloromethane	L
91-20-3	naphthalene	C, CBD
127-18-4	tetrachloroethylene	L
630-20-6	1,1,1,2-Tetrachloroethane	C
79-34-5	1,1,2,2-tetrachloroethane	L
109-99-9	tetrahydrofuran	SC
108-88-3	toluene	II
120-82-1	1,2,4-trichlorobenzene	D

**· TLV (Threshold Limit Value established by ACGIH)**

107-05-1	3-chloropropene	A3
71-43-2	benzene	A1
75-25-2	bromoform	A3
75-65-0	2-methylpropan-2-ol	A4
75-15-0	carbon disulphide	A4
56-23-5	carbon tetrachloride	A2
108-90-7	chlorobenzene	A3
67-66-3	trichloromethane	A3
106-93-4	1,2-dibromoethane	A3
95-50-1	1,2-dichlorobenzene	A4
106-46-7	1,4-dichlorobenzene	A3
75-34-3	1,1-dichloroethane	A4
107-06-2	1,2-dichloroethane	A4
75-35-4	1,1-dichloroethylene	A4
78-87-5	1,2-dichloropropane	A4
100-41-4	ethylbenzene	A3
87-68-3	hexachlorobuta-1,3-diene	A3
67-72-1	hexachloroethane	A3
1634-04-4	tert-butyl methyl ether	A3
75-09-2	dichloromethane	A3
91-20-3	naphthalene	A4

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100-42-5	styrene	A4
127-18-4	tetrachloroethylene	A3
79-34-5	1,1,2,2-tetrachloroethane	A3
109-99-9	tetrahydrofuran	A3
108-88-3	toluene	A4
71-55-6	1,1,1-trichloroethane	A4
79-00-5	1,1,2-trichloroethane	A3
79-01-6	trichloroethylene	A2
96-18-4	1,2,3-trichloropropane	A3

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

71-43-2	benzene
56-23-5	carbon tetrachloride
67-66-3	trichloromethane
96-12-8	1,2-dibromo-3-chloropropane
106-93-4	1,2-dibromoethane
106-46-7	1,4-dichlorobenzene
107-06-2	1,2-dichloroethane
75-35-4	1,1-dichloroethylene
78-87-5	1,2-dichloropropane
87-68-3	hexachlorobuta-1,3-diene
67-72-1	hexachloroethane
74-88-4	methyl iodide
75-09-2	dichloromethane
127-18-4	tetrachloroethylene
79-34-5	1,1,2,2-tetrachloroethane
79-00-5	1,1,2-trichloroethane
79-01-6	trichloroethylene
96-18-4	1,2,3-trichloropropane

**· 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** 03/29/2019 / 1

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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. 1A: Reproductive toxicity – Category 1A  
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.**

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