

Safety Data Sheet

acc. to OSHA HCS

Revision date 07/07/2024

1 Identification

- **Product identifier**
- **Product Name:** Disinfection Byproducts Standard (1X1 mL)
- **Part number:** HCM-551B-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.



GHS08 Health hazard

Carcinogenicity 2

H351 Suspected of causing cancer.



GHS07

Eye Irritation 2A

H319 Causes serious eye irritation.

Specific Target Organ Toxicity - Single Exposure 3 H336 May cause drowsiness or dizziness.

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



GHS02



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
acetone
dibromoacetonitrile
- **Hazard statements**
H225 Highly flammable liquid and vapor.
H319 Causes serious eye irritation.

(Contd. on page 2)

Safety Data Sheet acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 1)

H351 Suspected of causing cancer.

H336 May cause drowsiness or dizziness.

Precautionary statements

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

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

P261 Avoid breathing 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.

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.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

P312 Call a poison center/doctor if you feel unwell.

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

P337+P313 If eye irritation persists: 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 = 2

Fire = 3

Reactivity = 0

HMIS-ratings (scale 0 - 4)


Health = 2

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.

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 2)

· Dangerous components:

67-64-1	acetone	95.5753%
76-06-2	trichloronitromethane	0.6321%
513-88-2	1,1-dichloroacetone	0.6321%
545-06-2	trichloroacetonitrile	0.6321%
3252-43-5	dibromoacetonitrile	0.6321%

4 First-aid measures

· Description of first aid measures
· General information: Immediately remove any clothing soiled by the product.

· After inhalation: Supply fresh air; consult doctor in case of complaints.

· After skin contact: Immediately rinse with water.

· After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, 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 No further relevant information available.

· Advice for firefighters
· Protective equipment: No special measures required.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

· Environmental precautions: Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to 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:

67-64-1	acetone	200 ppm
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(Contd. on page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 3)

76-06-2	trichloronitromethane	0.050 ppm
· PAC-2:		
67-64-1	acetone	3200* ppm
76-06-2	trichloronitromethane	0.15 ppm
· PAC-3:		
67-64-1	acetone	5700* ppm
76-06-2	trichloronitromethane	1.4 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:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

67-64-1 acetone

PEL	Long-term value: 2400 mg/m ³ , 1000 ppm
REL	Long-term value: 590 mg/m ³ , 250 ppm
TLV	Short-term value: 500 ppm Long-term value: 250 ppm A4, BEI

76-06-2 trichloronitromethane

PEL	Long-term value: 0.7 mg/m ³ , 0.1 ppm
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(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 4)

REL	Long-term value: 0.7 mg/m ³ , 0.1 ppm
TLV	Long-term value: 0.1 ppm A4
3252-43-5 dibromoacetonitrile	
PEL	Long-term value: 5 mg/m ³ as CN; Skin
Ingredients with biological limit values:	
67-64-1 acetone	
BEI	25 mg/L Medium: urine Time: end of shift Parameter: Acetone (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.

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

· **Eye protection:**



Tightly sealed goggles

US

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 5)

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Fluid

Color: Colorless

· **Odor:** Characteristic

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: -94.7 °C (-138.5 °F)

Boiling point/Boiling range: 55 °C (131 °F)

· **Flash point:** -17 °C (1.4 °F)

· **Flammability (solid, gaseous):** Highly flammable.

· **Auto igniting:** 465 °C (869 °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: 2.6 Vol %

Upper: 13 Vol %

· **Vapor pressure at 20 °C (68 °F):** 245.3 hPa (184 mm Hg)

· **Density at 20 °C (68 °F):** 0.791 g/cm³ (6.6009 lbs/gal)

· **Relative density** Not determined.

· **Vapor density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

Water: Not miscible or difficult to mix.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

Dynamic: Not determined.

Kinematic: Not determined.

· **Solvent content:**

Organic solvents: 95.6 %

VOC content: 0.00 %

0.0 g/l / 0.00 lb/gal

· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

(Contd. on page 7)

Safety Data Sheet acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 6)

- **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	9,837 mg/kg
Dermal	LD50	35,596 mg/kg
Inhalative	LC50/4 h	67.8 mg/L

67-64-1 acetone

Oral	LD50	5,800 mg/kg (rat)
Dermal	LD50	20,000 mg/kg (rabbit)

76-06-2 trichloronitromethane

Oral	LD50	250 mg/kg (rat)
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513-88-2 1,1-dichloroacetone

Oral	LD50	250 mg/kg (mouse)
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545-06-2 trichloroacetoneitrile

Oral	LD50	250 mg/kg (rat)
Dermal	LD50	900 mg/kg (rabbit)

3252-43-5 dibromoacetoneitrile

Oral	LD50	245 mg/kg (rat)
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Primary irritant effect:

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

· **on the eye:** Irritating effect.

· **Sensitization:** No sensitizing effects known.

Additional toxicological information:

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

Carcinogenic categories

IARC (International Agency for Research on Cancer)

545-06-2	trichloroacetoneitrile	3
3018-12-0	dichloromethyl cyanide	3
3252-43-5	dibromoacetoneitrile	2B
83463-62-1	bromochloroacetoneitrile	3

NTP (National Toxicology Program)

None of the ingredients is listed.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 7)

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

None of the ingredients is listed.

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 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even 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** UN1993
- **UN proper shipping name**
- **DOT** Flammable liquids, n.o.s. (Acetone)
- **IMDG, IATA** FLAMMABLE LIQUID, N.O.S. (ACETONE)
- **Transport hazard class(es)**
- **DOT**
- 
- **Class** 3 Flammable liquids

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 8)

· Label	3
· IMDG, IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	
· DOT, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Flammable liquids
· Hazard identification number (Kemler code):	33
· EMS Number:	F-E, <u>S</u> -E
· Stowage Category	B
· Transport in bulk according to Annex II of MARPOL/73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 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 1993 FLAMMABLE LIQUID, N.O.S. (ACETONE), 3, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

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

76-06-2 trichloronitromethane

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

67-64-1	acetone	ACTIVE
76-06-2	trichloronitromethane	ACTIVE
545-06-2	trichloroacetonitrile	ACTIVE
3252-43-5	dibromoacetonitrile	ACTIVE

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 9)

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65
· Chemicals known to cause cancer:

3252-43-5 dibromoacetonitrile

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· Carcinogenic categories
· EPA (Environmental Protection Agency)

67-64-1 acetone

I

· TLV (Threshold Limit Value)

67-64-1 acetone

A4

76-06-2 trichloronitromethane

A4

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

None of the ingredients is listed.

· 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

· Date of preparation / last revision 08/23/2024 / 3

· 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

(Contd. on page 11)

Safety Data Sheet
acc. to OSHA HCS

Printing date 08/23/2024

Revision date 07/07/2024

Product Name: Disinfection Byproducts Standard (1X1 mL)

(Contd. of page 10)

Flammable Liquids 2: Flammable liquids – Category 2

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Carcinogenicity 2: Carcinogenicity – Category 2

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

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

US